FUNCTIONAL SERVICING REPORT FOR

Kettle Creek Subdivision
37719 Lake Line
Port Stanley ON

Submitted: February 2021
Revised: July 2021
Revised: July 2022

Strathroy Turf Farms Inc.

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SBM-18-0530

1. INTRODUCTION

This Functional Servicing Report (report) has been prepared by Strik, Baldinelli, Moniz Ltd. (SBM) to address the first draft plan submission comments received from the Township of Southwold dated December 13, 2021, from the Municipality of Central Elgin dated January 12, 2022, from the Kettle Creek Conservation Authority dated December 17, 2021, a new coordination to the slope stability study by EXP dated April 7, 2022, and all subsequent communications and conversations for the proposed Kettle Creek Subdivision development located at 37719 Lake Line in Port Stanley, Ontario (Subject Site).

This report is intended to represent a component of the overall site design submission to the Municipality of Central Elgin and should be read in conjunction with all other submitted documents. The following, along with the Site Engineering Drawings 1-19, provided separately, have been prepared to address the Municipality's requirements for the subject site.

The proposed subject site is 14.89 ha site in area and is bordered by the Lake Line Right-of-way (R.O.W) to the north and east. Kettle Creek Golf and County Club, and a Public School to the south, and River Road R.O.W to the west. It is our understanding that the proposed development is to include approximately 70 single family residential units, 18 semi-detached units, and 9 townhouse units (totalling 97 dwellings) with 6 additional blocks allotted for open space and walkways.

The work has been executed following the most recent Municipality of Central Elgin Infrastructure Design Guidelines and Construction Standards (IDGCS) 2004, per the discussions and request during the subdivision consultation meeting on (December 3, 2019), The City of St Thomas Design Guidelines Manual (DGM) 2021, Ministry of the Environment, Conservation and Parks (MECP) Design Guidelines for Drinking-Water Systems, 2008 (DGDWS), MECP Design Guidelines for Stormwater Management Planning and Design Manual (SWMP&DM), and Ministry of Transportation Drainage Management Manual (MTO DMM).

1.1 EXISTING (PRE-DEVELOPMENT) CONDITIONS

Under pre-development conditions, the subject site is an open field consisting of an existing creek (open channel portion of the Marr Drain) located adjacent to the southeast boundary line, within the subject site property. Additionally, there is an existing municipality drain located within the property, as well as, an existing building, and silo located on the west side of the property. As shown on the Existing Conditions, Removals, and Sediment & Erosion Control Plan Sheets 3A & 3B, by SBM provided separately, the entire site drains to the southeast of the property, towards the existing open channel portion of the Marr Drain. The pre-development runoff coefficient (C) for the site is calculated to be 0.22.

1.2 PROPOSED (POST-DEVELOPMENT) CONDITIONS

Post-development conditions were obtained from Engineering Drawings by SBM, provided separately (see Master Servicing Plan, Sheet 4A & 4B). Under the post-development conditions, the site will be comprised of 70 single family residential units, 18 semi-detached units, and 9 townhouse units (totalling 97 dwellings) with 6 additional blocks allotted for open space and walkways. As per the municipality's IDGCS for single family/semi-detached dwellings, the runoff coefficient (C) for single family residential ranges from 0.35 - 0.75. Therefor, 0.5 was used for the post-development runoff coefficient for both the single family and semi-detached residential dwellings on this site. When also considering the imperviousness of the R.O.W. which was calculated to be

0.57, the composite runoff coefficient for both the single family/semi-detached dwellings and the right of way is 0.52 as shown in stormwater management (SWM) calculations provided in Appendix E.

2. SANITARY SERVICING

According to the Carlow Road watermain replacement – Phase 1 drawing, dated February 2012, and provided in Appendix A, there is an existing 200 mm diameter combined sewer in the Carlow Road R.O.W., that is directed to an existing pumping station that ultimately pumps the flows up Lake Line and discharges into the treatment facility on Scotch Line. According to the Master Servicing Plan Sheets 4A & 4B of the engineering drawings, provided separately, the site's sanitary sewer is proposed to extend southeast through the existing Kettle Creek Golf and Country Club lands (same ownership as development), then extend easterly through the existing arena located southeast of the proposed site, and ultimately discharging into the existing 200mm diameter combined sewer in the Carlow Road R.O.W. The 200 mm diameter combined sewer currently does not have enough capacity from the proposed connection to the existing pumping station for the proposed flows, therefore the existing 200 mm diameter combined sewer downstream of the proposed sanitary sewer connection in the Carlow Road R.O.W. will be replaced with a 375 mm diameter and 450 mm diameter sewer to convey existing and proposed sanitary flows to the pumping station. The existing pumping station has been confirmed by the Municipality to have sufficient capacity for the additional flows.

The site was divided into eighteen (18) sanitary catchments areas (A201 to A218). Four (4) external catchment areas (EX201 to EX204) which are currently discharging sanitary flows to the existing 200 mm diameter combined sewer in the Carlow Road R.O.W. were also included in the Sanitary Design Sheet as shown on the Sanitary Catchment Areas Plan, Sheet 7, provided separately. The population for each sanitary catchment was calculated using the low-density population of 3.5 people per unit, as per Municipality's IDGCS. For EX202, the population of 707 is calculated by adding 600 (for elementary school from the DSRM 2022 section 3.8.1) plus 82 (for the arena) plus 25 (number of lots 7 * 3.5 people/unit). The sanitary peak flow was calculated by multiplying population in each sanitary catchment area by the average usage of 400 litres per day per capita. The sanitary peak design flow for the entire site area was calculated by adding residential peak flow and the infiltration allowance of 0.20 litres per second per hectare. These calculations are provided in the Sanitary Design Sheet, Sheet #8, provided separately.

The sanitary design sheet shows that the proposed sanitary sewers at the proposed slopes have sufficient capacity to convey the subject site's proposed sanitary peak design flow of 8.38 L/s to the sanitary sewer in the Carlow Road R.O.W., and ultimately to the existing pumping station. Refer to the Sanitary catchment Areas Plan and Sanitary Design Sheet on Sheets 7 and 8 respectively, provided separately.

Additional to the values calculated from the above, the storm portion of the existing 200 mm combined sewer (EX 203) was accounted for with approximately 0.08 ha tributary to the existing catch basin on the SAMH 2 to SAMH 15 pipe section, this was calculated assuming a time of concentration of 20.0 minutes (inlet time according to Municipality of Central Elgin) and runoff coefficient 'C' of 0.7 to add approximately 8 L/s to catchment EX202 under the 2-year design storm.

The storm portion of the existing 200 mm diameter combined sewer north of SAMH 15 has been estimated with a catchment area of 0.78 ha of storm drainage that is tributary to the existing 200 mm diameter combined sewer north of SAMH 15 based on the catch basins in Carlow Road R.O.W. north of SAMH 15. The storm flows were calculated assuming a time of concentration of 22.9 minutes (approximately 175 m from top of assumed catchment, limited at 1 m/s adjustment from 20.0 minutes) and runoff coefficient 'C' of 0.7 to add approximately 74 L/s to catchment EX203 under the 2-year design storm.

The existing 200 mm diameter combined sewer north of SAMH 15 was calculated to have a capacity of 46.3 L/s and an estimated design flow of 75.35 L/s. Therefore, in a conservative scenario, the 200 mm diameter combined sewer north of SAMH 15 is assumed not to meet the existing capacity requirements. To compensate for the non-compliance, it is assumed that the excess flows under the 2-year design storm from Catchment EX203 will flow overland from the catch basins north of SAMH 15 to the catch basins within EX202 (south of SAMH15). Therefore, the difference between the design flow of 75.35 L/s and the assumed pipe capacity of 46.3 L/s were added to Catchment EX202 to ensure sufficient capacity has been provided in the combined sewer. The section of pipes between SAMH 9, SAMH 2, and SAMH 15 has been upsized to 375mm at @ 0.15% and 450mm @ 0.16% respectively to accommodate these flows. Under existing conditions, the excess flows that are not currently captured (in the conservative scenario) continue to flow overland to the south and ultimately outlet at the Marr Drain crossing of the Carlow Road R.O.W.

Based on the above assumption, adequate capacity has been provided in the combined sewer upgrade in the Carlow Road R.O.W. during the 2-year storm event and the overall design. Please see design sheet #8 in the drawings.

3. WATER SERVICING

According to scan showing the existing watermain information in the Lake Line R.O.W., provided in Appendix B, there is currently a 200mm diameter watermain in the Lake Line R.O.W., available to service the subject site. A 200 mm watermain is proposed to be connected to the existing 200 mm diameter watermain in the Lake Line R.O.W. The subject site is proposed to be serviced by a 150 mm diameter watermain connected to the proposed 200 mm diameter watermain connected to the 200 mm watermain in the Lake Line R.O.W.

The hydraulic grade line (HGL) for the watermain connection was calculated by adding the residual pressure (for each demand scenario) to the estimated elevation of watermain connection at Lake Line R.O.W., based on hydrant flow test done on January 18, 2021, and water demand calculations provided in Appendix B. These conditions were applied to review the available water supply in the analysis.

Hydraulic demand calculations were considered with the normal water usage of residential occupancy as per the municipality's IDGCS Section 5 and MECP DGDWS Section 3. The design parameters are presented in the Section 5.1 below. Water servicing for the site is shown on Sheet 9, provided separately.

3.1. Design Criteria

The design parameters outlined below are based on the Municipality's water design standards found in Section 5 of the IDGCS, dated June 2004, The City of St Thomas DGM, and Section 3 of the MECP DGDWS:

- An average demand of 400 L/person per day
- Low & medium density residential of 3.5 persons per unit
- Minimum water pressures to be maintained in the distribution system of:
  - Minimum of 140 kPa (20 psi) at maximum day demand flow plus fire flow
  - Minimum of 275 kPa (40 psi) at maximum hourly demand flow
  - Minimum of 275 kPa (40 psi) at average day demand flow
- Maximum residual pressure in the distribution system should not exceed 700 kPa (100 psi)
- Peaking factors of 3.6 for maximum day and 5.4 for maximum hour
- Minimum 150mm diameter watermain size for systems designed to provide fire protection according to the City of St Thomas DGM.

- 1.5 m/s and 3 m/s maximum velocity during maximum hour domestic flow and fire flow conditions respectively (based on MECP DGDWS)
- Hazen Williams C factor of 100 for 150 mm and 110 for 200 mm diameter watermain according to section 5.4 of IDGCS

3.2. Design Software

The modeling software, EPANET V2, was used to calculate the hydraulic loads and aging of the system. In this case, the network consists of pipes, nodes (pipe junctions), and sources. EPANET calculates the flow rate and velocity of water in each pipe and the pressure at each node based on the total head at the connection points (source) and design demands assigned to select nodes. The network map with nodes and links (Water Distribution System Layout) for the average day and maximum hour is provided in Appendix C. The network map with nodes and links (Water Distribution System Layout) for the maximum day plus fire flow is provided in Appendix D.

3.3. Design Assumptions

The EPANET watermain maximum day plus fire flow conditions model was designed with a conservative approach analyzing only the most conservative scenario hydrant (Node H4) located furthest from the watermain source (Node 1). The assumption to this design was that the point furthest from the sources will produce the lowest pressure in the watermain during maximum day plus fire demand scenario. If the most conservative hydrant meets the pressure conditions, then the other proposed hydrants that are located closer to the source (Node 1) will have sufficient pressure.

3.4. Domestic Water Demand

Hydraulic demand calculations were considered with the normal water usage of residential occupancy as per municipality's IDGCS, Section 5, presented in the section 5.1 above. An average daily water demand for selected nodes was determined based on the number of units for each node, the low & medium density residential (3.5 persons per unit), and the average day domestic (residential) demand per capita (400 L/person per day). Maximum day and maximum hour flows were determined by multiplying the average daily flow by the established peaking factors. The water demand calculations are provided in Appendix B.

3.5. Fire Flow Demand

Hydrant maximum separation of 150m in accordance with the municipality's IDGCS was used in the design. The proposed site servicing plan attached separately shows that the seven (7) hydrants proposed for the site are sufficient.

The fire-fighting demand was calculated in accordance with the Water Supply for Public Fire Protection (Fire Underwriters Survey). Refer to fire flow calculation in Appendix B for detailed information. The design parameters of the conceptual building area of 300 m^2 per dwelling (single family dwelling), wood-frame construction, and combustible fire hazard contents. Fire flow + max day flow rate of about 4,626 L/min was calculated. The calculations must be verified after flow tests to confirm available firefighting flow.

3.6. Project Design Results

The detailed EPANET results tables for average day, maximum hour, and maximum day plus fire flow demand scenarios are presented in Appendices C and D, respectively. The EPANET V2 modeling software output results (Appendices C and D) show that the proposed water distribution system is in compliance with the municipality's IDGCS requirements for water supply, pressure in the system and MECP DGDWS requirements for velocities in the system.

The average day demand flow results presented in Appendix C show that the proposed water distribution system has a maximum pressure of 70.55 m (100.3 psi or 691.7 kPa) at Node J11, which is marginally less than 700 kPa as specified by MECP DGDWS. To address quality concerns, current standards dictate that water shall not remain unused in the watermain for more than 72 hours under average day demand. The results show that the maximum age of water in the watermain is 24.09 hours at Node J7, which is less than the 72 hours requirement.

The maximum hourly flow results presented in Appendix C show that the minimum pressure in the system is 65.48 m (93.1 psi or 642.0 kPa) at Node HYD1, which is greater than 275 kPa (40 psi) required by the Municipality's IDGCS. The maximum velocity during the maximum hour demand is 0.27 m/s at Link 1, which is less than the maximum velocity under maximum hourly flow scenario of 1.5 m/s required by MECP DGDWS.

The maximum day flow plus fire flow demand were calculated for the most conservative hydrant (Node HYD4). Result presented in Appendix D shows that the lowest pressure in the system is 25.7 m or 251.91 kPa (36.5 psi) at Node HYD4, which is higher than minimum required pressure of 140 kPa (20 psi) during maximum day demand plus fire flow as per the IDGCS. The maximum velocity in the system during the maximum day plus fire-flow demand is 2.45 m/s at Link 1, which is less than the maximum velocity of 3 m/s required by MECP DGDWS.

The maximum day plus fire flow scenario was modelled to determine the maximum flow that could be drawn from most conservative scenario hydrant at minimum of 20 psi throughout the proposed development. Result presented in Appendix D shows the most conservative scenario hydrant (Node HYD4) could provide a flow of 5,147.4 L/min (1,359.8 GPM) at 20psi. The above confirms that the other hydrants in the site will have a flow greater than 5,147.4 L/min (1,359.8 GPM) at 20psi. A proposed fire hydrant colour class table per NFPA 291 has been included in Table 1 for consideration. As these results are computed through modelling (EPANET V2), flow tests should be completed once the lands have been developed to confirm the hydrant colour coding that should be applied.

Hydrant	Flowrate @ 20 psi	Class	Colour
Hydrant Node HYD4	5,147.4 L/min (1,359.8 GPM)	Class A*	Green*

***** To be confirmed by Ontario Clean Water Agency after buildout of the subdivision

Table 1: Hydrant Colour Class Table

4. STORM SERVICING AND STORMWATER MANAGEMENT

4.1. Storm Servicing

Under pre-development conditions, there are no existing storm sewers on site. According to the Marr Drain plan and details by Spriet Associates, dated May 23, 1991, provided in Appendix E, the Marr Drain passes through the subject site and advances southeast of the subject site towards the open-channel portion of the Marr Drain. Under post-development conditions, a storm sewer system will be installed to collect and convey minor runoff (2-year storm) from the subject site to a proposed stormwater management (SWM) dry pond

located southeast of the subject site. Major flows will be conveyed to the proposed SWM pond by site grading. The portion of the Marr Drain located within the site will be removed and relocated to tie into the subject site's storm sewer. The proposed SWM dry pond will discharge flows to the downstream open channel portion of the Marr Drain.

The site was divided into twenty-two storm catchments areas (A201 to A220, U201, and U202). The proposed site collects flows from external areas and discharges to the open channel portion of the Marr Drain located southeast of the site. Therefore, external areas (Ext201 to Ext207) will discharge minor and major storm flows through the site's storm sewer system and overland flow route, see Storm Catchment Areas Plan Sheet 5 provided separately. The storm sewer design sheet (Sheets 6A & 6B provided separately) shows that the proposed storm sewers at the proposed sizes and slopes have sufficient capacity to convey the proposed sites and external lands' minor flows (2-year storm) to the proposed SWM dry pond.

The major flows from the subject site and external lands will be safely conveyed by site grading to the overland flow routes (Blocks 91, 92 and 93) and discharge to the SWM dry pond. See Subdivision Grading Plan Sheets 10A – 10C provided separately. For the storm servicing drawings and additional information, refer to the Site Master Servicing Plan (Sheets 4A & 4B), Storm Sewer Catchment Area Plan & Design Sheet (Sheets 5, 6A & 6B), and Site Grading Plan (Sheets 10A-10C), provided separately.

4.2. Stormwater Management

4.2.1. Rainfall Data

SBM compared the Chicago distribution derived from the IDF values found in the City of St Thomas Design Standard to the City of London Chicago distribution. Comparison showed that the Chicago distribution derived from the IDF values found in the City of St Thomas Design Standard, produced half the rainfall as City of London Chicago distribution, which does not seem appropriate due to the proximity of the 2 cities.

The Chicago distribution on Table 2 was derived from the Intensity-Duration-Frequency (IDF) Parameters obtained from Environment and Climate Change Canada Rain Gauge Information dated 27th of February 2019 for The St Thomas WPCP ID ON_6137362 (Table 2b) from 1926 - 2007 provided in Appendix E, which shows similar rainfall to the City of London.

The Intensity from Table 2b of the above rain gauge information was inputted in Miduss IDF Curve Fit tools (as shown in MIDUSS IDF to Chicago Conversion) to produce the Chicago Distribution parameters. The St Thomas WPCP Chicago Rainfall Distribution Parameters are shown in Table 2 below:

Return Period (Years)	Parameters		
	a	b	c
2	737.970	7.382	0.8035
5	1009.820	7.472	0.8055
10	1178.220	7.382	0.8049
25	1398.350	7.382	0.8048
50	1497.170	6.876	0.7978
100	1634.380	6.798	0.7954

Table 2: St. Thomas WPCP Chicago Distribution from MIDUSS IDF Curve Fit Tools

Hyetographs for the 2 to 100-year rainfall events were created using the Ministry of Transportation of Ontario Drainage Management Manual (MTO DMM) intensity equations (Appendix E). The time and intensity values obtained from the hyetographs were inputted into the stormwater management model as a time series.

4.2.2. PCSWMM Pre-Development Modelling

Personal Computer Storm Water Management Model (PCSWMM) software was used for stormwater quantity modelling. Under pre-development conditions, the site was shown as three (3) catchment areas. External area Ext101 was also modelled to discharge flows to the open channel portion of the Marr Drain. These areas are shown on Sheets 3A & 3B of the engineering drawings provided separately. The sub-catchment parameters are shown in the pre-development sub-catchment parameter table (Table 1) of the SWM calculation provided in Appendix E.

From the sub-catchment parameter table, the flow length is the approximate distance from the highest to the lowest point of a sub-catchment. The percent impervious was obtained by converting the runoff coefficient value for each sub-catchment. The manning's n coefficient and depression storage values were obtained from the Storm Water Management Model User's Manual Version 5.1 (SWMMUM), and the CN numbers were obtained from A.4 of Storm Water Management Model User's Manual Version 5.1 with an average hydrologic soil group of C for the entire site as confirmed by EXP geotechnical engineers via email dated July 5, 2021. The sub-catchment parameters were inputted into the PCSWMM pre-development condition model.

The existing condition model contains 1 outfall, matching the existing condition runoff outlet resulting from the existing site topography. The peak runoff from the outfall for each rainfall event is tabulated in Table 3 of the SWM calculations provided in Appendix E.

The PCSWMM pre-development model layout provided in Appendix F shows the sub-catchment and the associated outlet and outfall. The modelling results for each rainfall event are also provided in Appendix F.

4.2.3. PCSWMM Post-Development Modelling

PCSWMM modelling software was used to quantify post-development runoff into the SWM dry pond and orifice flow control was used to discharge to the open channel portion of the Marr Drain located southeast of the site to match pre-development flow rates. This model was used to verify that post-development flow rates and volumes did not exceed the allowable values for all outlets, and to calculate the required SWM dry pond storage and restricted flow rates. The post-development model was produced according to the Storm Catchment Area Plan Sheet 5 by SBM (provided separately), which were also used for the catchment area identification numbers. As previously mentioned, the stormwater management quantity objective for the site is to attenuate the post-development flows to the pre-development levels. Catchment parameters have been provided in Table 2 of the SWM calculation provided in Appendix E.

The PCSWMM post-development model includes catchments (defined catchment areas), junctions (structures), links (culverts), and storage nodes (ponding areas), matching parameters shown in the Storm Sewer Catchment Area Plan Sheet 5, and the Subdivision Grading Plan, Sheets 10A-10C. The post-development modelling layout provided in Appendix G shows each sub-catchment and the associated outlet and outfall. The post-development modelling results for each rainfall event are also provided in Appendix G.

"Minor and major" storm event flows will be directed to different storage areas and discharge points on the site by various means. Storm water runoff from the front of residential lots will be directed to the R.O.W and

flows within the asphalt surface in the R.O.W. will be captured by catchbasins and outletted to roadside ditches. Residential lot flows will typically be directed to the rear yard, and will either be stored in a spreader swale, or directed to another storage area via weir. Flows collected in spreader swale will pond until they reach the crest of the spreader swale and will overflow into their respective outlet. Each storage is linked to the rear yard catchbasin, catchbasin, or junction by a 0.6x0.6 orifice which will not affect the model since the downstream conduit is smaller in size. The minor (2-Year Storm) and major (100-Year Storm) flows will be discharged through the orifice located within the SWM dry pond outlet structure. The orifice has been designed to restrict the 2 to 100-year post-development flows to the pre-development levels. A weir has been provided to outlet excess runoff during major storm event (greater than the 100-year storm). A minimum 0.3m freeboard has been provided between the weir elevation and the lowest elevation between the SWM pond and the abutting Lots. As shown in the Table 3 of the SWM Calculations, sufficient storage is provided in the proposed SWM dry pond to meet the SWM objectives for this site. As shown on the engineering drawings provided separately, road accesses to the pond are proposed for cleaning and maintenance of the pond.

For Branch A, the minor flows will be carried out through the proposed pipe going from MDCB 4 to MDDICBMH 5. It will not be able to convey the minor flows sufficiently, it will get some of the flows out, but it will mostly just be a positive outlet for full draw down of the ponded area after the storm rather than a properly designed typical gravity pipe. Once MDDICBMH 5 starts to back up, the major flows will be conveyed through the 1200mm diameter pipe going from MDDICBMH 5 to MDMH 6.

The proposed dry SWM pond has a maximum depth (from bottom of pond to the weir) of 1.89m. The volumetric storage capacity of the dry SWM pond is approximately 4,208.99 m^3 as shown in stage-storage table provided in Appendix E. The storm flows discharged from the dry SWM pond will be controlled by a 430mm orifice, installed at an elevation of 176.97m, which is proposed to be installed in the dry SWM pond outlet structure.

4.3. Quality Controls

It is proposed to install an Oil and Grit Separator (OGS) Stormceptor EFO10 upstream of the SWM dry pond to provide at least 70% TSS removal for the subject site in accordance with Table 3.2 of the MECP SWMP&DM for a “normal” protection level. See Appendix E for all details and calculations for the EFO10 Stormwater Treatment Unit. OGS inspection and maintenance schedule is recommended to be maintained by the Contractor during construction and by the owner after construction as it is the owner’s responsibility to maintain these devices in accordance with current standards and policies.

5. SEDIMENT AND EROSION CONTROL MEASURES

Complementary to the site servicing and grading design for the site, sediment and erosion control details and notes have been included with the Site Engineering design. This should alleviate the off-site migration of sediments by incorporation of various best management practices and control measures. Such controls may include but are not limited to silt fencing, silt sacks for inlet grate protection (catch basins, and catch basin maintenance holes), tree preservation fencing and erosion control blanket treatment of significant fill/cut slopes. Suitable precautions should be undertaken in maintaining and monitoring these controls during the construction phase. The control measures to be implemented on site should include:

- Protect all exposed surfaces and control all runoff during construction;
- Sediment and erosion control measures to be removed at completion of project (following completion of base asphalt and sod);

- Maintain erosion control measures during construction;
- All collected sediment to be disposed of at an approved location;
- Minimize area disturbed during construction;
- All dewatering to be disposed of in an approved sedimentation basin;
- Protect all catch basins, maintenance holes and pipe ends from sediment intrusion with geotextile fabric (Terrafix 270R), silt sacks, or approved equal;
- Keep all sumps clean during construction;
- Prevent wind-blown dust;
- Straw bales to be used in localized areas as directed by the engineer during construction for works which are in or adjacent to flood lines, fill lines and hazardous slopes;
- Straw bales to be terminated by rounding bales to contain and filter runoff;
- Contractor to supply sediment erosion control measures and emergency plan (including emergency contacts) in case of SEC measures failure, extreme weather conditions, or spills. Any spills are to be reported to the MECP at 1-866-6638477 toll free;
- Sediment and Erosion Control measures shall be repaired without delay by the owner's contractor as instructed by the contract administrator/engineer at no expense to the owner;
- On-site sediment and erosion control measures are to be reviewed and modified to meet the changing site;
- Sediment and Erosion Control measures are to be inspected weekly or following significant rainfall events;
- Obtain approval from the governing Conservation Authority prior to construction for works which are in, or adjacent to flood lines, fill lines and hazardous slopes; and
- All of the above notes and any sediment and erosion control measures are at the minimum to be in accordance with the ministry of natural resources guidelines on sediment and erosion control for urban construction sites.
- Sediment and erosion control measures to be removed at completion of project (following completion of base asphalt and sod).

The above noted items have also been placed on the Engineering Drawing Sheets 3A & 3B under the Sediment & Erosion Control Measures for reference on-site.

6. LIMITATIONS

This report was prepared by SBM for Strathroy Turf farms Inc. and the Corporation of the Municipality of Central Elgin. Use of this report by any third party, or any reliance upon its findings, is solely the responsibility of that party. SBM accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions undertaken as a result of this report. Third party use of this report, without the express written consent of the Consultant, denies any claims, whether in contract, tort, and/or any other cause of action in law, against the Consultant.

All findings and conclusions presented in this report are based on information as it appeared during the period of the investigation. This report is not intended to be exhaustive in scope, or to imply a risk-free facility. It should be recognized that the passage of time may alter the opinions, conclusions, and recommendations provided herein.

The design was limited to the documents referenced above and on SBM's drawings, provided separately. SBM accepts no responsibility for the accuracy of the information provided by others. All designs and recommendations presented in this report are based on the information available at the time of the review.

7. CLOSURE

We trust this report meets your satisfaction. Should you have any questions or require further information, please do not hesitate to contact us.

Respectfully submitted,

Strik, Baldinelli, Moniz Ltd.

Planning • Civil • Structural • Mechanical • Electrical

Kevin Moniz, P.Eng
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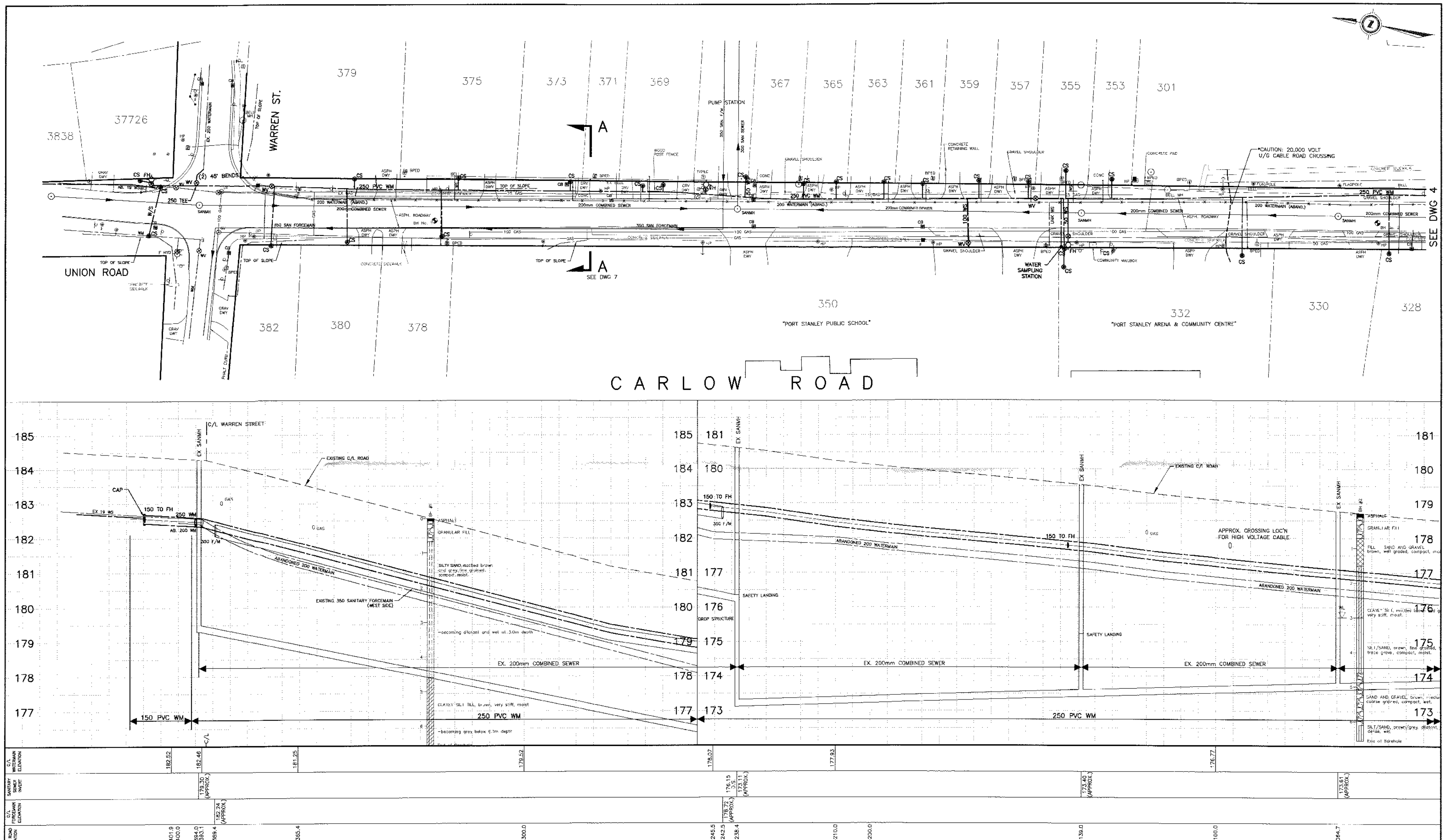
Rawan Safieddine, M.Eng
Civil EIT I

Nelson Guiot, P.Eng.
Associate II, Civil Division Manager

APPENDIX A

Carlow Road Watermain Replacement As-Constructed Drawing – Phase 1 Drawing



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	PAM
DRAWN BY	SGS
CHECKED	DCC
APPROVED	PAM
DATE	JUL/10

No.	REVISIONS	DATE	CONSULTANT
1	SUBMITTED FOR REVIEW	14/SEP/10	AECOM
2	ISSUED FOR TENDER	21/SEP/10	AECOM
3	ISSUED FOR TENDER	16/FEB/11	AECOM
4	AS CONSTRUCTED	FEB/2012	AECOM

AECOM
London, Ontario 519.673.0510

ENGINEER'S STAMP

The Corporation of the Municipality of Central Elgin

SCALE
HORZ 1:500
VERT 1:50

TITLE
CARLOW ROAD WATERMAIN REPLACEMENT – PHASE 1
MUNICIPALITY OF CENTRAL ELGIN

C A R L O W   R O A D

STA 2+050 TO 2+430

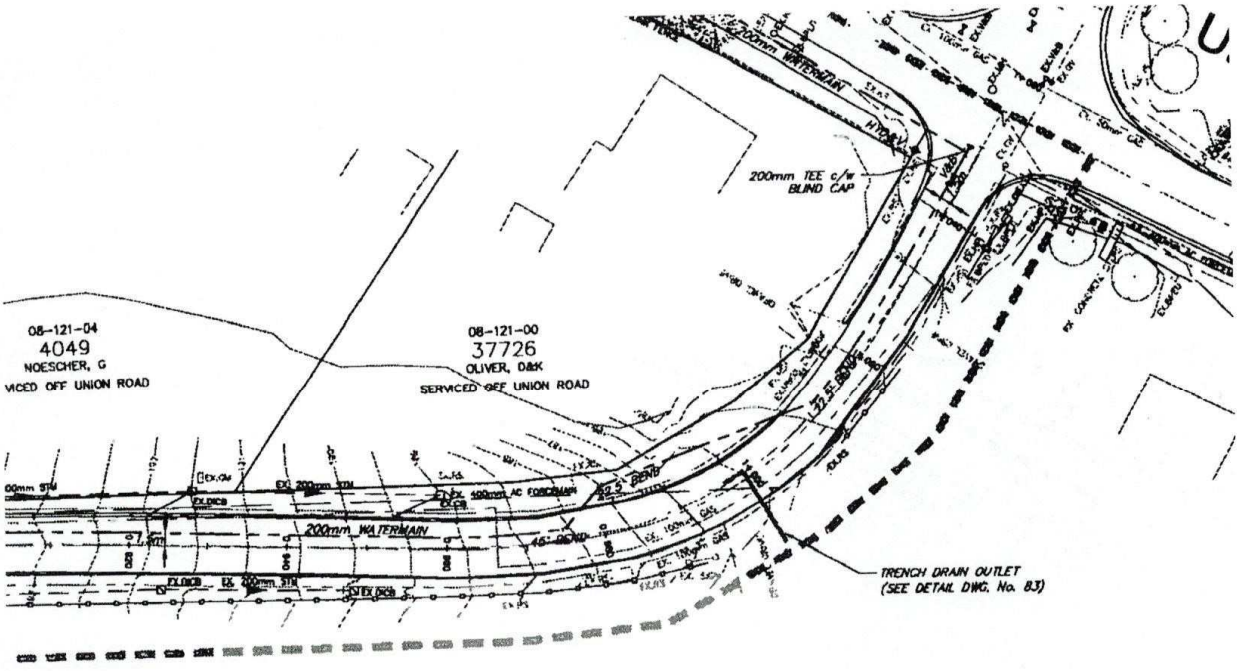
PROJECT No. 60157539

SHEET No. 3

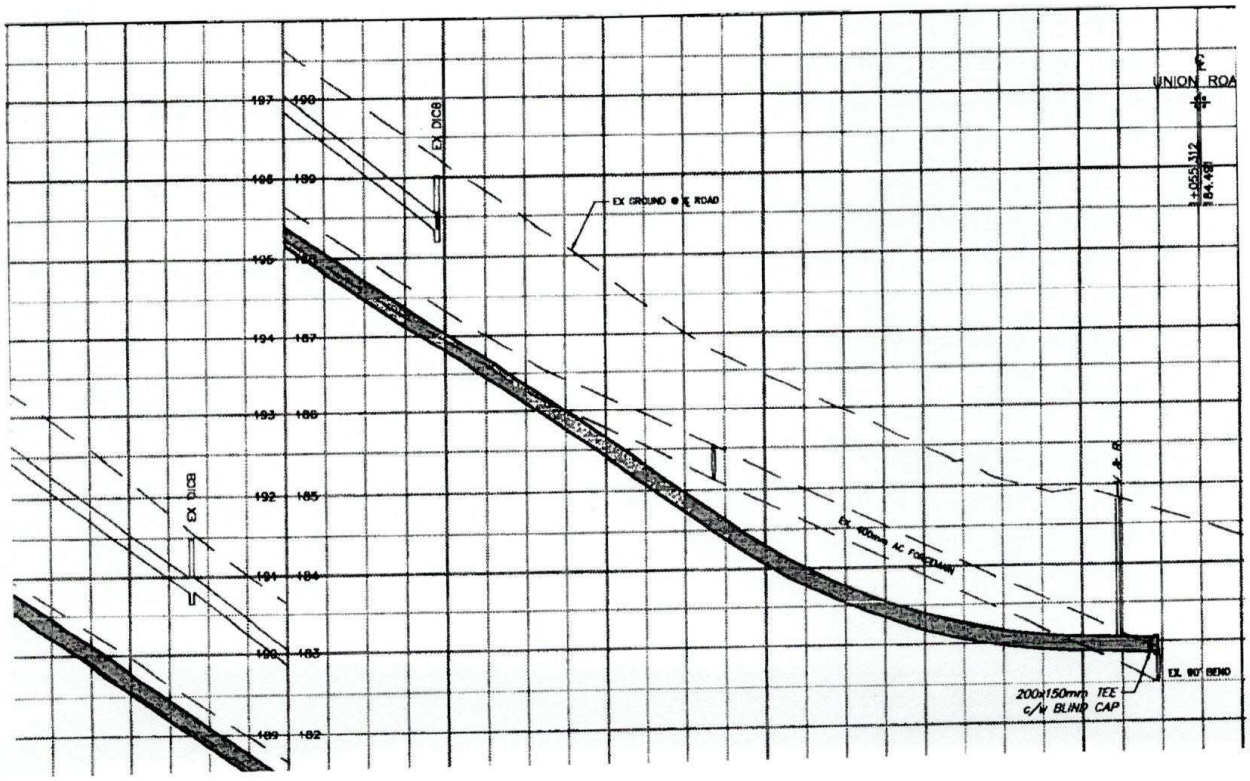
PLAN FILE No.

APPENDIX B

Scan Showing Watermain Information in The Lake Line R.O.W
Hydrant Flow Test
Water Demand Calculations (Average Day, Max. Hour and Max. Day plus Fire flow)
Average Day and Max. Hour HGL Calculations
Fire Flow Calculation


08-121-04
4049
NOESCHER, G
VICED OFF UNION ROAD
08-121-00
37726
OLIVER, D&K
SERVICED OFF UNION ROAD
200mm TEE c/w BLIND CAP
200mm WATERMAIN
TRENCH DRAIN OUTLET
(SEE DETAIL DWG. No. 83)

LAKE LINE (E)


UNION ROA
EX DICB
EX GROUND @ ℄ ROAD
EX 400mm AC FORCEMAIN
EX 90° BEND
200x150mm TEE c/w BLIND CAP

Central Elgin (Port Stanley) Hydrant Flow Test Report

Date: 18-Jan-21 Time: 11;12 AM Operator: Lucas/Hodder

Test Hydrant Information:

Number: 1 Elevation: n/a

N.F.P.A. Colour Code: BLUE Location: 3830 Union Road

STATIC PRESSURE: 90 psi Hyd# 1

RESIDUAL PRESSURE: 76 psi

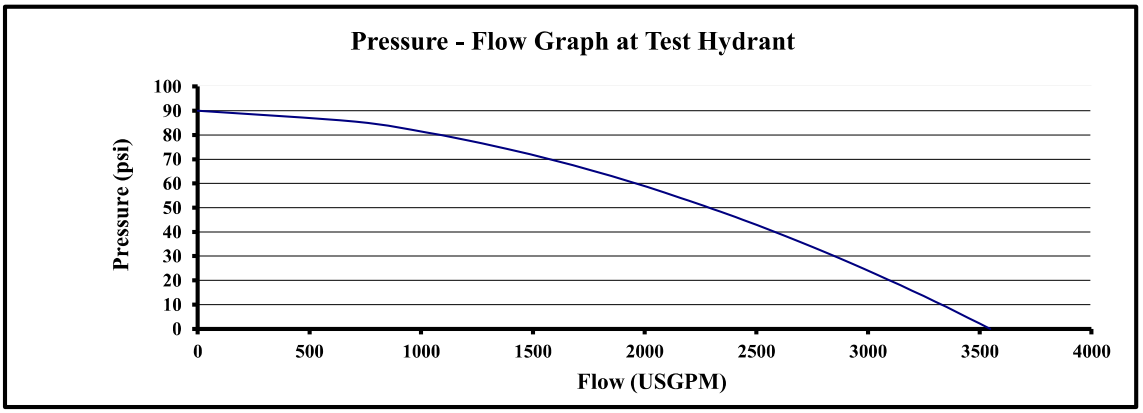
HPR S/N: 1199

Flow Hydrants Information:

Hydrant No.	HPR No.	Outlet Dia. (in.)	Coefficient (~0.9)	Pitot Gauge Reading (psi)	Flow (USGPM)
#1	n/a	2.5	0.9	60	1298
			Total Flow (USGPM)		1298

Available Flow At Test Hydrant at 20 psi 3096 USGPM 2559 IGPM

Available Flow At Test Hydrant at 10 psi 3328 USGPM 2750 IGPM



Comments/Discrepencies/Diagram:

Fire Hydrant is located at northeast corner of Carlow Road & Warren Street

*NOTE: Graph updated by SBM to show Flow on X axis and Pressure on Y axis.

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(519) 659-1144

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London, ON N5X 4E8
P: 519-471-6667

KITCHENER LOCATION
1415 Huron Rd., Unit 225
Kitchener, ON N2R 0L3
P: 519-725-8093

www.sbmltd.ca

sbm@sbmltd.ca

DOMESTIC WATER DEMAND CALCULATION

	For data entry
	Calculated, not for data entry

DATE:	July 14, 2022
JOB No.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

Values as per MECP Design Guidelines for Drinking Water System (DGDWS) and Central Elgin Infrastructure Design Guidelines and Construction Standards (IDGCS)

Avg. Residential Day Demand = 400 L/D/cap =	0.00462963	L/s/cap	As per Chapter 5.2.2 of IDGCS
Max. Day Peaking Factor =	3.6		As per Table 3-3 of MECP DGDWS
Max. Hour Peaking Factor =	5.4		As per Table 3-3 of MECP DGDWS
Residential Population Density =	3.5	ppl/unit	As per Chapter 4.2.1 A of IDGCS

Note: Peaking Factors from MECP DGDWS was used as per Section 5.2.2 of IDGCS

Domestic Water Demand

Node	Units	Population	Avg. Day (L/s)	Max. Hour (L/s)	Max. Day (L/s)
1 - Source 1	0	0	0.000	0.000	0.000
2 - Units 44-51	8	28	0.130	0.700	0.467
3 - Units 1-9 & 52-59	17	60	0.275	1.488	0.992
4 - Units 10-17 & 60-63	12	42	0.194	1.050	0.700
5 - Unit 18-23 & 64-68	11	39	0.178	0.963	0.642
6 - Units 24-28 & 69-70	7	25	0.113	0.613	0.408
7 - Units 29-34 & 81	10	35	0.162	0.875	0.583
8 - Units 35-43	9	32	0.146	0.788	0.525
9 - Units 76-79 (Semi-Detached) & 80	13	46	0.211	1.138	0.758
10 - Units 71-75 (Semi-Detached)	10	35	0.162	0.875	0.583
TOTAL:	97	340	1.572	8.488	5.658

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P: 519-725-8093

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Average Day and Max Hour HGL

	For data entry
	Calculated, not for data entry

DATE:	July 14, 2022
JOB N0.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

Average Day Demand (L/s) = 1.57
Average Day Demand (L/min) = 94.31

Max Hour Demand (L/s) = 8.49
Max Hour Demand (L/min) = 509.25

Average Day Pressures

	90.00	*psi (620.53 kPa) =	**0**	*L/min (0 USGPM)
Provided Supply Flow Rate @	**20.00**	*psi (137.9 kPa) =	**11719.6**	*L/min (3096 USGPM)
Using linear interpolation, residual pressure at required flow=	**89.44**	psi (616.64 kPa) =	**94**	L/min (25 USGPM)

Pressure @ Average Day Demand = 89.44 psi
Pressure @ Average Day Demand = 62.90 m head of water

Approximate Watermain Elevation @ Node 1 (Lake Line) Connection: 186.39 m

Approximate HGL Elevation @ Node 1 (Lake Line) Connection: 249.29 m

Max Hour Pressures

	90.00	*psi (620.53 kPa) =	**0**	*L/min (0 USGPM)
Provided Supply Flow Rate @	**20.00**	*psi (137.9 kPa) =	**11720**	*L/min (3096 USGPM)
Using linear interpolation, residual pressure at required flow=	**86.96**	psi (599.56 kPa) =	**509**	L/min (135 USGPM)

Pressure @ Max Hour Demand = 86.96 psi
Pressure @ Max Hour Demand = 61.15 m head of water

Approximate Watermain Elevation @ Node 1 (Lake Line) Connection: 186.39 m

Approximate HGL Elevation @ Node 1 (Lake Line) Connection: 247.54 m

*Refer to the Provided Hydrant Flow Tests by Hetek Solutions Inc. Dated January 18, 2021

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Kitchener, ON N2R 0L3
P: 519-725-8093

www.sbmltd.ca

sbm@sbmltd.ca

Water Supply for Public Fire Protection (Fire Underwriters Survey)

	For data entry
	Calculated, not for data entry

DATE:	July 14, 2022
JOB N0.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

$$F = 220 \times C \times \sqrt{A}$$

Type of Construction:	**Wood-Frame**		**1.5**
Fire Hazard of Contents:	**Combustible**		**1.00**
Total Floor Area, m^2 :			**300.00**
Sprinklered:	**No**		**1.0**
Separation, Side 1:	**0 to 3m**	25%	
Separation, Side 2:	**0 to 3m**	25%	
Separation, Side 3:	**20.1 to 30m**	15%	
Separation, Side 4:	**20.1 to 30m**	15%	
Sum of Separation Coefficients (Shall Not Exceed 75%:)			**75%**

F, L/min (Shall not exceed 45,000 L/min or be less than 2,000 L/min)=	**4287**	**L/min**
Maximum Day Demand=	**339**	**L/min**
Required Supply Flow Rate, L/min =	4626	

Provided Supply Flow Rate @	**90.00**	psi* =	**0**	L/min*
	20.00	psi* =	**11720.0**	L/min*
Using linear interpolation, residual pressure at hydrant =	**59.26**	@	**5147**	L/min

Pressure @ Max Hour Demand = 59.26 psi
Pressure @ Max Hour Demand = 41.67 m head of water

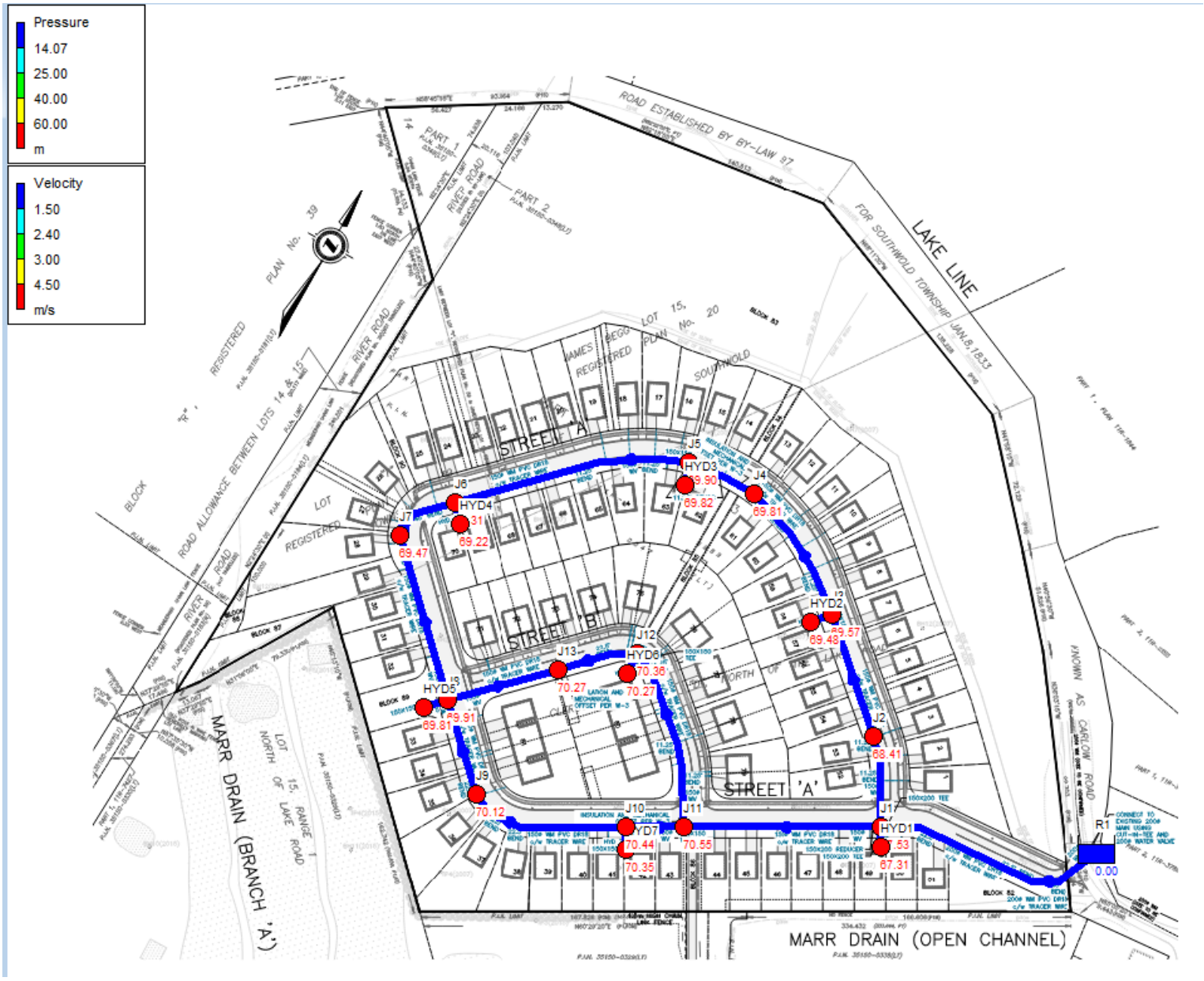
Approximate Watermain Elevation @ Node 1 (Lake Line) Connection: 186.39

Approximate HGL Elevation @ Node 1 (Lake Line) Connection: 228.06

*Refer to the Provided Hydrant Flow Tests by Hetek Solution Dated January 18, 2021

APPENDIX C

EPANET V2:
Average Day Demand Layout
Average Day Demand Results
Max Hour Demand Layout
Max Hour Demand Results


Pressure
14.07
25.00
40.00
60.00
m
Velocity
1.50
2.40
3.00
4.50
m/s
LAKE LINE
ROAD ESTABLISHED BY BY-LAW 97
FOR SOUTHWOLD TOWNSHIP JAN.6,1833
STREET 'A'
STREET 'B'
STREET 'A'
MARR DRAIN (BRANCH 'A')
MARR DRAIN (OPEN CHANNEL)
RIVER ROAD
ROAD ALLOWANCE BETWEEN LOTS 14 & 15
LOT 15, PLAN No. 20
J1
J2
J4
J5
J6
J7
J9
J10
J11
J12
J13
J17
HYD1
HYD2
HYD3
HYD4
HYD5
HYD6
HYD7
R1
68.41
69.90
69.82
69.81
69.47
69.31
69.22
69.57
69.48
70.36
70.27
70.27
69.91
69.81
70.12
70.44
70.55
70.35
67.53
67.31
0.00

```
******************************************************************************
*                            E P A N E T                                     *
*                     Hydraulic and Water Quality                            *
*                     Analysis for Pipe Networks                             *
*                           Version 2.2                                      *
******************************************************************************
```

Input File: 2022-07-13 - Average Day.net

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	R1	J1	118.91	200
2	J1	HYD1	5	150
3	J1	J11	101.69	150
4	J11	J10	30.24	150
5	J10	HYD7	5	150
6	J10	J9	85.32	150
7	J9	J8	49.72	150
8	J8	HYD5	5	150
9	J8	J13	58.13	150
10	J13	J12	45.02	150
11	J12	HYD6	5	150
12	J12	J11	89.84	150
13	J7	J8	88.82	150
14	J7	J6	33.57	150
15	J6	HYD4	5	100
16	J6	J5	125.21	150
17	J5	HYD3	5	150
18	J5	J4	26.66	150
19	J4	J3	82.76	150
20	J3	HYD2	5	150
21	J3	J2	67.91	150
22	J2	J1	45.91	150

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
J1	0.13	249.29	67.53	0.66
J3	0.00	249.28	69.57	1.69
HYD2	0.00	249.28	69.48	72.00
J11	0.00	249.28	70.55	1.37
J8	0.16	249.28	69.91	4.79

J7	0.00	249.28	69.47	24.09
J6	0.11	249.28	69.31	14.16
HYD4	0.00	249.28	69.22	72.00
HYD7	0.00	249.28	70.35	72.00

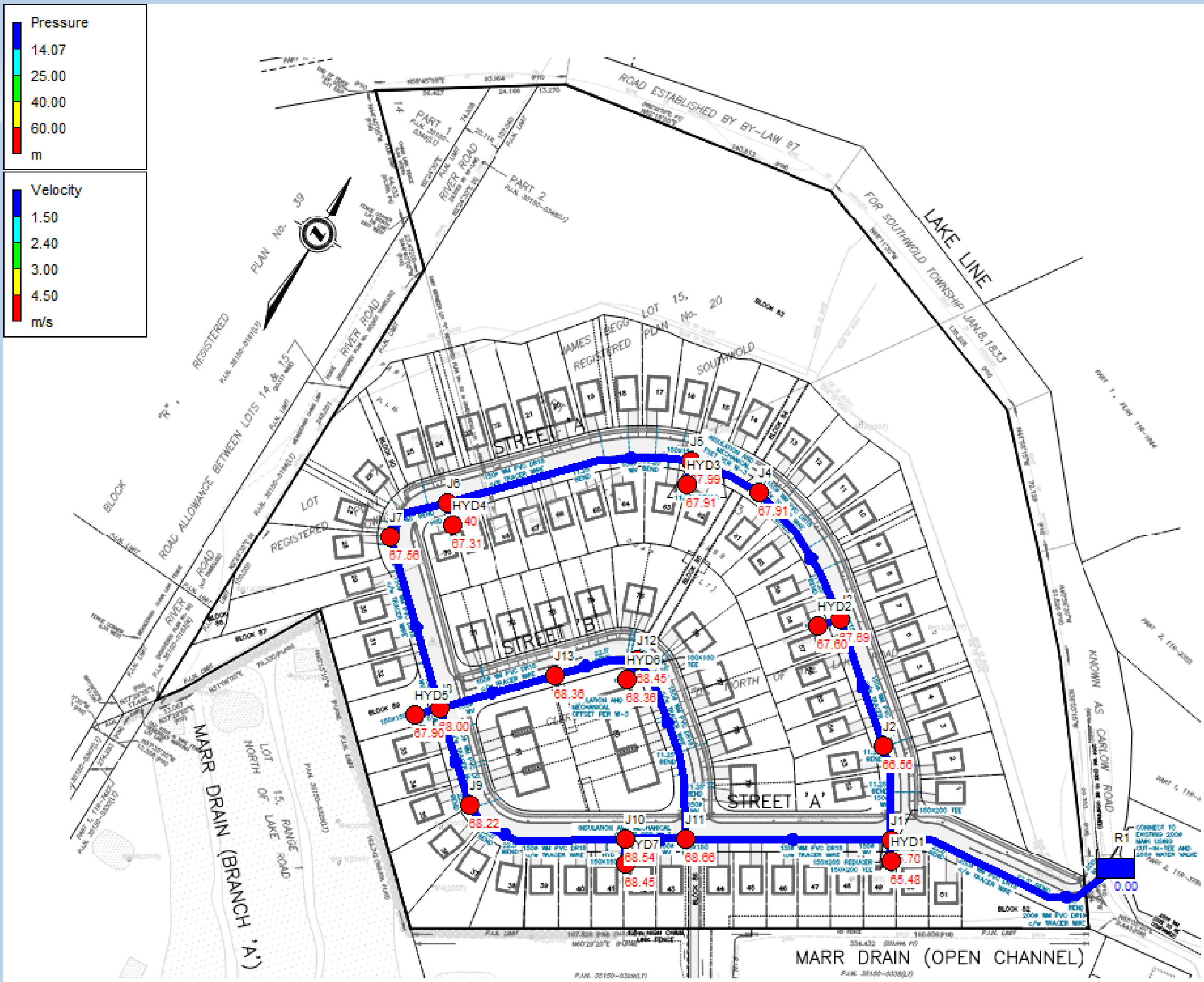
Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality hours	
J10	0.15	249.28	70.44	1.78	
J9	0.00	249.28	70.12	3.68	
HYD5	0.00	249.28	69.81	72.00	
J13	0.16	249.28	70.27	6.26	
J12	0.21	249.28	70.36	2.68	
HYD6	0.00	249.28	70.27	72.00	
J2	0.28	249.28	68.41	0.97	
J4	0.19	249.28	69.81	2.57	
J5	0.18	249.28	69.90	3.05	
HYD3	0.00	249.28	69.82	72.00	
HYD1	0.00	249.29	67.31	72.00	
R1	-1.57	249.29	0.00	0.00	Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	1.57	0.05	0.03	Open
2	0.00	0.00	0.00	Open
3	0.70	0.04	0.03	Open
4	0.37	0.02	0.01	Open
5	0.00	0.00	0.00	Open
6	0.22	0.01	0.00	Open
7	0.22	0.01	0.00	Open
8	0.00	0.00	0.00	Open
9	0.04	0.00	0.00	Open
10	-0.13	0.01	0.00	Open
11	0.00	0.00	0.00	Open
12	-0.34	0.02	0.01	Open
13	-0.02	0.00	0.00	Open
14	0.02	0.00	0.00	Open
15	0.00	0.00	0.00	Open
16	-0.09	0.01	0.00	Open
17	0.00	0.00	0.00	Open
18	-0.27	0.02	0.00	Open
19	-0.46	0.03	0.01	Open
20	0.00	0.00	0.00	Open

21	-0.46	0.03	0.01	Open
22	-0.74	0.04	0.03	Open



Pressure
14.07
25.00
40.00
60.00
m
Velocity
1.50
2.40
3.00
4.50
m/s
ROAD ESTABLISHED BY BY-LAW 87
LAKE LINE
FOR SOUTHWOLD TOWNSHIP
STREET 'A'
STREET 'B'
STREET 'A'
J1
J2
J4
J5
J6
J7
J9
J10
J11
J12
J13
HYD1
HYD2
HYD3
HYD4
HYD5
HYD6
R1
67.99
67.91
67.91
67.31
67.56
67.60
67.69
68.36
68.45
68.36
67.90
68.00
66.56
68.22
68.54
68.45
68.66
65.48
0.00
MARR DRAIN (BRANCH 'A')
MARR DRAIN (OPEN CHANNEL)
KNOWN AS CARLOW ROAD

```
******************************************************************
*                          E P A N E T                           *
*                  Hydraulic and Water Quality                   *
*                  Analysis for Pipe Networks                    *
*                        Version 2.2                             *
******************************************************************
```

Input File: 2022-07-13 - Max. Hour.net

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	R1	J1	118.91	200
2	J1	HYD1	5	150
3	J1	J11	101.69	150
4	J11	J10	30.24	150
5	J10	HYD7	5	150
6	J10	J9	85.32	150
7	J9	J8	49.72	150
8	J8	HYD5	5	150
9	J8	J13	58.13	150
10	J13	J12	45.02	150
11	J12	HYD6	5	150
12	J12	J11	89.84	150
13	J7	J8	88.82	150
14	J7	J6	33.57	150
15	J6	HYD4	5	100
16	J6	J5	125.21	150
17	J5	HYD3	5	150
18	J5	J4	26.66	150
19	J4	J3	82.76	150
20	J3	HYD2	5	150
21	J3	J2	67.91	150
22	J2	J1	45.91	150

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
J1	0.70	247.46	65.70	0.12
J3	0.00	247.40	67.69	0.31
HYD2	0.00	247.40	67.60	72.00
J11	0.00	247.39	68.66	0.25
J8	0.88	247.37	68.00	0.89

J7	0.00	247.37	67.56	4.33
J6	0.61	247.37	67.40	2.61
HYD4	0.00	247.37	67.31	72.00
HYD7	0.00	247.38	68.45	72.00

Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality hours	
J10	0.79	247.38	68.54	0.33	
J9	0.00	247.38	68.22	0.68	
HYD5	0.00	247.37	67.90	72.00	
J13	0.88	247.37	68.36	1.16	
J12	1.14	247.37	68.45	0.50	
HYD6	0.00	247.37	68.36	72.00	
J2	1.49	247.43	66.56	0.18	
J4	1.05	247.38	67.91	0.47	
J5	0.96	247.37	67.99	0.56	
HYD3	0.00	247.37	67.91	72.00	
HYD1	0.00	247.46	65.48	72.00	
R1	-8.49	247.54	0.00	0.00	Reservoir

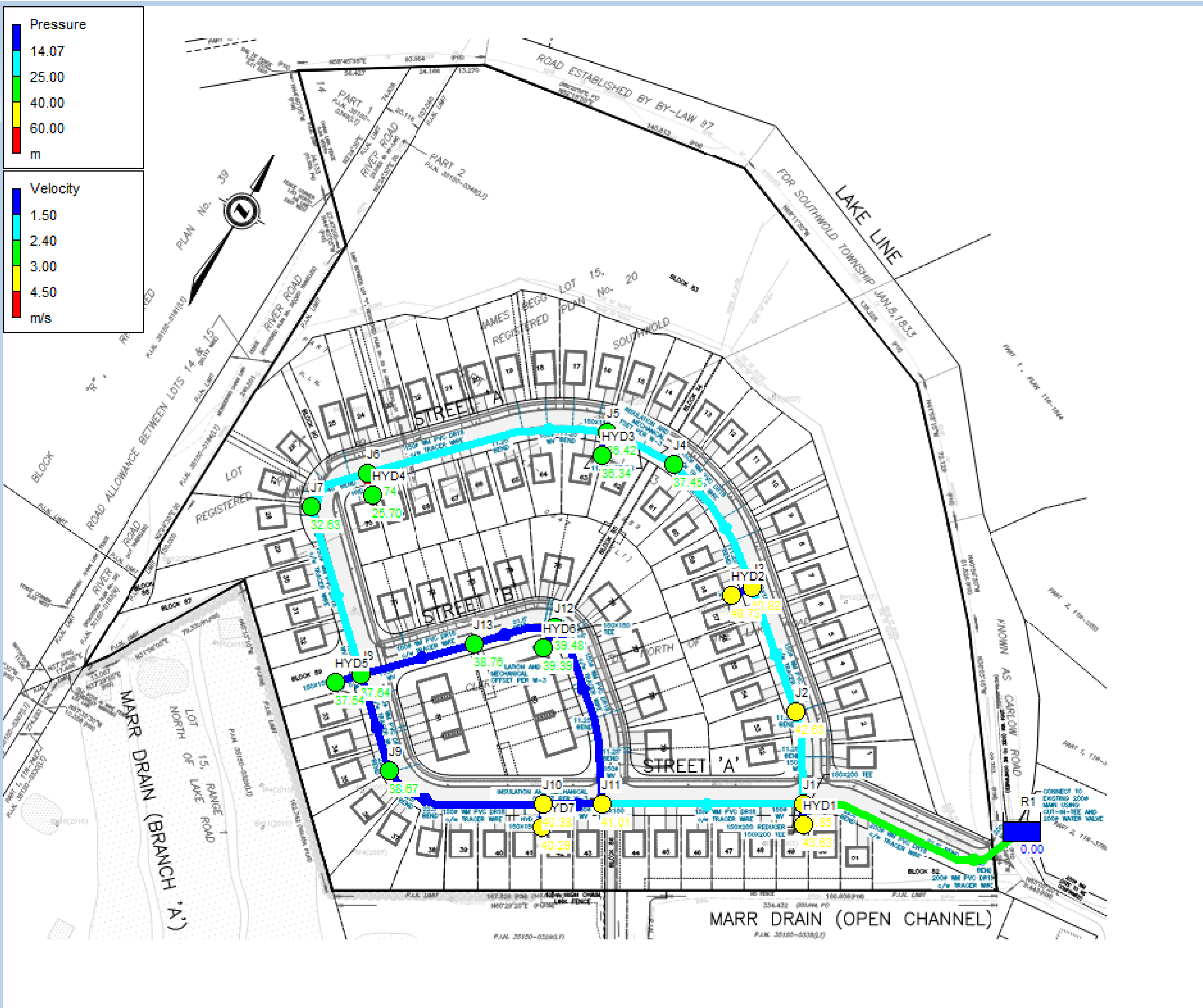
Link Results:

Link ID	Flow LPS	VelocityUnit m/s	Headloss m/km	Status
1	8.49	0.27	0.66	Open
2	0.00	0.00	0.00	Open
3	3.80	0.22	0.72	Open
4	1.98	0.11	0.21	Open
5	0.00	0.00	0.00	Open
6	1.19	0.07	0.08	Open
7	1.19	0.07	0.08	Open
8	0.00	0.00	0.00	Open
9	0.19	0.01	0.00	Open
10	-0.69	0.04	0.03	Open
11	0.00	0.00	0.00	Open
12	-1.82	0.10	0.18	Open
13	-0.13	0.01	0.00	Open
14	0.13	0.01	0.00	Open
15	0.00	0.00	0.00	Open
16	-0.49	0.03	0.02	Open
17	0.00	0.00	0.00	Open
18	-1.45	0.08	0.12	Open
19	-2.50	0.14	0.33	Open
20	0.00	0.00	0.00	Open

21	-2.50	0.14	0.33	Open
22	-3.99	0.23	0.78	Open

APPENDIX D

EPANET V2:
Max Day Plus Fire Flow Demand Layout (HYD4)
Max Day plus Fire Flow Demand Results (HYD4)
Max Day Plus Fire Flow Demand @20 psi Layout (HYD4)
Max Day plus Fire Flow Demand @20 psi Results (HYD4)


Pressure
14.07
25.00
40.00
60.00
m
Velocity
1.50
2.40
3.00
4.50
m/s
STREET 'A'
STREET 'B'
STREET 'A'
LAKE LINE
MARR DRAIN (OPEN CHANNEL)
MARR DRAIN (BRANCH 'A')
J1
J2
J4
J5
J6
J7
J9
J10
J11
J12
J13
HYD1
HYD2
HYD3
HYD4
HYD5
HYD6
R1
0.00
43.63
42.63
40.73
37.45
36.34
25.70
32.63
37.54
37.64
38.67
38.76
39.48
39.39
40.38
40.29
41.01

```
******************************************************************
*                          E P A N E T                           *
*                  Hydraulic and Water Quality                   *
*                  Analysis for Pipe Networks                    *
*                        Version 2.2                             *
******************************************************************
```

Input File: 2022-07-13 - Max. Day + Fire Flow.net

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	R1	J1	118.91	200
2	J1	HYD1	5	150
3	J1	J11	101.69	150
4	J11	J10	30.24	150
5	J10	HYD7	5	150
6	J10	J9	85.32	150
7	J9	J8	49.72	150
8	J8	HYD5	5	150
9	J8	J13	58.13	150
10	J13	J12	45.02	150
11	J12	HYD6	5	150
12	J12	J11	89.84	150
13	J7	J8	88.82	150
14	J7	J6	33.57	150
15	J6	HYD4	5	100
16	J6	J5	125.21	150
17	J5	HYD3	5	150
18	J5	J4	26.66	150
19	J4	J3	82.76	150
20	J3	HYD2	5	150
21	J3	J2	67.91	150
22	J2	J1	45.91	150

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
J1	0.47	225.61	43.85	0.01
J3	0.00	220.53	40.82	0.03
HYD2	0.00	220.53	40.73	72.00
J11	0.00	219.74	41.01	0.03
J8	0.58	217.01	37.64	0.07

J7	0.00	212.44	32.63	0.08
J6	0.41	210.71	30.74	0.08
HYD4	71.45	205.76	25.70	0.08
HYD7	0.00	219.22	40.29	72.00

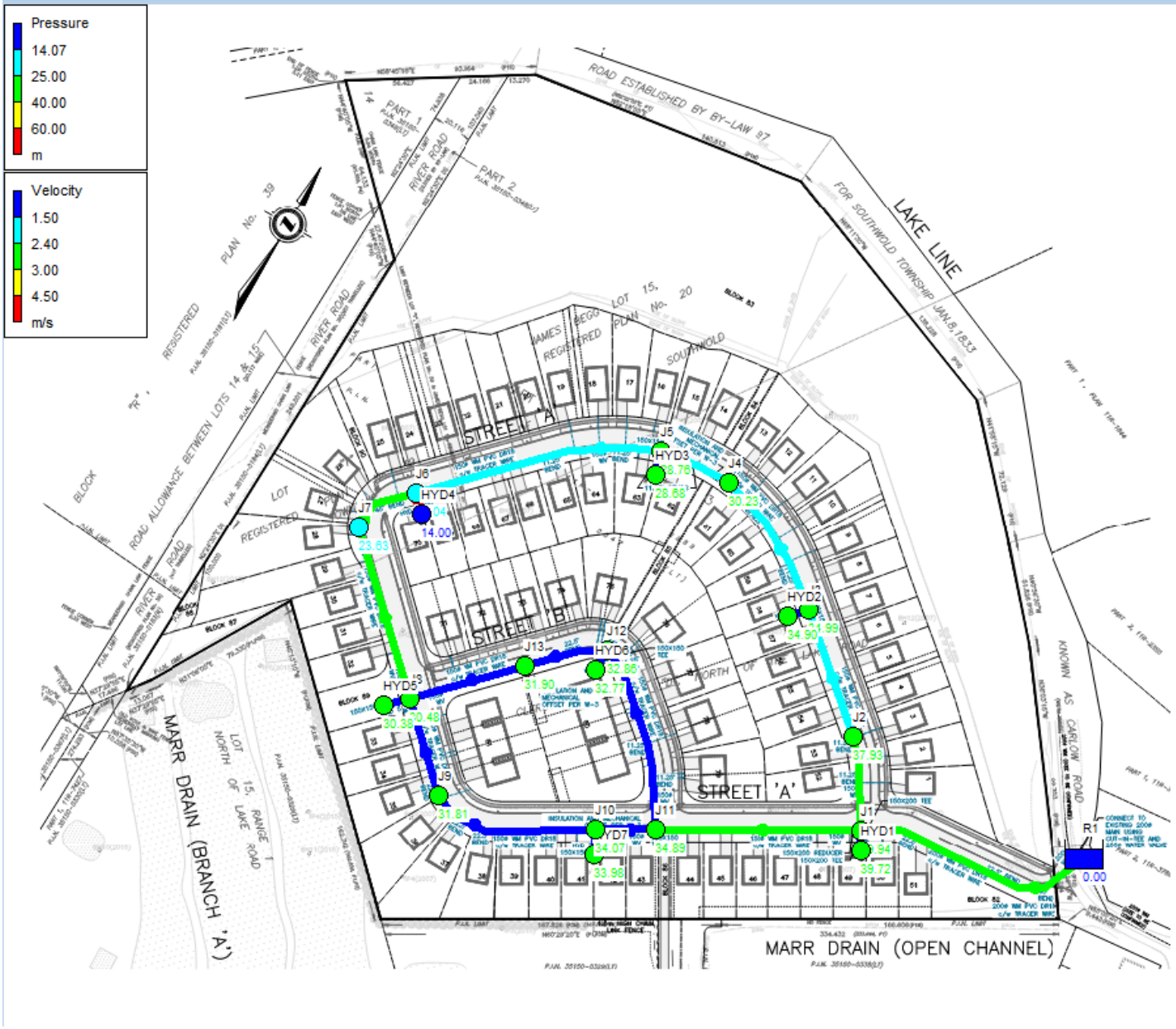
Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality hours	
J10	0.52	219.22	40.38	0.03	
J9	0.00	217.83	38.67	0.05	
HYD5	0.00	217.01	37.54	72.00	
J13	0.58	217.77	38.76	0.06	
J12	0.76	218.40	39.48	0.05	
HYD6	0.00	218.40	39.39	72.00	
J2	0.99	223.50	42.63	0.02	
J4	0.70	216.92	37.45	0.04	
J5	0.64	215.80	36.42	0.04	
HYD3	0.00	215.80	36.34	72.00	
HYD1	0.00	225.61	43.63	72.00	
R1	-77.11	230.25	0.00	0.00	Reservoir

Link Results:

Link ID	Flow LPS	VelocityUnit m/s	Headloss m/km	Status
1	77.11	2.45	38.99	Open
2	0.00	0.00	0.00	Open
3	40.67	2.30	57.78	Open
4	21.09	1.19	17.13	Open
5	0.00	0.00	0.00	Open
6	20.57	1.16	16.34	Open
7	20.57	1.16	16.34	Open
8	0.00	0.00	0.00	Open
9	-18.24	1.03	13.08	Open
10	-18.82	1.07	13.87	Open
11	0.00	0.00	0.00	Open
12	-19.58	1.11	14.92	Open
13	-38.23	2.16	51.50	Open
14	38.23	2.16	51.50	Open
15	71.45	9.10	990.79	Open
16	-33.63	1.90	40.63	Open
17	0.00	0.00	0.00	Open
18	-34.27	1.94	42.08	Open
19	-34.97	1.98	43.68	Open
20	0.00	0.00	0.00	Open

21	-34.97	1.98	43.68	Open
22	-35.97	2.04	46.01	Open


Pressure
14.07
25.00
40.00
60.00
m
Velocity
1.50
2.40
3.00
4.50
m/s
LAKE LINE
ROAD ESTABLISHED BY BY-LAW 87
FOR SOUTHWOLD TOWNSHIP JAN.8,1833
STREET 'A'
STREET 'B'
STREET 'A'
MARR DRAIN (BRANCH 'A')
MARR DRAIN (OPEN CHANNEL)
RIVER ROAD
ROAD ALLOWANCE BETWEEN LOTS 14 & 15
KNOWN AS CARLOW ROAD
HYD1
HYD2
HYD3
HYD4
HYD5
HYD6
HYD7
J1
J2
J4
J5
J6
J7
J9
J10
J11
J12
J13
R1
0.00
14.00
23.63
28.68
30.23
34.90
37.93
39.72
30.38
30.48
31.81
34.07
33.98
34.89
31.90
32.77
32.86

```
******************************************************************
*                          E P A N E T                           *
*                  Hydraulic and Water Quality                   *
*                  Analysis for Pipe Networks                    *
*                        Version 2.2                             *
******************************************************************
```

Input File: 2022-07-13 - Max. Day + Fire Flow @ 20 psi.net

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	R1	J1	118.91	200
2	J1	HYD1	5	150
3	J1	J11	101.69	150
4	J11	J10	30.24	150
5	J10	HYD7	5	150
6	J10	J9	85.32	150
7	J9	J8	49.72	150
8	J8	HYD5	5	150
9	J8	J13	58.13	150
10	J13	J12	45.02	150
11	J12	HYD6	5	150
12	J12	J11	89.84	150
13	J7	J8	88.82	150
14	J7	J6	33.57	150
15	J6	HYD4	5	100
16	J6	J5	125.21	150
17	J5	HYD3	5	150
18	J5	J4	26.66	150
19	J4	J3	82.76	150
20	J3	HYD2	5	150
21	J3	J2	67.91	150
22	J2	J1	45.91	150

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
J1	0.47	221.70	39.94	0.01
J3	0.00	214.70	34.99	0.02
HYD2	0.00	214.70	34.90	72.00
J11	0.00	213.62	34.89	0.02
J8	0.58	209.85	30.48	0.06

J7	0.00	203.44	23.63	0.07
J6	0.41	201.01	21.04	0.06
HYD4	85.79	194.06	14.00	0.06
HYD7	0.00	212.91	33.98	72.00

Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality hours	
J10	0.52	212.91	34.07	0.03	
J9	0.00	210.97	31.81	0.04	
HYD5	0.00	209.85	30.38	72.00	
J13	0.58	210.91	31.90	0.05	
J12	0.76	211.78	32.86	0.04	
HYD6	0.00	211.78	32.77	72.00	
J2	0.99	218.80	37.93	0.02	
J4	0.70	209.70	30.23	0.03	
J5	0.64	208.14	28.76	0.04	
HYD3	0.00	208.14	28.68	72.00	
HYD1	0.00	221.70	39.72	72.00	
R1	-91.45	228.06	0.00	0.00	Reservoir

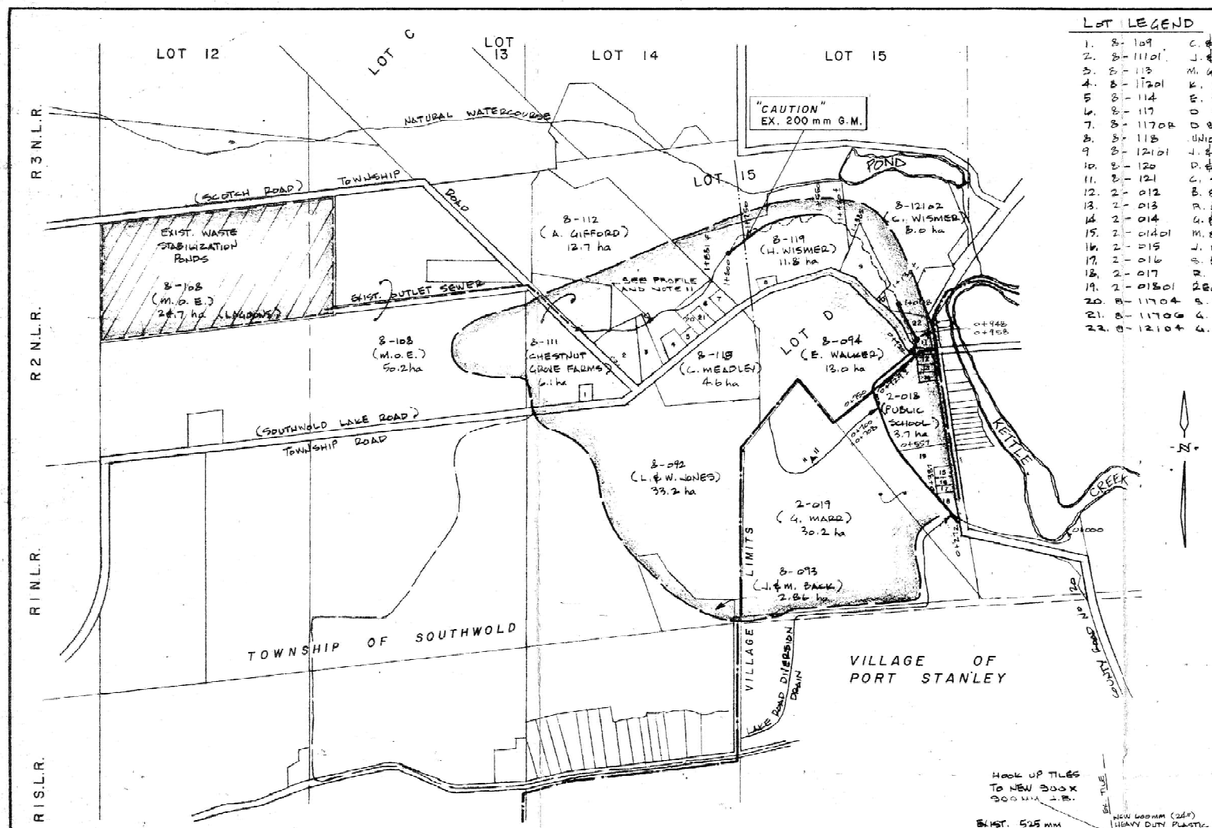
Link Results:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	91.45	2.91	53.47	Open
2	0.00	0.00	0.00	Open
3	48.31	2.73	79.46	Open
4	25.07	1.42	23.58	Open
5	0.00	0.00	0.00	Open
6	24.55	1.39	22.68	Open
7	24.55	1.39	22.68	Open
8	0.00	0.00	0.00	Open
9	-21.90	1.24	18.36	Open
10	-22.48	1.27	19.27	Open
11	0.00	0.00	0.00	Open
12	-23.24	1.32	20.49	Open
13	-45.86	2.60	72.17	Open
14	45.86	2.60	72.17	Open
15	85.79	10.92	1390.26	Open
16	-40.33	2.28	56.88	Open
17	0.00	0.00	0.00	Open
18	-40.98	2.32	58.57	Open
19	-41.68	2.36	60.44	Open
20	0.00	0.00	0.00	Open

21	-41.68	2.36	60.44	Open
22	-42.67	2.41	63.13	Open

APPENDIX E

Marr Drain Plan and Details by Spriet Associates
Marr Drain Profiles Drawing
SWM Calculations
Environment and Climate Change Canada Rain Gauge Information for St Thomas WPCP ID ON_6137362
IDF to Chicago Conversion Using MIDUSS
Chicago Hyetograph Creation
Staged Storage Volume Calculations
Stormceptor EFO10 Stormwater Treatment Unit



PLAN

SCALE 1:7500

LOT LEGEND

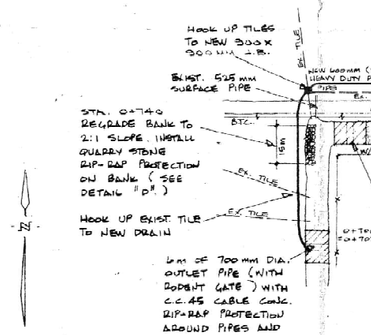
1.	B-109	C. & P. MAJOR	0.14 ha
2.	B-11101	J. & C. JOHNSON	1.20 ha
3.	B-113	M. GIFFORD	0.69 ha
4.	B-11201	K. GIFFORD	0.31 ha
5	B-114	E. BEATTIE	0.13 ha
6.	B-117	D GILBERT	0.71 ha
7.	B-1170A	D & R PEARN	0.20 ha
8.	B-115	UNION GAS LTD.	0.10 ha
9	B-12101	J. & G. HURST	1.40 ha
10.	B-120	P. & M. ZANITZ	0.20 ha
11.	B-121	C. SCIPMORE	0.25 ha
12.	2-012	B. & G. STORMES	0.09 ha
13.	2-013	R. & M. SMITH	0.09 ha
14.	2-014	G. & S. ELLIOTT	0.09 ha
15.	2-01401	M. & D. McCANNON	0.14 ha
16.	2-015	J. McCARTHY	0.09 ha
17.	2-016	S. & V. WINGAART	0.09 ha
18.	2-017	R. WALLS	0.22 ha
19.	2-01801	RECREATION CENTRE	1.10 ha
20.	B-11704	S. FRANK	0.20 ha
21.	B-11706	G. HINSCHBERGER	0.20 ha
22.	B-12104	G. NOESCHER	0.35 ha.

GENERAL NOTES

1. OUR SPECIFICATIONS DATED JANUARY 1983 APPLY TO THIS PROJECT.
2. ALL OWNERS OF LANDS WHERE THE DRAIN IS TO BE CONSTRUCTED SHALL MAKE AN ACCESS ROUTE AVAILABLE FROM THE NEAREST ROAD ALLOWANCE TO THE DRAIN LOCATION. THE AVERAGE WIDTH OF THIS ROUTE SHALL NOT EXCEED 8 METERS.
3. THE WORKING WIDTH AVAILABLE TO THE CONTRACTOR TO CONSTRUCT THE DRAIN AND CONNECTIONS CONSISTS OF THOSE LANDS IMMEDIATELY ADJACENT TO THE COURSE OF THE DRAIN AND CONNECTIONS AND SHALL NOT EXCEED AN AVERAGE WIDTH OF 15 METERS FOR TILING AND 15 METERS FOR BACKFILLING AND REGRADING.
4. CATCHBASINS TO BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH OUR SPECIFICATIONS. EXACT LOCATION AND ELEVATION OF CATCHBASINS TO BE CONFIRMED BY ENGINEER OR DRAINAGE SUPERINTENDENT PRIOR TO CONSTRUCTION.
5. ALL TREES, BRUSH, SCRUB ETC. TO BE CLEARED IN ACCORDANCE WITH OUR SPECIFICATIONS. ALL TREES AND BRUSH TO BE REMOVED FROM BACKFILLED DITCH.
6. ALL QUARRY STONE TO RANGE IN SIZE FROM 100 mm TO 300 mm EVENLY DISTRIBUTED AND PLACED TO A 300 mm THICKNESS ON AN APPROVED GEOTEXTILE.
7. EXACT LOCATION OF NEW CLOSED DRAINS TO BE CONFIRMED BY ENGINEER OR DRAINAGE SUPERINTENDENT PRIOR TO CONSTRUCTION.
8. BACKFILLED DITCHES AND REGRADED DITCH BANKS TO BE HYDRO SEEDED AND MULCHED AT A RATE OF 65 kg/ha WITH THE FOLLOWING GRASS SEED MIXTURE:

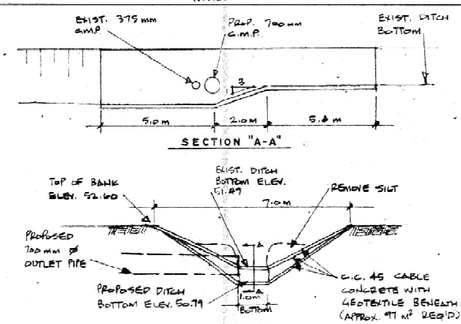
· CREEPING RED FESCUE	40%
· KENTUCKY BLUE GRASS	20%
· RED TOP	10%
· TIMOTHY	20%
· LADINO	10%

9. CABLE CONCRETE TO BE C.C.-45 AS MANUFACTURED BY WEST LORNE PRECAST AND TO BE INSTALLED WITH GEOTEXTILE ATTACHED TO UNDERSIDE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
10. CONTRACTOR TO NOTIFY UNION GAS CO. 72 HRS. PRIOR TO CROSSING GAS LINE.
11. CONTRACTOR TO SUPPLY & INSTALL QUARRY STONE RIP-RAP WITH FILTER BLANKET ON GIFFORD PROPERTY STA 2+930



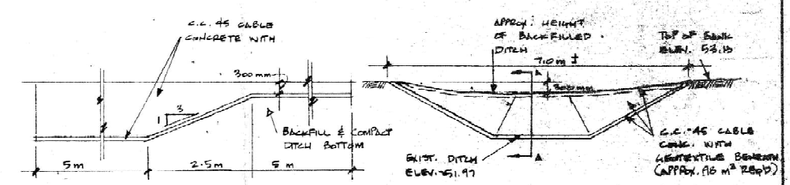
DETAIL "A"

N.T.S.



STA 0+708 ±

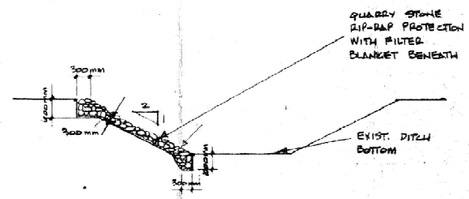
DETAIL "B" N.T.S.



STA 0+750 ±

DETAIL "C"

N.T.S.



DETAIL "D"

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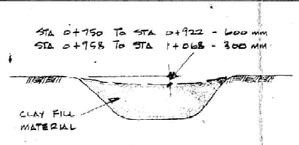


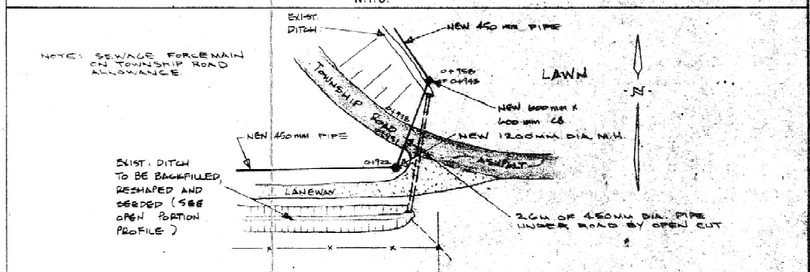
NOTES

1. EXIST. DITCH TO BE BACKFILLED USING IMPORTED CLAY FILL MATERIAL (APPROX. 1400 m³ LOOSE FILL REQ'D) DITCH TO BE BACKFILLED AND COMPACTED WITH DOZER IN APPROXIMATELY 150 mm. LAYERS.
2. IMPORTED TOPSOIL TO BE LEVELLED OVER CLAY FILL MATERIAL TO A THICKNESS OF 50 mm (APPROX. 110 m³ REQ'D)
3. BACKFILLED DITCH TO BE HYDRO SEEDED AND MULCHED WITH AN APPROVED GRASS SEED MIXTURE AT A RATE OF 84 kg/ha [75 lbs/ac (APPROX. 1600 m² SEEDING REQ'D)]

TYPICAL BACKFILLED DITCH SECTION

DETAIL "E"

N.T.S.

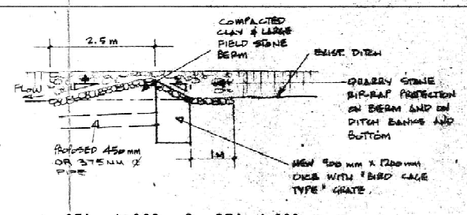


DETAIL "F"

N.T.S.

NOTES

1. BERM TO BE CONSTRUCTED WITH IMPORTED CLAY FILL MATERIAL MIXED WITH LARGE FIELD STONE TO A 50% - 50% RATIO.
2. ENDS OF BERM TO BE 150 mm LOWER THAN ELEV. AT D.I.B. LOCATION



STA 1+068 & STA 1+800

DETAIL "G"

N.T.S.

J. R. SPRIET — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

MARR DRAIN

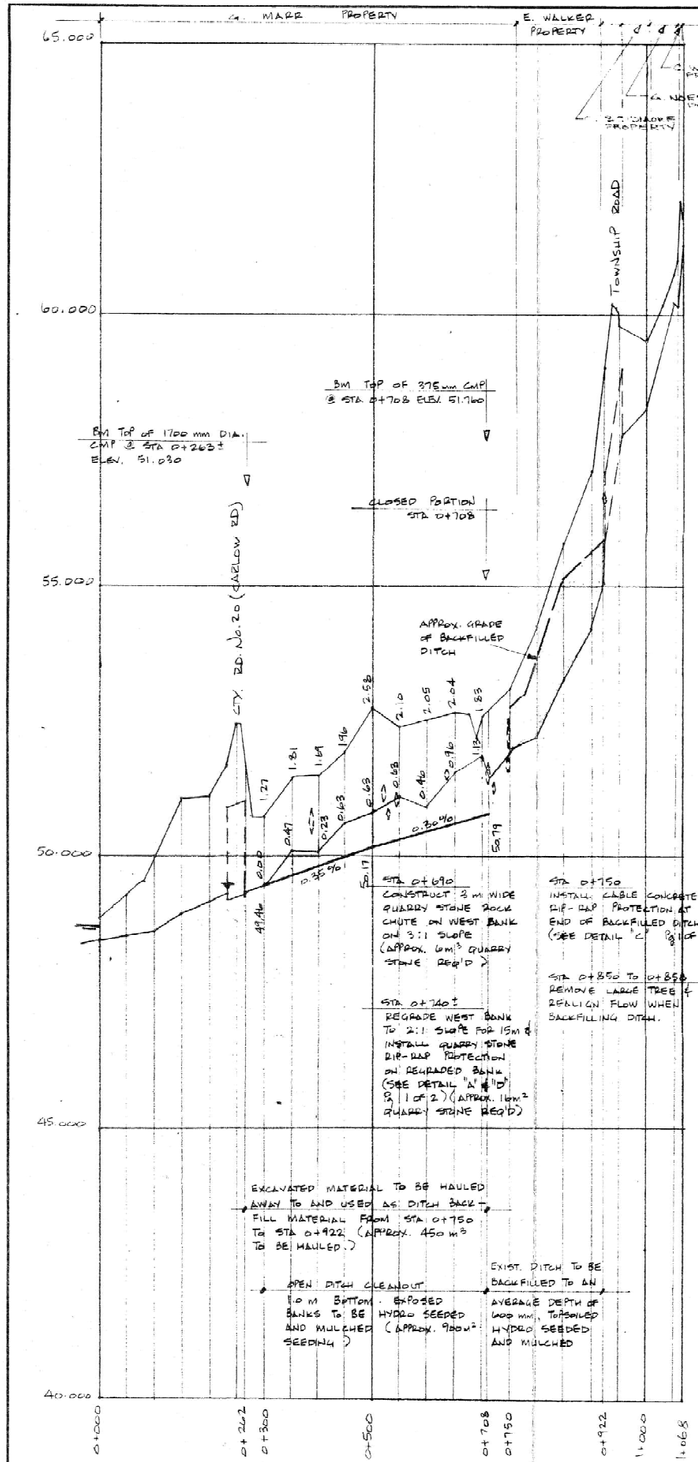
VILLAGE OF PORT STANLEY

Scale: AS SHOWN	Approved By:	JOB NO.	Drawn By: MD, AD
Date: MAY 23, 1991	F.B. D142,146	87086	Revised:

PLAN & DETAILS

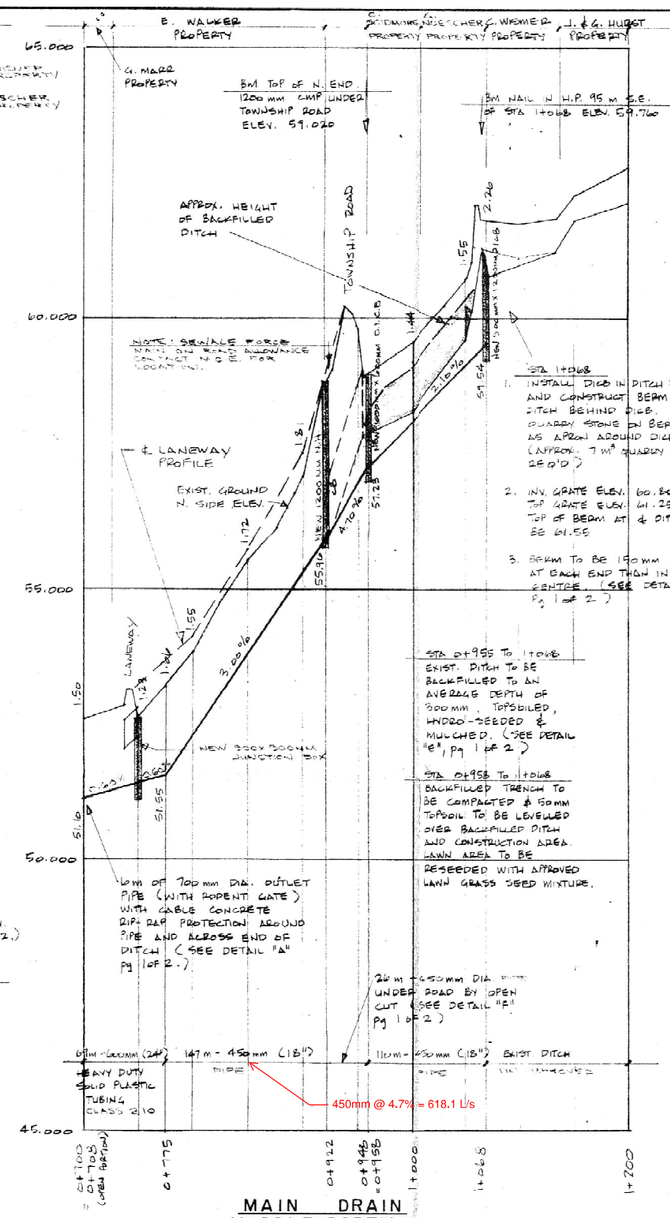
SPRIET ASSOCIATES CONSULTING ENGINEERS — LONDON SUDBURY

Drawing Number 1 of 2



MAIN DRAIN OPEN PORTION

SCALE hor 1:2500
vert 1:50

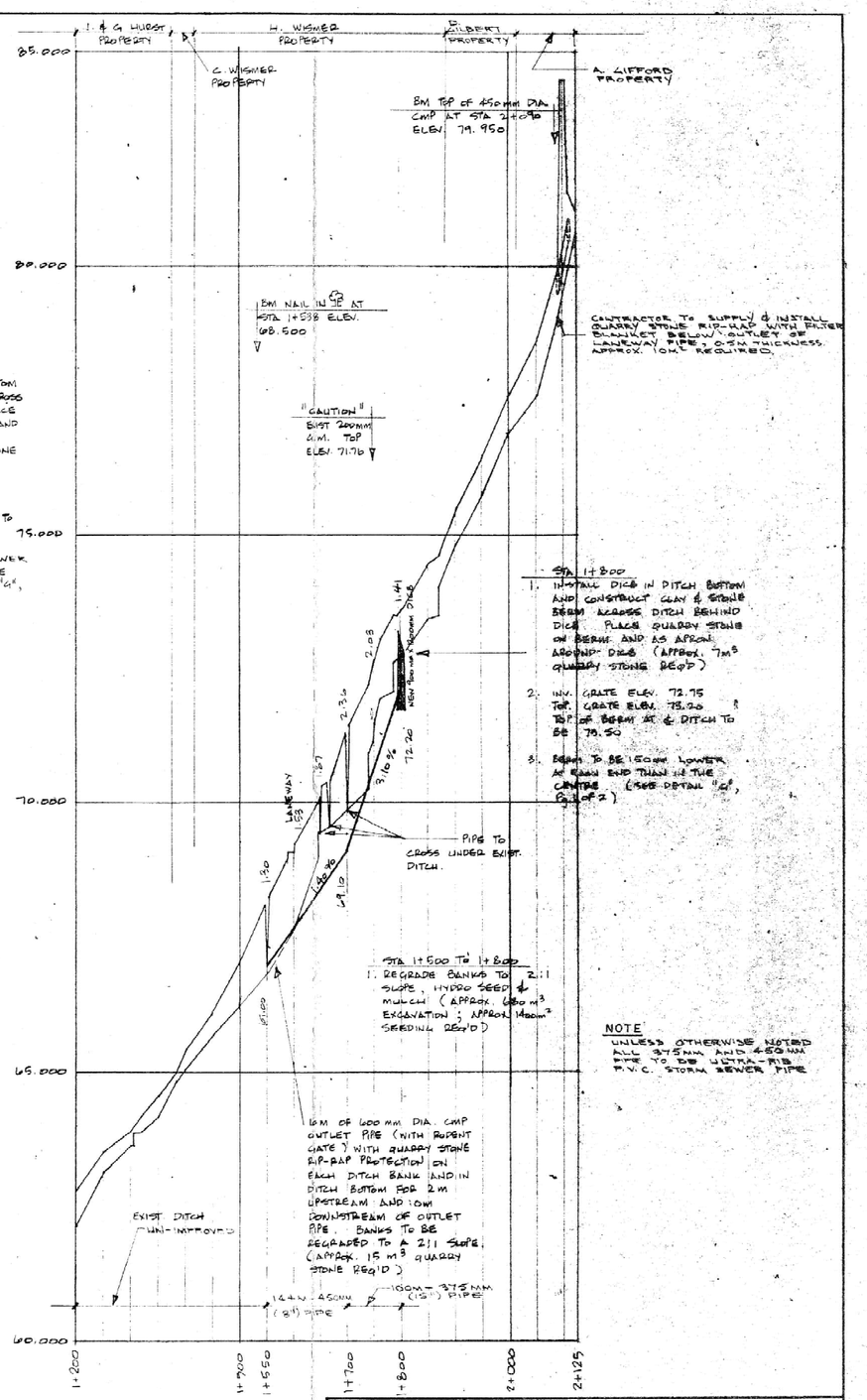


MAIN DRAIN MIDDLE PORTION

SCALE hor 1:2500
vert 1:50

APPROX. QUANTITIES

· EXCAVATION	STA 0+300 TO 0+708	450 m³
	STA 1+550 TO 1+800	680 m³
· HYDRO-SEEDING OF DITCH BANKS & BACKFILLED DITCH		3900 m²
· HAULING OF EXCAVATED MATERIAL		450 m³
· IMPORTED TOPSOIL		110 m³
· IMPORTED CLAY FILL MATERIAL FOR BACKFILLING DITCH AND BERMS		1200 m³
· QUARRY STONE RIP-RAP PROTECTION		56 m³
· FILTER BLANKET		170 m²
· CABLE CONCRETE C.C.-45 (INCLUDING GEOTEXTILE)		195 m²



MAIN DRAIN UPPER PORTION

SCALE hor 1:5000
vert 1:50

MARR DRAIN			
VILLAGE OF PORT STANLEY			
Scale: AS SHOWN	Approved By:	JOB NO.	Drawn By: M.D., A.D.
Date: MAY 23, 1991	F.B. D-142, 146	87086	Revised:
PROFILES			
SPRIET ASSOCIATES CONSULTING ENGINEERS	LONDON SUDBURY		Drawing Number 2 of 2

STRIK BALDINELLI MONIZ
PLANNING · CIVIL · STRUCTURAL · MECHANICAL · ELECTRICAL

LONDON LOCATION
1599 Adelaide St. N., Units 301 & 203
London, ON N5X 4E8
P: 519-471-6667

KITCHENER LOCATION
1415 Huron Rd., Unit 225
Kitchener, ON N2R 0L3
P: 519-725-8093

www.sbmltd.ca

sbm@sbmltd.ca

SWM Calculations

DATE: July 20, 2022
JOB No.: SBM-18-0530

Client: Strathroy Turf Farms Ltd.
Project: Kettle Creek Subdivision
Location: 57719 Lake Line, Port Stanley, Ontario

ST THOMAS WPCP CHICAGO RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters A	B	C
2	737.970	7.382	0.8035
5	1009.820	7.472	0.8055
10	1178.220	7.382	0.8049
25	1398.350	7.382	0.8048
50	1497.170	6.876	0.7978
100	1634.380	6.798	0.7954

*Intensity i=A/(t+B)^C (mm/hr)
Post development flows to be kept at 2-100-year pre development levels

Note: Chicago Rainfall Distribution Parameters were derived from the IDF Parameters obtained from Environment and Climate Change Canada Rain Gauge Information dated 27th of February 2019 for The St Thomas WPCP ID ON_6137362 (Table 2b) from 1926 - 2007 provided in Appendix F. The Intensity from Table 2b was inputted in Midsuss IDF Curve Fit tools to produce the Chicago Distribution parameters.

3.3.5 Runoff Coefficients

The value of runoff coefficient R, is to be taken from the following:

Asphalt or Concrete Surfaces	0.9
Roof Areas	0.9
Single Family Residential	0.35 to 0.75
Semi-Detached Residential	0.40 to 0.75
Apartments	0.50 to 0.70
Light industrial	0.50 to 0.80
Heavy industrial	0.60 to 0.90
Neighbourhood Commercial	0.50 to 0.70
Playgrounds	0.2
Parks	0.2

* Refer to Design Guidelines of the Municipality of Central Elgin Infrastructure Design Guidelines and Construction Standards

PRE-DEVELOPMENT CONDITIONS

PRE-DEVELOPMENT AREA FOR ENTIRE SITE

	Area (m^2)	C	A*C
EXT101 (R.O.W.)	4905.95	0.9	4415.3586
A101 (Slope)	64829.42	0.2	12965.8834
A102 (Field)	88904.91	0.21	18499.481
A103 (Golf Course)	7482.14	0.2	1496.4288
Total Site Area:	166122.42		37377.1518
C_{ea} = Σ(A*C)/Σ(A) =	0.22		

POST-DEVELOPMENT CONDITIONS

CALCULATE SUBDIVISION RUNOFF CO-EFFICIENT (R.O.W. AND RESIDENTIAL LOTS)

R.O.W. - Street A	Area (Per 1m W.)	C	A*C (per m of R.O.W.)
Total	20.0		
Pavement	8.08	0.9	7.272
Curb & Gutter (0.44m per side)	0.88	0.9	0.792
Sidewalk (1.5m on one side)	1.50	0.9	1.35
Grass	9.54	0.2	1.908
Total	20.0		11.3
C_{ea} = Σ(A*C)/Σ(A) =	0.57		

Composite Runoff Coefficient (R.O.W. and Residential Lots Combined)

	Area (m^2)	C	A*C
R.O.W. - Street A	16893.77	0.57	9563.563197
Single Family/Semi-Detached Lots	67332.54	0.50	33661.27
Total	84216.31		43224.8332
	0.51	calculated	
	0.52	used for design	

TABLE 1: PRE-DEVELOPMENT SUBCATCHMENT PARAMETERS

Catchment Area	Total Area (m2)	Total Area (ha)	Land Use 1 Runoff Coefficient 0.20	Land Use 2 Runoff Coefficient 0.35	Land Use 3 Runoff Coefficient 0.52	Land Use 4 Runoff Coefficient 0.90	Land Use 5 Runoff Coefficient 0.70	Weighted C Value	[4]Flow Length (m)	Width (m)	% Slope	% Impervious	[1]N- Imperv	[2] N- Perv	[3] Distore - Imperv (mm)	[3] Distore- Perv (mm)	[1] SCS Curve Numbers
Pre Development																	
A101 (Slope)	64829.417	6.483	64829.417					0.20	84	772	30	0.00	0.011	0.4	2	7.5	70
A102 (Field)	88904.905	8.890	87467.905				1437.000	0.21	195	456	3	1.15	0.011	0.2	2	3.8	74
A103 (Natural Area/Golf Course)	7482.144	0.748	7482.144					0.20	144	52	3	0.00	0.011	0.2	2	3.8	74
EXT101 (R.O.W.)	4905.954	0.491				4905.954		0.90	8	613	2	100.00	0.011	0.2	2	3.8	98

TABLE 2: POST-DEVELOPMENT SUBCATCHMENT PARAMETERS

Catchment Area	Total Area (m2)	Total Area (ha)	Land Use 1 Runoff Coefficient 0.20	Land Use 2 Runoff Coefficient 0.35	Land Use 3 Runoff Coefficient 0.52	Land Use 4 Runoff Coefficient 0.65	Land Use 5 Runoff Coefficient 0.70	Weighted C Value	Flow Length (m)	Width (m)	% Slope	% Impervious	[1]N- Imperv	[2] N- Perv	[3] Distore - Imperv (mm)	[3] Distore- Perv (mm)	[1] Pervious CN
Post Development																	
A201 (Slope)	4269.961	0.43	4269.961					0.20	48	95	30	0.00	0.011	0.4	2	7.5	70
A202	2187.582	0.22			2187.582			0.52	90	24	2	45.71	0.011	0.2	2	3.8	90
A203 (Slope)	5062.143	0.51	5062.143					0.20	58	87	30	0.00	0.011	0.4	2	7.5	70
A204	763.916	0.08			763.916			0.52	15	40	2	45.71	0.011	0.2	2	3.8	90
A205	477.764	0.05			477.764			0.52	5	96	2	45.71	0.011	0.2	2	3.8	90
A206 (Slope)	1203.622	0.12	1203.622					0.20	160	8	30	0.00	0.011	0.4	2	7.5	70
A207	337.929	0.03			337.929			0.52	5	68	2	45.71	0.011	0.2	2	3.8	90
A208 (Slope)	15237.531	1.52	15237.531					0.20	127	120	30	0.00	0.011	0.4	2	7.5	70
A209	440.645	0.04			440.645			0.52	5	88	2	45.71	0.011	0.2	2	3.8	90
A210 (Slope)	13576.816	1.36	13576.816					0.20	95	143	30	0.00	0.011	0.4	2	7.5	70
A211	1929.694	0.19			1929.694			0.52	30	64	2	45.71	0.011	0.2	2	3.8	90
A212	24609.802	2.46			24609.802			0.52	170	145	2	45.71	0.011	0.2	2	3.8	90
A213	5495.664	0.55			5495.664			0.52	70	79	2	45.71	0.011	0.2	2	3.8	90
A214	9939.803	0.99			9939.803			0.52	125	80	2	45.71	0.011	0.2	2	3.8	90
A215	10906.213	1.09			10307.343	578.87		0.53	132	83	2	46.70	0.011	0.2	2	3.8	90
A216	2458.865	0.25				2458.865		0.65	25	98	2	64.29	0.011	0.2	2	3.8	90
A217	18547.280	1.85			15612.940	2934.34		0.54	190	98	2	48.65	0.011	0.2	2	3.8	90
A218	5371.445	0.54			5371.445			0.52	135	40	2	45.71	0.011	0.2	2	3.8	90
A219	629.660	0.06	629.660					0.20	8	84	2	0.00	0.011	0.2	2	3.8	90
A220 (SWM Dry Pond)	5831.404	0.58		5831.404				0.35	30	194	8	21.43	0.011	0.2	2	3.8	74
U201	4385.089	0.44	4385.089					0.20	100	44	3	0.00	0.011	0.2	2	3.8	74
U202	814.844	0.08			814.844			0.52	17	48	6	45.71	0.011	0.2	2	3.8	90
EXT201 (R.O.W.)	1100.173	0.11					1100.173	0.70	8	138	2	71.43	0.011	0.2	2	3.8	98
EXT202 (R.O.W.)	1162.363	0.12					1162.363	0.70	8	145	2	71.43	0.011	0.2	2	3.8	98
EXT203 (Slope)	9495.447	0.95	9495.447					0.20	130	73	30	0.00	0.011	0.4	2	7.5	70
EXT204 (R.O.W.)	1225.287	0.12					1225.287	0.70	8	153	2	71.43	0.011	0.2	2	3.8	98
EXT205 (Slope)	12583.421	1.26	12583.421					0.20	160	79	30	0.00	0.011	0.4	2	7.5	70
EXT206 (R.O.W.)	2028.576	0.20					2028.576	0.70	8	254	2	71.43	0.011	0.2	2	3.8	98
EXT207 (R.O.W.)	3046.000	0.30					3046.000	0.70	8	381	2	71.43	0.011	0.2	2	3.8	98

Average Hydrological Soil Group of C for the site (Communication from Geotechnical engineers EXP dated 2021-07-05)
[1] Values from A.4 of Storm Water Management Model User's Manual Version 5.1
[2] Values from A.6 of Storm Water Management Model User's Manual Version 5.1
[3] Values from A.5 of Storm Water Management Model User's Manual Version 5.1
[4] Sample Calculation to Convert from C to % Impervious: % Impervious = x
C = x(0.9) + (1-x)0.2 (ie. weighted C value)
therefore 0.7x = C - 0.2
x = (C-0.2)/0.7

TABLE 3: Result Summary from EPA SWMM5.1 Modelling

Design Storm Event	Existing Conditions Peak Runoff for Entire Site (m^3/s)	Proposed Conditions Peak Discharge - 430mm Orifice (m^3/s)	Proposed Conditions Peak Discharge - Weir (m^3/s)	Proposed Conditions Peak Uncontrolled Flow U201 (m^3/s)	Proposed Conditions Peak Uncontrolled Flow U202 (m^3/s)	Proposed Conditions Total Peak Discharge (m^3/s)	Dry-Basin Total Storage Volume(m^3)	Dry-Basin Peak Ponding Elev. (m)	Dry-Basin Peak Ponding Depth. (m)
2-Year	0.29	0.283	0.00	0.001	0.012	0.286	456	177.66	0.64
5-Year	0.44	0.329	0.00	0.003	0.020	0.333	817	177.82	0.80
10-Year	0.56	0.361	0.00	0.005	0.026	0.368	1,152	177.96	0.94
25-Year	0.71	0.403	0.00	0.010	0.033	0.413	1,682	178.15	1.13
50-Year	0.83	0.431	0.00	0.013	0.039	0.443	2,088	178.29	1.27
100-Year	0.96	0.459	0.00	0.018	0.044	0.473	2,551	178.44	1.42

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Short Duration Rainfall Intensity-Duration-Frequency Data
Données sur l'intensité, la durée et la fréquence des chutes de pluie de courte durée

Gumbel - Method of moments/Méthode des moments

2019/02/27

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ST THOMAS WPCP ON 6137362
(composite)
Latitude: 42 46'N Longitude: 81 13'W Elevation/Altitude: 209 m

Years/Années : 1926 - 2007 # Years/Années : 75

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Table 1 : Annual Maximum (mm)/Maximum annuel (mm)

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Year / Année	5 min	10 min	15 min	30 min	1 h	2 h	6 h	12 h	24 h
1926	8.1	11.9	16.3	24.9	41.1	56.4	75.7	80.3	104.4
1927	7.1	9.4	10.2	15.5	18.3	29.7	40.9	46.2	56.6
1929	9.7	15.0	18.3	21.1	38.4	38.4	38.4	38.4	40.9
1930	8.1	16.0	18.3	24.4	29.0	35.6	49.5	50.3	51.6
1931	8.4	10.7	16.0	20.6	23.1	23.4	33.8	37.1	37.1
1932	7.1	9.9	12.2	22.6	39.4	59.4	64.3	65.3	65.5
1933	10.2	11.2	11.2	11.7	12.2	14.7	24.9	24.9	27.4
1934	7.1	8.4	10.4	12.2	15.2	16.0	25.9	27.2	27.2
1935	14.0	26.4	32.8	49.8	60.2	63.2	63.2	63.2	63.2
1936	6.3	11.4	12.2	14.2	19.0	20.3	30.2	32.8	32.8
1937	8.9	17.8	25.1	37.8	43.9	49.8	54.9	56.9	74.4
1938	10.7	14.0	15.0	17.0	17.8	24.9	46.0	47.5	47.5
1939	6.9	11.7	17.5	21.1	21.6	22.1	27.9	30.0	30.5
1940	6.6	12.4	18.3	25.4	33.5	35.3	38.9	50.5	72.9
1941	8.6	13.2	17.0	27.4	37.8	38.1	38.1	41.4	50.5
1942	15.0	20.3	22.6	23.6	32.0	41.7	47.2	52.8	54.9
1943	7.6	12.2	15.2	20.6	25.9	26.4	40.6	48.8	50.3
1944	8.1	14.5	17.3	21.8	26.4	26.7	33.5	33.5	33.5
1945	9.1	12.2	13.0	18.0	20.1	30.7	47.2	55.4	75.4
1946	9.4	15.0	16.8	17.8	24.6	24.9	27.9	36.3	42.2
1947	9.4	18.3	21.8	29.0	31.7	33.0	40.9	44.2	56.6

1948	10.2	14.7	19.6	19.8	19.8	19.8	26.7	28.2	39.1
1949	6.3	9.9	12.2	14.0	14.2	21.8	33.3	33.5	35.1
1952	8.1	13.7	15.5	23.9	33.0	38.6	44.2	71.4	76.7
1953	5.1	7.9	9.4	16.5	20.6	23.9	25.4	31.0	40.6
1954	5.3	8.9	10.9	16.0	16.3	25.1	33.8	47.2	69.3
1955	6.9	9.9	10.7	12.4	16.0	20.1	33.0	45.5	54.1
1956	10.7	14.7	19.3	23.1	38.1	41.4	51.3	57.7	60.7
1957	12.4	18.5	21.8	24.6	30.7	34.5	42.2	42.7	42.9
1958	6.9	9.7	10.9	18.5	21.1	28.7	36.3	36.3	36.8
1959	9.1	14.7	18.8	25.1	27.4	31.2	35.6	35.8	35.8
1960	8.9	16.0	17.3	21.6	27.4	27.7	31.5	38.6	46.2
1961	12.7	16.0	18.0	20.1	22.6	27.4	31.7	31.7	31.7
1962	12.2	15.7	18.8	18.8	20.8	21.3	36.6	42.7	48.0
1963	4.8	5.8	8.6	10.9	20.6	26.4	29.7	36.1	41.7
1964	11.9	15.0	16.8	23.1	37.1	67.3	86.4	86.9	86.9
1965	5.6	7.6	9.1	12.2	19.3	25.1	31.0	44.2	56.6
1967	6.3	9.4	13.2	23.6	38.1	58.4	66.8	76.2	78.5
1968	11.4	17.8	20.3	25.4	35.8	44.7	86.6	101.6	104.6
1969	29.2	30.5	38.1	45.0	48.5	49.5	49.5	49.5	52.6
1970	5.3	5.8	6.9	11.4	13.5	15.5	29.7	29.7	36.1
1971	10.4	12.7	14.7	22.4	22.4	22.4	26.7	26.7	30.2
1972	5.1	10.2	11.7	15.5	15.5	25.4	27.2	31.7	40.4
1973	6.1	7.4	7.4	8.9	10.2	14.0	23.6	28.4	33.8
1974	6.1	7.4	9.9	11.2	14.5	20.6	25.1	26.9	26.9
1975	10.9	21.8	27.2	35.8	39.4	61.0	66.8	75.9	79.0
1976	20.3	21.6	23.4	25.1	25.4	27.7	49.0	51.6	51.6
1977	11.7	17.3	20.3	22.6	22.6	30.5	45.0	46.0	48.8
1978	9.0	11.4	13.6	16.0	18.7	21.6	32.0	34.4	41.0
1979	5.0	5.8	6.6	8.6	14.0	17.2	27.0	42.8	51.8
1980	8.9	12.3	12.7	16.0	25.1	31.7	34.9	52.9	73.0
1981	-99.9	-99.9	-99.9	-99.9	34.0	36.9	49.2	66.8	73.9
1982	8.5	13.1	16.1	21.2	29.3	30.0	55.6	65.4	68.0
1983	10.7	13.9	18.0	30.6	42.8	50.1	82.2	99.4	108.7
1984	8.6	13.0	14.7	29.4	40.6	64.7	92.1	95.3	124.3
1985	6.5	10.2	14.9	18.4	27.6	34.6	34.8	47.4	52.8
1986	8.9	10.2	13.1	23.9	25.2	37.9	45.1	49.4	50.4
1987	6.1	8.1	8.6	16.3	23.0	27.8	39.4	51.6	51.8
1988	8.9	12.1	13.9	26.9	33.7	40.8	50.4	52.2	52.6
1989	6.1	7.7	9.3	15.4	25.7	26.2	27.2	27.2	27.4
1990	10.3	16.3	21.2	36.4	51.1	56.2	56.7	56.7	76.9
1991	6.1	10.4	13.2	21.4	25.6	27.6	36.9	44.0	46.0
1992	8.4	12.0	17.2	21.2	28.8	30.7	32.2	39.1	52.2
1993	4.0	4.4	5.8	9.0	12.8	13.4	27.5	29.0	34.4
1994	10.3	12.0	12.7	18.4	27.4	31.5	48.6	52.2	52.2
1995	8.1	11.3	12.1	17.4	20.6	31.4	60.0	69.5	72.0
1996	12.1	15.8	18.3	19.1	19.1	24.3	25.3	44.4	52.0
1997	11.4	12.3	16.4	27.2	30.7	31.3	43.4	43.4	46.7
1998	11.7	20.7	29.2	41.5	43.0	43.0	43.0	52.2	56.3
1999	8.5	12.2	16.2	23.0	24.2	25.8	32.9	36.6	36.6
2000	8.5	12.5	16.4	27.8	31.5	44.8	47.5	53.4	58.4

2001	6.1	10.7	11.9	21.4	24.5	24.5	34.8	38.6	40.4
2002	8.4	11.1	14.4	18.8	21.2	23.9	23.9	25.2	34.4
2003	8.1	14.4	16.3	20.6	32.9	38.0	38.4	38.4	38.4
2004	10.2	14.3	15.8	16.9	26.0	26.0	34.7	35.9	45.0
2005	-99.9	-99.9	-99.9	-99.9	-99.9	-99.9	-99.9	-99.9	66.6
2007	5.4	7.7	9.7	13.7	14.7	15.7	19.5	-99.9	-99.9
# Yrs. Années	75	75	75	75	76	76	76	75	76
Mean Moyenne	8.9	12.9	15.7	21.3	27.1	32.5	41.7	47.5	53.5
Std. Dev. Écart-type	3.6	4.6	5.8	7.9	10.0	13.0	15.9	17.4	20.1
Skew. Dissymétrie	2.86	1.13	1.23	1.22	0.77	1.00	1.37	1.26	1.26
Kurtosis	16.47	5.64	5.92	5.49	3.64	3.50	4.77	4.61	4.93

*-99.9 Indicates Missing Data/Données manquantes

Warning: annual maximum amount greater than 100-yr return period amount
Avertissement : la quantité maximale annuelle excède la quantité pour une période de retour de 100 ans

Year/Année	Duration/Durée	Data/Données	100-yr/ans
1935	30 min	49.8	46.1
1935	1 h	60.2	58.5
1969	5 min	29.2	20.2
1969	10 min	30.5	27.3
1969	15 min	38.1	33.8
1976	5 min	20.3	20.2
1984	6 h	92.1	91.6
1984	24 h	124.3	116.4

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Table 2a : Return Period Rainfall Amounts (mm)
Quantité de pluie (mm) par période de retour

****

Duration/Durée	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans	#Years Années
5 min	8.4	11.5	13.6	16.3	18.3	20.2	75
10 min	12.2	16.2	18.9	22.3	24.8	27.3	75
15 min	14.7	19.8	23.2	27.5	30.6	33.8	75
30 min	20.0	27.0	31.6	37.5	41.8	46.1	75
1 h	25.4	34.3	40.1	47.6	53.1	58.5	76
2 h	30.3	41.8	49.4	59.0	66.1	73.1	76
6 h	39.1	53.1	62.4	74.2	82.9	91.6	76
12 h	44.6	60.0	70.2	83.0	92.6	102.1	75
24 h	50.2	67.9	79.7	94.5	105.5	116.4	76

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Table 2b :

Return Period Rainfall Rates (mm/h) - 95% Confidence limits
Intensité de la pluie (mm/h) par période de retour - Limites de confiance de 95%

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Duration/Durée	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans	#Years Années
5 min	100.3	138.4	163.7	195.6	219.3	242.8	75
	+/- 9.0	+/- 15.1	+/- 20.4	+/- 27.5	+/- 32.9	+/- 38.3	75
10 min	73.0	97.2	113.3	133.6	148.7	163.6	75
	+/- 5.7	+/- 9.6	+/- 13.0	+/- 17.5	+/- 20.9	+/- 24.4	75
15 min	59.0	79.4	92.8	109.9	122.6	135.1	75
	+/- 4.8	+/- 8.1	+/- 10.9	+/- 14.7	+/- 17.6	+/- 20.5	75
30 min	40.1	54.0	63.3	75.0	83.6	92.2	75
	+/- 3.3	+/- 5.5	+/- 7.5	+/- 10.1	+/- 12.0	+/- 14.0	75
1 h	25.4	34.3	40.1	47.6	53.1	58.5	76
	+/- 2.1	+/- 3.5	+/- 4.7	+/- 6.3	+/- 7.6	+/- 8.9	76
2 h	15.2	20.9	24.7	29.5	33.0	36.6	76
	+/- 1.3	+/- 2.3	+/- 3.0	+/- 4.1	+/- 4.9	+/- 5.7	76
6 h	6.5	8.9	10.4	12.4	13.8	15.3	76
	+/- 0.5	+/- 0.9	+/- 1.2	+/- 1.7	+/- 2.0	+/- 2.3	76
12 h	3.7	5.0	5.8	6.9	7.7	8.5	75
	+/- 0.3	+/- 0.5	+/- 0.7	+/- 0.9	+/- 1.1	+/- 1.3	75
24 h	2.1	2.8	3.3	3.9	4.4	4.9	76
	+/- 0.2	+/- 0.3	+/- 0.4	+/- 0.5	+/- 0.6	+/- 0.7	76

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Table 3 : Interpolation Equation / Équation d'interpolation: R = A*T^B

R = Interpolated Rainfall rate (mm/h)/Intensité interpolée de la pluie (mm/h)
RR = Rainfall rate (mm/h) / Intensité de la pluie (mm/h)
T = Rainfall duration (h) / Durée de la pluie (h)

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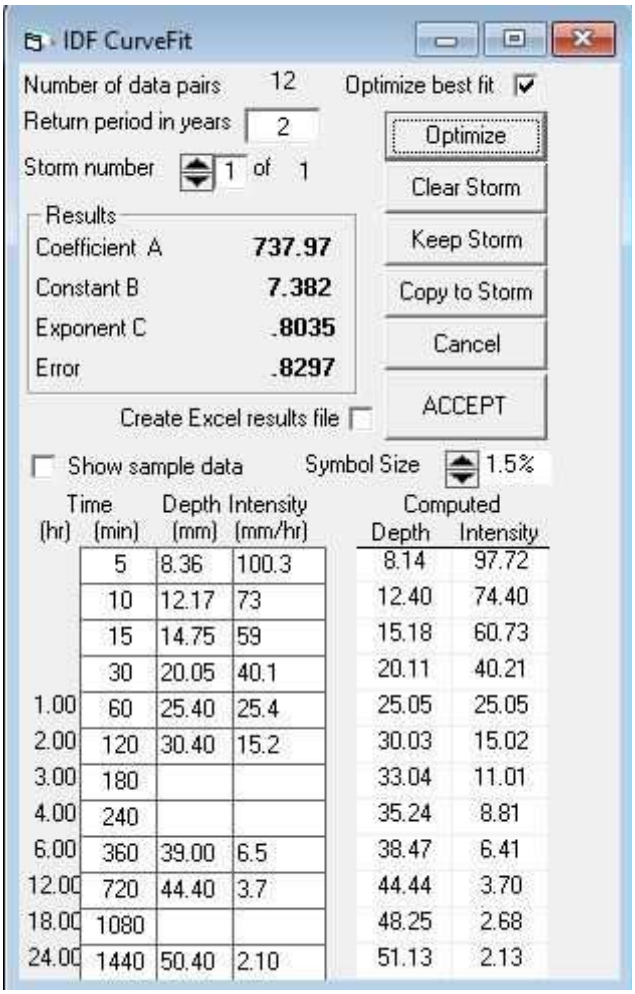
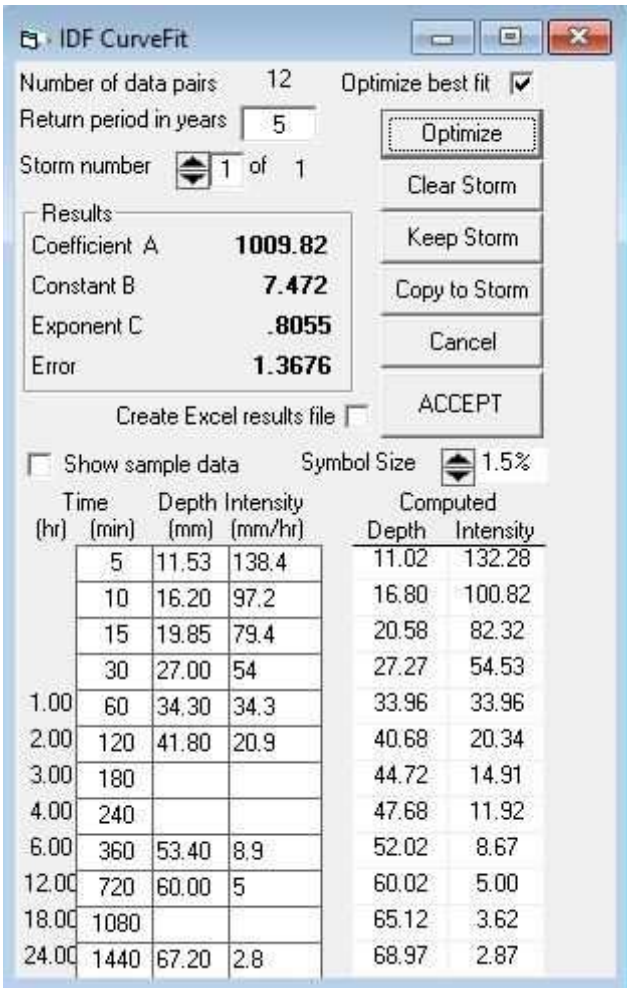
Statistics/Statistiques	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans
Mean of RR/Moyenne de RR	36.1	49.0	57.5	68.3	76.2	84.2
Std. Dev. /Écart-type (RR)	34.7	47.4	55.8	66.3	74.2	82.0
Std. Error/Erreur-type	8.9	11.3	12.9	14.9	16.4	17.8
Coefficient (A)	21.9	29.7	34.8	41.3	46.2	50.9
Exponent/Exposant (B)	-0.694	-0.694	-0.694	-0.694	-0.694	-0.694
Mean % Error/% erreur moyenne	9.9	10.0	10.0	10.0	10.1	10.1

2-YEAR IDF TO CHICAGO CONVERSION USING MIDUSS

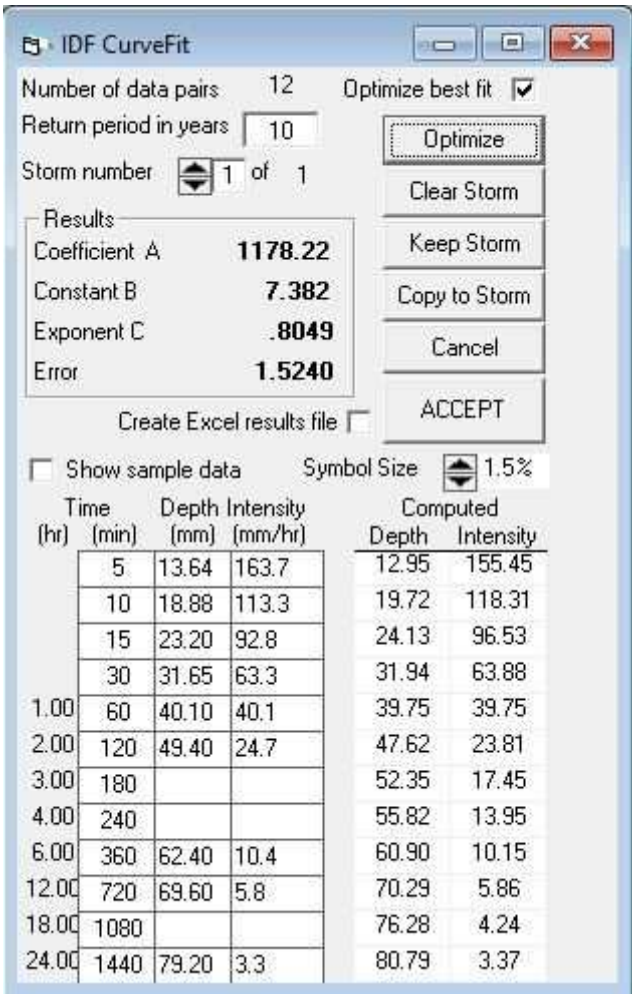


5-YEAR IDF TO CHICAGO CONVERSION USING MIDUSS



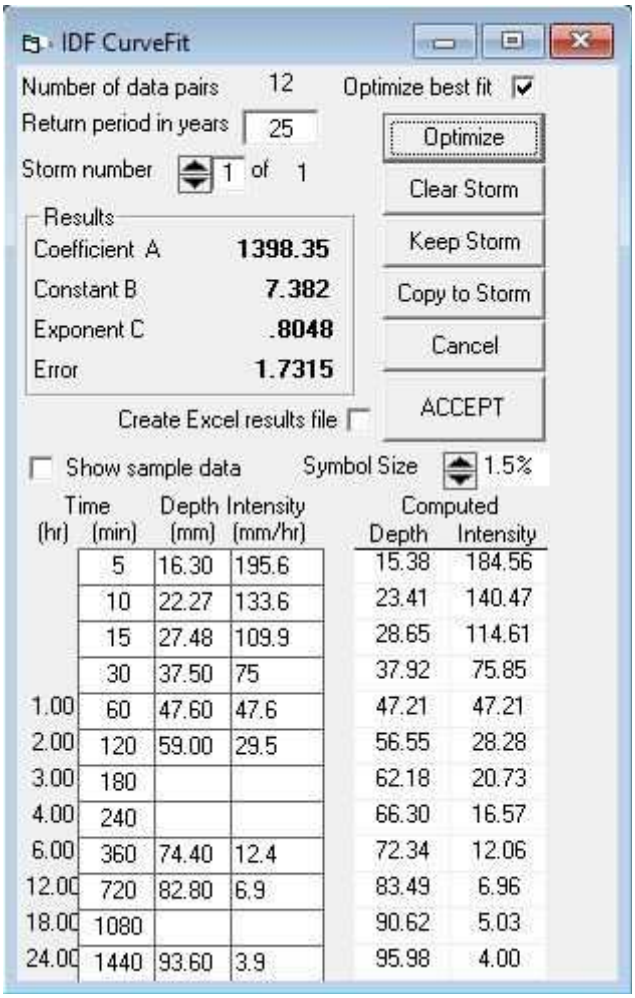
Time (hr)	Time (min)	Depth (mm)	Intensity (mm/hr)	Computed Depth	Computed Intensity
	5	11.53	138.4	11.02	132.28
	10	16.20	97.2	16.80	100.82
	15	19.85	79.4	20.58	82.32
	30	27.00	54	27.27	54.53
1.00	60	34.30	34.3	33.96	33.96
2.00	120	41.80	20.9	40.68	20.34
3.00	180			44.72	14.91
4.00	240			47.68	11.92
6.00	360	53.40	8.9	52.02	8.67
12.00	720	60.00	5	60.02	5.00
18.00	1080			65.12	3.62
24.00	1440	67.20	2.8	68.97	2.87

10-YEAR IDF TO CHICAGO CONVERSION USING MIDUSS

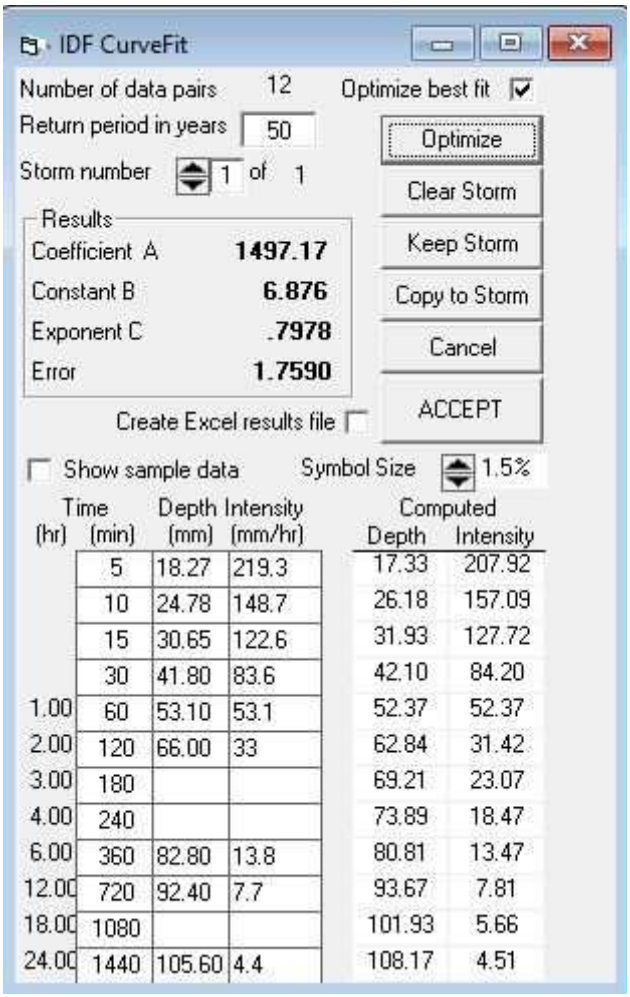


Time (hr)	Time (min)	Depth (mm)	Intensity (mm/hr)	Computed Depth	Computed Intensity
	5	13.64	163.7	12.95	155.45
	10	18.88	113.3	19.72	118.31
	15	23.20	92.8	24.13	96.53
	30	31.65	63.3	31.94	63.88
1.00	60	40.10	40.1	39.75	39.75
2.00	120	49.40	24.7	47.62	23.81
3.00	180			52.35	17.45
4.00	240			55.82	13.95
6.00	360	62.40	10.4	60.90	10.15
12.00	720	69.60	5.8	70.29	5.86
18.00	1080			76.28	4.24
24.00	1440	79.20	3.3	80.79	3.37

25-YEAR IDF TO CHICAGO CONVERSION USING MIDUSS

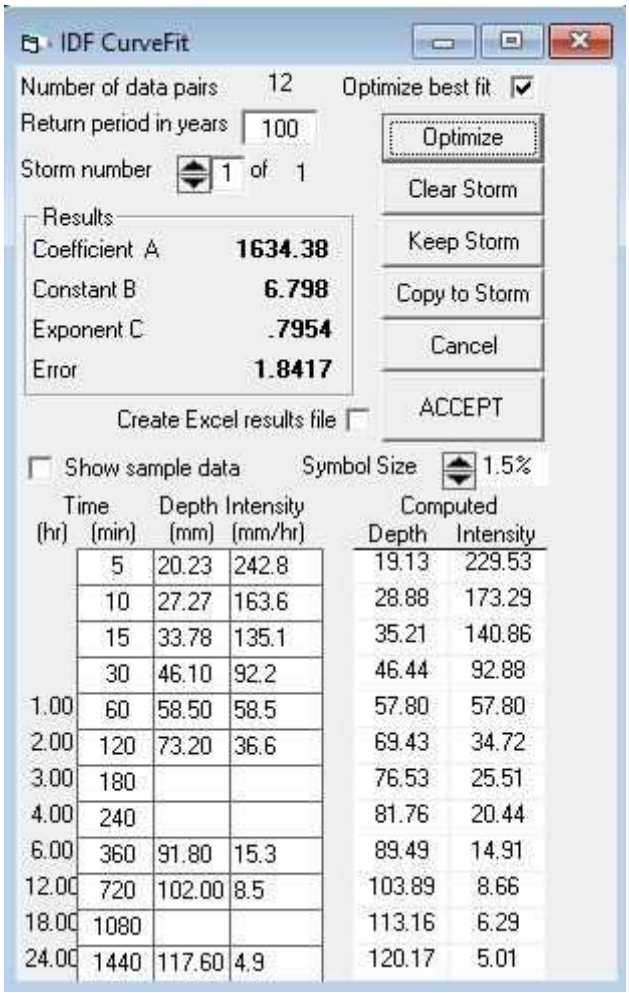


50-YEAR IDF TO CHICAGO CONVERSION USING MIDUSS



Time (hr)	Time (min)	Depth (mm)	Intensity (mm/hr)	Computed Depth	Computed Intensity
	5	18.27	219.3	17.33	207.92
	10	24.78	148.7	26.18	157.09
	15	30.65	122.6	31.93	127.72
	30	41.80	83.6	42.10	84.20
1.00	60	53.10	53.1	52.37	52.37
2.00	120	66.00	33	62.84	31.42
3.00	180			69.21	23.07
4.00	240			73.89	18.47
6.00	360	82.80	13.8	80.81	13.47
12.00	720	92.40	7.7	93.67	7.81
18.00	1080			101.93	5.66
24.00	1440	105.60	4.4	108.17	4.51

100-YEAR IDF TO CHICAGO CONVERSION USING MIDUSS



Time (hr)	Time (min)	Depth (mm)	Intensity (mm/hr)	Computed Depth	Computed Intensity
	5	20.23	242.8	19.13	229.53
	10	27.27	163.6	28.88	173.29
	15	33.78	135.1	35.21	140.86
	30	46.10	92.2	46.44	92.88
1.00	60	58.50	58.5	57.80	57.80
2.00	120	73.20	36.6	69.43	34.72
3.00	180			76.53	25.51
4.00	240			81.76	20.44
6.00	360	91.80	15.3	89.49	14.91
12.00	720	102.00	8.5	103.89	8.66
18.00	1080			113.16	6.29
24.00	1440	117.60	4.9	120.17	5.01

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CHICAGO HYETOGRAPH CREATION

DATE:	July 13, 2021
JOB No.:	SBM-18-0530
Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

ST THOMAS WPCP CHICAGO RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters A	B	C
2	737.970	7.382	0.8035
5	1009.820	7.472	0.8055
10	1178.220	7.382	0.8049
25	1398.350	7.382	0.8048
50	1497.170	6.876	0.7978
100	1634.380	6.798	0.7954

*Intensity i=A/(t+B)^C (mm/hr)

Starting Time=	0:00	
Time Step=	0:01	
r=	0.38	MTO DMM Section 8, Page 14
t_d=	1	
t_d * r=	0.38	
t_d * (1-r)=	0.62	
i_p=	133.70	peak rainfall intensity, mm/h
t_b=	68.4	time before the peak intensity, min
t_a=	111.6	time after the peak intensity, min

$$i_p = \frac{A}{(At+B)^C} = \text{peak rainfall intensity}$$

Before the peak:

$$i_b = \frac{A[((1-c)t_d/r) + B]}{[t_d/r + B]^{C+1}}$$

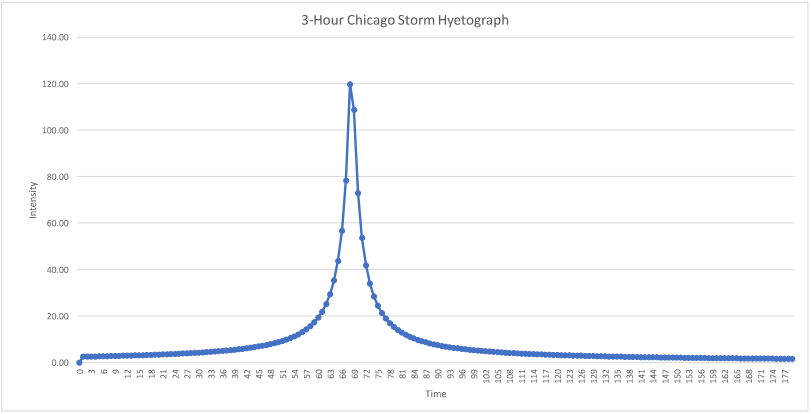
After the peak:

$$i_a = \frac{A[((1-c)t_d/(1-r)) + B]}{[t_d/(1-r) + B]^{C+1}}$$

Return Period (Years)	A,B,C Parameters A	B	C
2	737.970	7.382	0.804

2-Year Hyetograph

t_b OR t_a	Time (min)	Time (h:m)	Intensity
68.40	0	0:00	0.00
67.40	1	0:01	2.55
66.40	2	0:02	2.58
65.40	3	0:03	2.62
64.40	4	0:04	2.65
63.40	5	0:05	2.69
62.40	6	0:06	2.73
61.40	7	0:07	2.77
60.40	8	0:08	2.81
59.40	9	0:09	2.86
58.40	10	0:10	2.90
57.40	11	0:11	2.95
56.40	12	0:12	3.00
55.40	13	0:13	3.05
54.40	14	0:14	3.10
53.40	15	0:15	3.15
52.40	16	0:16	3.21
51.40	17	0:17	3.26
50.40	18	0:18	3.32
49.40	19	0:19	3.39
48.40	20	0:20	3.45
47.40	21	0:21	3.52
46.40	22	0:22	3.59
45.40	23	0:23	3.67
44.40	24	0:24	3.74
43.40	25	0:25	3.82
42.40	26	0:26	3.91
41.40	27	0:27	4.00
40.40	28	0:28	4.09
39.40	29	0:29	4.19
38.40	30	0:30	4.29
37.40	31	0:31	4.40
36.40	32	0:32	4.52
35.40	33	0:33	4.64
34.40	34	0:34	4.77
33.40	35	0:35	4.91
32.40	36	0:36	5.05
31.40	37	0:37	5.21
30.40	38	0:38	5.37
29.40	39	0:39	5.55
28.40	40	0:40	5.74
27.40	41	0:41	5.95
26.40	42	0:42	6.17
25.40	43	0:43	6.41
24.40	44	0:44	6.67
23.40	45	0:45	6.95
22.40	46	0:46	7.25
21.40	47	0:47	7.59
20.40	48	0:48	7.96
19.40	49	0:49	8.37
18.40	50	0:50	8.83
17.40	51	0:51	9.33
16.40	52	0:52	9.91
15.40	53	0:53	10.55
14.40	54	0:54	11.29
13.40	55	0:55	12.14
12.40	56	0:56	13.13
11.40	57	0:57	14.28
10.40	58	0:58	15.66
9.40	59	0:59	17.32
8.40	60	1:00	19.35
7.40	61	1:01	21.89
6.40	62	1:02	25.15



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5.40	63	1:03	29.45
4.40	64	1:04	35.34
3.40	65	1:05	43.79
2.40	66	1:06	56.72
1.40	67	1:07	78.34
0.40	68	1:08	119.69
0.60	69	1:09	108.77
1.60	70	1:10	72.96
2.60	71	1:11	53.63
3.60	72	1:12	41.83
4.60	73	1:13	34.00
5.60	74	1:14	28.49
6.60	75	1:15	24.43
7.60	76	1:16	21.34
8.60	77	1:17	18.91
9.60	78	1:18	16.96
10.60	79	1:19	15.36
11.60	80	1:20	14.04
12.60	81	1:21	12.92
13.60	82	1:22	11.96
14.60	83	1:23	11.14
15.60	84	1:24	10.42
16.60	85	1:25	9.79
17.60	86	1:26	9.23
18.60	87	1:27	8.73
19.60	88	1:28	8.28
20.60	89	1:29	7.88
21.60	90	1:30	7.52
22.60	91	1:31	7.19
23.60	92	1:32	6.89
24.60	93	1:33	6.61
25.60	94	1:34	6.36
26.60	95	1:35	6.12
27.60	96	1:36	5.91
28.60	97	1:37	5.70
29.60	98	1:38	5.52
30.60	99	1:39	5.34
31.60	100	1:40	5.18
32.60	101	1:41	5.02
33.60	102	1:42	4.88
34.60	103	1:43	4.74
35.60	104	1:44	4.62
36.60	105	1:45	4.49
37.60	106	1:46	4.38
38.60	107	1:47	4.27
39.60	108	1:48	4.17
40.60	109	1:49	4.07
41.60	110	1:50	3.98
42.60	111	1:51	3.89
43.60	112	1:52	3.81
44.60	113	1:53	3.73
45.60	114	1:54	3.65
46.60	115	1:55	3.58
47.60	116	1:56	3.51
48.60	117	1:57	3.44
49.60	118	1:58	3.37
50.60	119	1:59	3.31
51.60	120	2:00	3.25
52.60	121	2:01	3.20
53.60	122	2:02	3.14
54.60	123	2:03	3.09
55.60	124	2:04	3.04
56.60	125	2:05	2.99
57.60	126	2:06	2.94
58.60	127	2:07	2.89
59.60	128	2:08	2.85
60.60	129	2:09	2.81
61.60	130	2:10	2.76
62.60	131	2:11	2.72
63.60	132	2:12	2.68
64.60	133	2:13	2.65
65.60	134	2:14	2.61
66.60	135	2:15	2.57
67.60	136	2:16	2.54
68.60	137	2:17	2.51
69.60	138	2:18	2.47
70.60	139	2:19	2.44
71.60	140	2:20	2.41
72.60	141	2:21	2.38
73.60	142	2:22	2.35
74.60	143	2:23	2.32
75.60	144	2:24	2.30
76.60	145	2:25	2.27
77.60	146	2:26	2.24
78.60	147	2:27	2.22
79.60	148	2:28	2.19
80.60	149	2:29	2.17
81.60	150	2:30	2.14
82.60	151	2:31	2.12
83.60	152	2:32	2.10
84.60	153	2:33	2.08
85.60	154	2:34	2.05
86.60	155	2:35	2.03
87.60	156	2:36	2.01
88.60	157	2:37	1.99
89.60	158	2:38	1.97
90.60	159	2:39	1.95
91.60	160	2:40	1.93
92.60	161	2:41	1.92
93.60	162	2:42	1.90
94.60	163	2:43	1.88
95.60	164	2:44	1.86
96.60	165	2:45	1.85
97.60	166	2:46	1.83
98.60	167	2:47	1.81
99.60	168	2:48	1.80

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100.60	169	2:49	1.78
101.60	170	2:50	1.77
102.60	171	2:51	1.75
103.60	172	2:52	1.74
104.60	173	2:53	1.72
105.60	174	2:54	1.71
106.60	175	2:55	1.69
107.60	176	2:56	1.68
108.60	177	2:57	1.67
109.60	178	2:58	1.65
110.60	179	2:59	1.64
111.60	180	3:00	1.63

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CHICAGO HYETOGRAPH CREATION

DATE:	July 13, 2021
JOB No.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

ST THOMAS WPCP CHICAGO RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters A	B	C
2	737.970	7.382	0.8035
5	1009.820	7.472	0.8055
10	1178.220	7.382	0.8049
25	1398.350	7.382	0.8048
50	1497.170	6.876	0.7978
100	1634.380	6.798	0.7954

*Intensity i=A/(t+B)^C (mm/hr)

Starting Time= 0:00
Time Step= 0:01
r= 0.38 MTO DMM Section 8, Page 14
t_d= 1
t_d * r= 0.38
t_d * (1-r)= 0.62
i_p= 180.61 peak rainfall intensity, mm/h
t_b= 68.4 time before the peak intensity, min
t_a= 111.6 time after the peak intensity, min

$$i_p = \frac{A}{(\Delta_t + B)^c} = \text{peak rainfall intensity}$$

Before the peak:

$$i_b = \frac{A[((1-c)t_b/(1) + B]}{[t_b/r + B]^{1+c}}$$

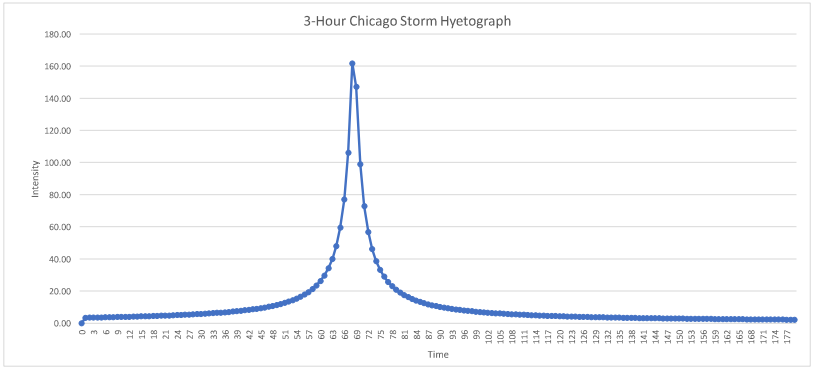
After the peak:

$$i_a = \frac{A[((1-c)t_a/(1-r)) + B]}{[t_a/(1-r) + B]^{1+c}}$$

Return Period (Years)	A,B,C Parameters A	B	C
5	1009.820	7.472	0.806

5-Year Hyetograph

t_b OR t_a	Time (min)	Time (h:m)	Intensity
68.40	0	0:00	0.00
67.40	1	0:01	3.42
66.40	2	0:02	3.47
65.40	3	0:03	3.52
64.40	4	0:04	3.57
63.40	5	0:05	3.62
62.40	6	0:06	3.67
61.40	7	0:07	3.73
60.40	8	0:08	3.78
59.40	9	0:09	3.84
58.40	10	0:10	3.90
57.40	11	0:11	3.97
56.40	12	0:12	4.03
55.40	13	0:13	4.10
54.40	14	0:14	4.17
53.40	15	0:15	4.24
52.40	16	0:16	4.32
51.40	17	0:17	4.39
50.40	18	0:18	4.48
49.40	19	0:19	4.56
48.40	20	0:20	4.65
47.40	21	0:21	4.74
46.40	22	0:22	4.84
45.40	23	0:23	4.94
44.40	24	0:24	5.04
43.40	25	0:25	5.15
42.40	26	0:26	5.27
41.40	27	0:27	5.39
40.40	28	0:28	5.51
39.40	29	0:29	5.65
38.40	30	0:30	5.79
37.40	31	0:31	5.94
36.40	32	0:32	6.09
35.40	33	0:33	6.26
34.40	34	0:34	6.43
33.40	35	0:35	6.62
32.40	36	0:36	6.82
31.40	37	0:37	7.03
30.40	38	0:38	7.25
29.40	39	0:39	7.49
28.40	40	0:40	7.75
27.40	41	0:41	8.03
26.40	42	0:42	8.33
25.40	43	0:43	8.65
24.40	44	0:44	9.00
23.40	45	0:45	9.39
22.40	46	0:46	9.80
21.40	47	0:47	10.26
20.40	48	0:48	10.76
19.40	49	0:49	11.32
18.40	50	0:50	11.94
17.40	51	0:51	12.63
16.40	52	0:52	13.41
15.40	53	0:53	14.29
14.40	54	0:54	15.29
13.40	55	0:55	16.45
12.40	56	0:56	17.79
11.40	57	0:57	19.36
10.40	58	0:58	21.24
9.40	59	0:59	23.49
8.40	60	1:00	26.26
7.40	61	1:01	29.72
6.40	62	1:02	34.15



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5.40	63	1:03	40.00
4.40	64	1:04	48.00
3.40	65	1:05	59.47
2.40	66	1:06	76.99
1.40	67	1:07	106.21
0.40	68	1:08	161.84
0.60	69	1:09	147.18
1.60	70	1:10	98.95
2.60	71	1:11	72.80
3.60	72	1:12	56.80
4.60	73	1:13	46.17
5.60	74	1:14	38.68
6.60	75	1:15	33.17
7.60	76	1:16	28.96
8.60	77	1:17	25.66
9.60	78	1:18	23.00
10.60	79	1:19	20.83
11.60	80	1:20	19.03
12.60	81	1:21	17.50
13.60	82	1:22	16.20
14.60	83	1:23	15.08
15.60	84	1:24	14.10
16.60	85	1:25	13.25
17.60	86	1:26	12.49
18.60	87	1:27	11.81
19.60	88	1:28	11.21
20.60	89	1:29	10.66
21.60	90	1:30	10.17
22.60	91	1:31	9.72
23.60	92	1:32	9.31
24.60	93	1:33	8.93
25.60	94	1:34	8.59
26.60	95	1:35	8.27
27.60	96	1:36	7.97
28.60	97	1:37	7.70
29.60	98	1:38	7.44
30.60	99	1:39	7.21
31.60	100	1:40	6.98
32.60	101	1:41	6.78
33.60	102	1:42	6.58
34.60	103	1:43	6.40
35.60	104	1:44	6.22
36.60	105	1:45	6.06
37.60	106	1:46	5.91
38.60	107	1:47	5.76
39.60	108	1:48	5.62
40.60	109	1:49	5.49
41.60	110	1:50	5.36
42.60	111	1:51	5.24
43.60	112	1:52	5.13
44.60	113	1:53	5.02
45.60	114	1:54	4.92
46.60	115	1:55	4.82
47.60	116	1:56	4.72
48.60	117	1:57	4.63
49.60	118	1:58	4.54
50.60	119	1:59	4.46
51.60	120	2:00	4.38
52.60	121	2:01	4.30
53.60	122	2:02	4.23
54.60	123	2:03	4.15
55.60	124	2:04	4.09
56.60	125	2:05	4.02
57.60	126	2:06	3.95
58.60	127	2:07	3.89
59.60	128	2:08	3.83
60.60	129	2:09	3.77
61.60	130	2:10	3.72
62.60	131	2:11	3.66
63.60	132	2:12	3.61
64.60	133	2:13	3.56
65.60	134	2:14	3.51
66.60	135	2:15	3.46
67.60	136	2:16	3.41
68.60	137	2:17	3.37
69.60	138	2:18	3.33
70.60	139	2:19	3.28
71.60	140	2:20	3.24
72.60	141	2:21	3.20
73.60	142	2:22	3.16
74.60	143	2:23	3.12
75.60	144	2:24	3.09
76.60	145	2:25	3.05
77.60	146	2:26	3.01
78.60	147	2:27	2.98
79.60	148	2:28	2.95
80.60	149	2:29	2.91
81.60	150	2:30	2.88
82.60	151	2:31	2.85
83.60	152	2:32	2.82
84.60	153	2:33	2.79
85.60	154	2:34	2.76
86.60	155	2:35	2.73
87.60	156	2:36	2.70
88.60	157	2:37	2.68
89.60	158	2:38	2.65
90.60	159	2:39	2.62
91.60	160	2:40	2.60
92.60	161	2:41	2.57
93.60	162	2:42	2.55
94.60	163	2:43	2.52
95.60	164	2:44	2.50
96.60	165	2:45	2.48
97.60	166	2:46	2.46
98.60	167	2:47	2.43
99.60	168	2:48	2.41

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100.60	169	2:49	2.39
101.60	170	2:50	2.37
102.60	171	2:51	2.35
103.60	172	2:52	2.33
104.60	173	2:53	2.31
105.60	174	2:54	2.29
106.60	175	2:55	2.27
107.60	176	2:56	2.25
108.60	177	2:57	2.24
109.60	178	2:58	2.22
110.60	179	2:59	2.20
111.60	180	3:00	2.18

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CHICAGO HYETOGRAPH CREATION

DATE:	July 13, 2021
JOB No.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

ST THOMAS WPCP CHICAGO RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters A	B	C
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5	1009.820	7.472	0.8055
10	1178.220	7.382	0.8049
25	1398.350	7.382	0.8048
50	1497.170	6.876	0.7978
100	1634.380	6.798	0.7954

*Intensity i=A/(t+B)^C (mm/hr)

Starting Time= 0:00
Time Step= 0:01
r= 0.38 MTO DMM Section 8, Page 14
t_d= 1
t_d * r= 0.38
t_d * (1-r)= 0.62
i_p= 212.83 peak rainfall intensity, mm/h
t_b= 68.4 time before the peak intensity, min
t_a= 111.6 time after the peak intensity, min

$$i_p = \frac{A}{(\Delta t + B)^c} \quad \text{– peak rainfall intensity}$$

Before the peak:

$$i_b = \frac{A[(1-c)t_b/r) + B]}{[t_b/r + B]^{1+c}}$$

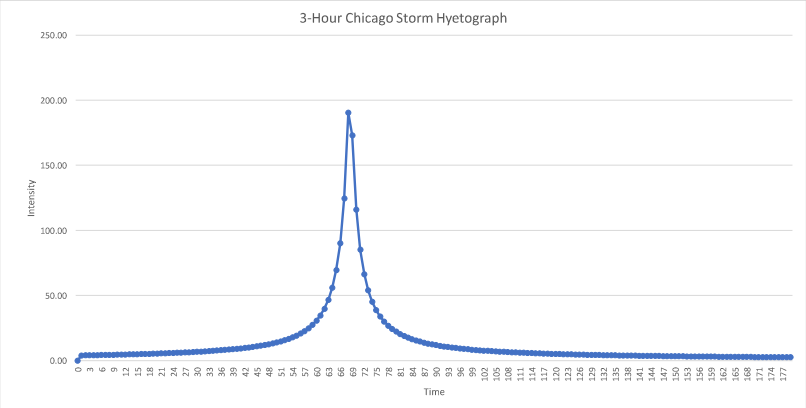
After the peak:

$$i_a = \frac{A[((1-c)t_a/(1-r)) + B]}{[t_a/(1-r) - B]^{1+c}}$$

Return Period (Years)	A,B,C Parameters A	B	C
10	1178.220	7.382	0.805

10-Year Hyetograph

t_b OR t_a	Time (min)	Time (h:m)	Intensity
68.40	0	0:00	0.00
67.40	1	0:01	4.01
66.40	2	0:02	4.07
65.40	3	0:03	4.12
64.40	4	0:04	4.18
63.40	5	0:05	4.24
62.40	6	0:06	4.30
61.40	7	0:07	4.37
60.40	8	0:08	4.43
59.40	9	0:09	4.50
58.40	10	0:10	4.57
57.40	11	0:11	4.65
56.40	12	0:12	4.72
55.40	13	0:13	4.80
54.40	14	0:14	4.88
53.40	15	0:15	4.97
52.40	16	0:16	5.06
51.40	17	0:17	5.15
50.40	18	0:18	5.24
49.40	19	0:19	5.34
48.40	20	0:20	5.44
47.40	21	0:21	5.55
46.40	22	0:22	5.66
45.40	23	0:23	5.78
44.40	24	0:24	5.90
43.40	25	0:25	6.03
42.40	26	0:26	6.17
41.40	27	0:27	6.31
40.40	28	0:28	6.45
39.40	29	0:29	6.61
38.40	30	0:30	6.77
37.40	31	0:31	6.95
36.40	32	0:32	7.13
35.40	33	0:33	7.32
34.40	34	0:34	7.53
33.40	35	0:35	7.75
32.40	36	0:36	7.98
31.40	37	0:37	8.22
30.40	38	0:38	8.49
29.40	39	0:39	8.77
28.40	40	0:40	9.07
27.40	41	0:41	9.39
26.40	42	0:42	9.74
25.40	43	0:43	10.12
24.40	44	0:44	10.53
23.40	45	0:45	10.98
22.40	46	0:46	11.46
21.40	47	0:47	12.00
20.40	48	0:48	12.58
19.40	49	0:49	13.23
18.40	50	0:50	13.96
17.40	51	0:51	14.76
16.40	52	0:52	15.67
15.40	53	0:53	16.70
14.40	54	0:54	17.87
13.40	55	0:55	19.22
12.40	56	0:56	20.78
11.40	57	0:57	22.62
10.40	58	0:58	24.80
9.40	59	0:59	27.44
8.40	60	1:00	30.67
7.40	61	1:01	34.71
6.40	62	1:02	39.89



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5.40	63	1:03	46.73
4.40	64	1:04	56.10
3.40	65	1:05	69.55
2.40	66	1:06	90.14
1.40	67	1:07	124.58
0.40	68	1:08	190.49
0.60	69	1:09	173.08
1.60	70	1:10	116.01
2.60	71	1:11	85.21
3.60	72	1:12	66.42
4.60	73	1:13	53.96
5.60	74	1:14	45.20
6.60	75	1:15	38.74
7.60	76	1:16	33.82
8.60	77	1:17	29.96
9.60	78	1:18	26.87
10.60	79	1:19	24.33
11.60	80	1:20	22.23
12.60	81	1:21	20.45
13.60	82	1:22	18.93
14.60	83	1:23	17.62
15.60	84	1:24	16.48
16.60	85	1:25	15.48
17.60	86	1:26	14.59
18.60	87	1:27	13.80
19.60	88	1:28	13.10
20.60	89	1:29	12.46
21.60	90	1:30	11.89
22.60	91	1:31	11.36
23.60	92	1:32	10.88
24.60	93	1:33	10.45
25.60	94	1:34	10.04
26.60	95	1:35	9.67
27.60	96	1:36	9.33
28.60	97	1:37	9.01
29.60	98	1:38	8.71
30.60	99	1:39	8.43
31.60	100	1:40	8.17
32.60	101	1:41	7.93
33.60	102	1:42	7.70
34.60	103	1:43	7.49
35.60	104	1:44	7.28
36.60	105	1:45	7.09
37.60	106	1:46	6.91
38.60	107	1:47	6.74
39.60	108	1:48	6.58
40.60	109	1:49	6.42
41.60	110	1:50	6.28
42.60	111	1:51	6.14
43.60	112	1:52	6.01
44.60	113	1:53	5.88
45.60	114	1:54	5.76
46.60	115	1:55	5.64
47.60	116	1:56	5.53
48.60	117	1:57	5.42
49.60	118	1:58	5.32
50.60	119	1:59	5.22
51.60	120	2:00	5.13
52.60	121	2:01	5.04
53.60	122	2:02	4.95
54.60	123	2:03	4.87
55.60	124	2:04	4.79
56.60	125	2:05	4.71
57.60	126	2:06	4.63
58.60	127	2:07	4.56
59.60	128	2:08	4.49
60.60	129	2:09	4.42
61.60	130	2:10	4.36
62.60	131	2:11	4.29
63.60	132	2:12	4.23
64.60	133	2:13	4.17
65.60	134	2:14	4.11
66.60	135	2:15	4.06
67.60	136	2:16	4.00
68.60	137	2:17	3.95
69.60	138	2:18	3.90
70.60	139	2:19	3.85
71.60	140	2:20	3.80
72.60	141	2:21	3.75
73.60	142	2:22	3.70
74.60	143	2:23	3.66
75.60	144	2:24	3.62
76.60	145	2:25	3.57
77.60	146	2:26	3.53
78.60	147	2:27	3.49
79.60	148	2:28	3.45
80.60	149	2:29	3.41
81.60	150	2:30	3.38
82.60	151	2:31	3.34
83.60	152	2:32	3.30
84.60	153	2:33	3.27
85.60	154	2:34	3.24
86.60	155	2:35	3.20
87.60	156	2:36	3.17
88.60	157	2:37	3.14
89.60	158	2:38	3.11
90.60	159	2:39	3.08
91.60	160	2:40	3.05
92.60	161	2:41	3.02
93.60	162	2:42	2.99
94.60	163	2:43	2.96
95.60	164	2:44	2.93
96.60	165	2:45	2.91
97.60	166	2:46	2.88
98.60	167	2:47	2.85
99.60	168	2:48	2.83

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100.60	169	2:49	2.80
101.60	170	2:50	2.78
102.60	171	2:51	2.76
103.60	172	2:52	2.73
104.60	173	2:53	2.71
105.60	174	2:54	2.69
106.60	175	2:55	2.67
107.60	176	2:56	2.64
108.60	177	2:57	2.62
109.60	178	2:58	2.60
110.60	179	2:59	2.58
111.60	180	3:00	2.56

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CHICAGO HYETOGRAPH CREATION

DATE:	July 13, 2021
JOB No.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

ST THOMAS WPCP CHICAGO RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters A	B	C
2	737.970	7.382	0.8035
5	1009.820	7.472	0.8055
10	1178.220	7.382	0.8049
25	1398.350	7.382	0.8048
50	1497.170	6.876	0.7978
100	1634.380	6.798	0.7954

*Intensity i=A/(t+B)^C (mm/hr)

Starting Time= 0:00
Time Step= 0:01

r= 0.38 MTO DMM Section 8, Page 14

t_d= 1

t_d * r= 0.38

t_d * (1-r)= 0.62

i_p= 252.64 peak rainfall intensity, mm/h

t_b= 68.4 time before the peak intensity, min

t_a= 111.6 time after the peak intensity, min

$$i_p = \frac{A}{(\Delta_t + B)^C} = \text{peak rainfall intensity}$$

Before the peak:

$$i_b = \frac{A[((1-c)t_d/r) + B]}{[t_d/r + B]^{1+c}}$$

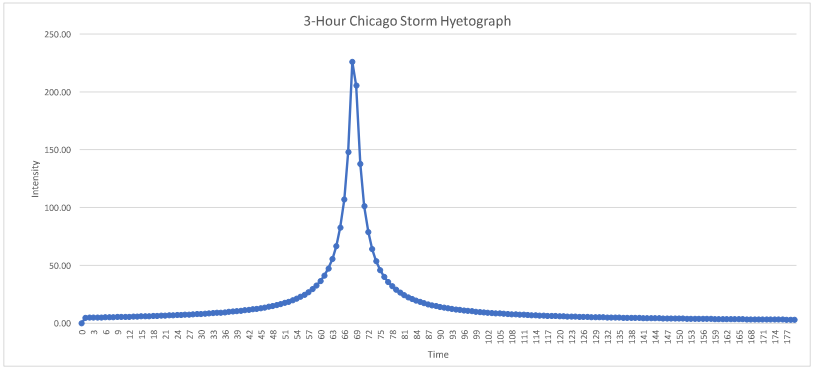
After the peak:

$$i_a = \frac{A[((1-c)t_d/(1-r)) + B]}{[t_d/(1-r) - B]^{1+c}}$$

Return Period (Years)	A,B,C Parameters A	B	C
25	1398.350	7.382	0.805

25-Year Hyetograph

t_b OR t_a	Time (min)	Time (h:m)	Intensity
68.40	0	0:00	0.00
67.40	1	0:01	4.77
66.40	2	0:02	4.83
65.40	3	0:03	4.90
64.40	4	0:04	4.97
63.40	5	0:05	5.04
62.40	6	0:06	5.11
61.40	7	0:07	5.19
60.40	8	0:08	5.27
59.40	9	0:09	5.35
58.40	10	0:10	5.43
57.40	11	0:11	5.52
56.40	12	0:12	5.61
55.40	13	0:13	5.70
54.40	14	0:14	5.80
53.40	15	0:15	5.90
52.40	16	0:16	6.01
51.40	17	0:17	6.11
50.40	18	0:18	6.23
49.40	19	0:19	6.34
48.40	20	0:20	6.47
47.40	21	0:21	6.59
46.40	22	0:22	6.73
45.40	23	0:23	6.87
44.40	24	0:24	7.01
43.40	25	0:25	7.16
42.40	26	0:26	7.32
41.40	27	0:27	7.49
40.40	28	0:28	7.67
39.40	29	0:29	7.85
38.40	30	0:30	8.05
37.40	31	0:31	8.25
36.40	32	0:32	8.47
35.40	33	0:33	8.70
34.40	34	0:34	8.94
33.40	35	0:35	9.20
32.40	36	0:36	9.47
31.40	37	0:37	9.77
30.40	38	0:38	10.08
29.40	39	0:39	10.41
28.40	40	0:40	10.77
27.40	41	0:41	11.16
26.40	42	0:42	11.57
25.40	43	0:43	12.02
24.40	44	0:44	12.51
23.40	45	0:45	13.04
22.40	46	0:46	13.61
21.40	47	0:47	14.25
20.40	48	0:48	14.95
19.40	49	0:49	15.72
18.40	50	0:50	16.57
17.40	51	0:51	17.53
16.40	52	0:52	18.61
15.40	53	0:53	19.83
14.40	54	0:54	21.22
13.40	55	0:55	22.82
12.40	56	0:56	24.68
11.40	57	0:57	26.86
10.40	58	0:58	29.45
9.40	59	0:59	32.58
8.40	60	1:00	36.42
7.40	61	1:01	41.22
6.40	62	1:02	47.37



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5.40	63	1:03	55.49
4.40	64	1:04	66.61
3.40	65	1:05	82.58
2.40	66	1:06	107.01
1.40	67	1:07	147.90
0.40	68	1:08	226.13
0.60	69	1:09	205.47
1.60	70	1:10	137.72
2.60	71	1:11	101.17
3.60	72	1:12	78.86
4.60	73	1:13	64.07
5.60	74	1:14	53.66
6.60	75	1:15	46.00
7.60	76	1:16	40.16
8.60	77	1:17	35.58
9.60	78	1:18	31.90
10.60	79	1:19	28.90
11.60	80	1:20	26.39
12.60	81	1:21	24.28
13.60	82	1:22	22.48
14.60	83	1:23	20.93
15.60	84	1:24	19.57
16.60	85	1:25	18.38
17.60	86	1:26	17.33
18.60	87	1:27	16.40
19.60	88	1:28	15.56
20.60	89	1:29	14.80
21.60	90	1:30	14.12
22.60	91	1:31	13.49
23.60	92	1:32	12.93
24.60	93	1:33	12.41
25.60	94	1:34	11.93
26.60	95	1:35	11.49
27.60	96	1:36	11.08
28.60	97	1:37	10.70
29.60	98	1:38	10.34
30.60	99	1:39	10.02
31.60	100	1:40	9.71
32.60	101	1:41	9.42
33.60	102	1:42	9.15
34.60	103	1:43	8.89
35.60	104	1:44	8.65
36.60	105	1:45	8.43
37.60	106	1:46	8.21
38.60	107	1:47	8.01
39.60	108	1:48	7.81
40.60	109	1:49	7.63
41.60	110	1:50	7.46
42.60	111	1:51	7.29
43.60	112	1:52	7.13
44.60	113	1:53	6.98
45.60	114	1:54	6.84
46.60	115	1:55	6.70
47.60	116	1:56	6.57
48.60	117	1:57	6.44
49.60	118	1:58	6.32
50.60	119	1:59	6.20
51.60	120	2:00	6.09
52.60	121	2:01	5.98
53.60	122	2:02	5.88
54.60	123	2:03	5.78
55.60	124	2:04	5.69
56.60	125	2:05	5.59
57.60	126	2:06	5.50
58.60	127	2:07	5.42
59.60	128	2:08	5.33
60.60	129	2:09	5.25
61.60	130	2:10	5.17
62.60	131	2:11	5.10
63.60	132	2:12	5.02
64.60	133	2:13	4.95
65.60	134	2:14	4.89
66.60	135	2:15	4.82
67.60	136	2:16	4.75
68.60	137	2:17	4.69
69.60	138	2:18	4.63
70.60	139	2:19	4.57
71.60	140	2:20	4.51
72.60	141	2:21	4.46
73.60	142	2:22	4.40
74.60	143	2:23	4.35
75.60	144	2:24	4.30
76.60	145	2:25	4.25
77.60	146	2:26	4.20
78.60	147	2:27	4.15
79.60	148	2:28	4.10
80.60	149	2:29	4.06
81.60	150	2:30	4.01
82.60	151	2:31	3.97
83.60	152	2:32	3.93
84.60	153	2:33	3.88
85.60	154	2:34	3.84
86.60	155	2:35	3.80
87.60	156	2:36	3.77
88.60	157	2:37	3.73
89.60	158	2:38	3.69
90.60	159	2:39	3.65
91.60	160	2:40	3.62
92.60	161	2:41	3.58
93.60	162	2:42	3.55
94.60	163	2:43	3.52
95.60	164	2:44	3.48
96.60	165	2:45	3.45
97.60	166	2:46	3.42
98.60	167	2:47	3.39
99.60	168	2:48	3.36

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100.60	169	2:49	3.33
101.60	170	2:50	3.30
102.60	171	2:51	3.27
103.60	172	2:52	3.25
104.60	173	2:53	3.22
105.60	174	2:54	3.19
106.60	175	2:55	3.17
107.60	176	2:56	3.14
108.60	177	2:57	3.11
109.60	178	2:58	3.09
110.60	179	2:59	3.07
111.60	180	3:00	3.04

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CHICAGO HYETOGRAPH CREATION

DATE:	July 13, 2021
JOB No.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

ST THOMAS WPCP CHICAGO RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters A	B	C
2	737.970	7.382	0.8035
5	1009.820	7.472	0.8055
10	1178.220	7.382	0.8049
25	1398.350	7.382	0.8048
50	1497.170	6.876	0.7978
100	1634.380	6.798	0.7954

*Intensity i=A/(t+B)^C (mm/hr)

Starting Time= 0:00
Time Step= 0:01
r= 0.38 MTO DMM Section 8, Page 14
t_d= 1
t_d * r= 0.38
t_d * (1-r)= 0.62
i_p= 288.53 peak rainfall intensity, mm/h
t_b= 68.4 time before the peak intensity, min
t_a= 111.6 time after the peak intensity, min

$$i_p = \frac{A}{(\Delta_t + B)^C} = \text{peak rainfall intensity}$$

Before the peak:

$$i_b = \frac{A[(1-c)t_b/r) + B]}{[t_b/r + B]^{1+C}}$$

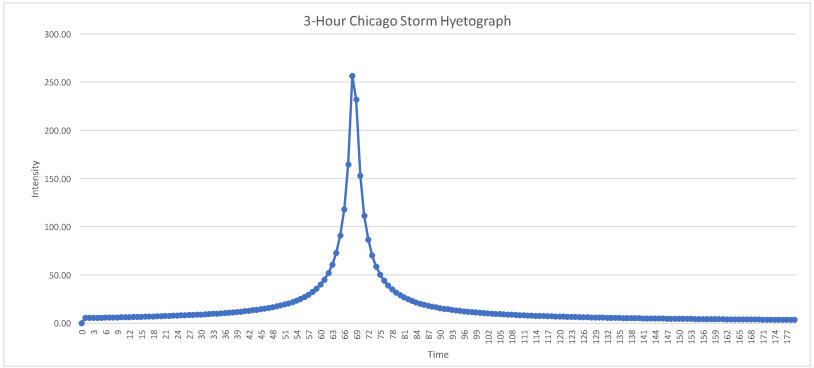
After the peak:

$$i_a = \frac{A[((1-c)t_a/(1-r)) + B]}{[t_a/(1-r) - B]^{1+C}}$$

Return Period (Years)	A,B,C Parameters A	B	C
50	1497.170	6.876	0.798

50-Year Hyetograph

t_b OR t_a	Time (min)	Time (h:m)	Intensity
68.40	0	0:00	0.00
67.40	1	0:01	5.41
66.40	2	0:02	5.48
65.40	3	0:03	5.56
64.40	4	0:04	5.64
63.40	5	0:05	5.72
62.40	6	0:06	5.80
61.40	7	0:07	5.88
60.40	8	0:08	5.97
59.40	9	0:09	6.06
58.40	10	0:10	6.15
57.40	11	0:11	6.25
56.40	12	0:12	6.35
55.40	13	0:13	6.46
54.40	14	0:14	6.56
53.40	15	0:15	6.67
52.40	16	0:16	6.79
51.40	17	0:17	6.91
50.40	18	0:18	7.04
49.40	19	0:19	7.17
48.40	20	0:20	7.30
47.40	21	0:21	7.44
46.40	22	0:22	7.59
45.40	23	0:23	7.74
44.40	24	0:24	7.90
43.40	25	0:25	8.07
42.40	26	0:26	8.25
41.40	27	0:27	8.43
40.40	28	0:28	8.63
39.40	29	0:29	8.83
38.40	30	0:30	9.04
37.40	31	0:31	9.27
36.40	32	0:32	9.51
35.40	33	0:33	9.76
34.40	34	0:34	10.03
33.40	35	0:35	10.31
32.40	36	0:36	10.61
31.40	37	0:37	10.94
30.40	38	0:38	11.28
29.40	39	0:39	11.64
28.40	40	0:40	12.04
27.40	41	0:41	12.46
26.40	42	0:42	12.91
25.40	43	0:43	13.40
24.40	44	0:44	13.93
23.40	45	0:45	14.51
22.40	46	0:46	15.14
21.40	47	0:47	15.83
20.40	48	0:48	16.60
19.40	49	0:49	17.44
18.40	50	0:50	18.37
17.40	51	0:51	19.41
16.40	52	0:52	20.58
15.40	53	0:53	21.91
14.40	54	0:54	23.42
13.40	55	0:55	25.16
12.40	56	0:56	27.18
11.40	57	0:57	29.55
10.40	58	0:58	32.37
9.40	59	0:59	35.77
8.40	60	1:00	39.95
7.40	61	1:01	45.18
6.40	62	1:02	51.90



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5.40	63	1:03	60.81
4.40	64	1:04	73.06
3.40	65	1:05	90.77
2.40	66	1:06	118.17
1.40	67	1:07	164.79
0.40	68	1:08	256.61
0.60	69	1:09	232.04
1.60	70	1:10	153.10
2.60	71	1:11	111.58
3.60	72	1:12	86.63
4.60	73	1:13	70.26
5.60	74	1:14	58.81
6.60	75	1:15	50.41
7.60	76	1:16	44.03
8.60	77	1:17	39.04
9.60	78	1:18	35.04
10.60	79	1:19	31.77
11.60	80	1:20	29.05
12.60	81	1:21	26.75
13.60	82	1:22	24.79
14.60	83	1:23	23.10
15.60	84	1:24	21.63
16.60	85	1:25	20.34
17.60	86	1:26	19.19
18.60	87	1:27	18.17
19.60	88	1:28	17.26
20.60	89	1:29	16.44
21.60	90	1:30	15.69
22.60	91	1:31	15.01
23.60	92	1:32	14.39
24.60	93	1:33	13.82
25.60	94	1:34	13.30
26.60	95	1:35	12.82
27.60	96	1:36	12.37
28.60	97	1:37	11.96
29.60	98	1:38	11.57
30.60	99	1:39	11.21
31.60	100	1:40	10.87
32.60	101	1:41	10.55
33.60	102	1:42	10.26
34.60	103	1:43	9.97
35.60	104	1:44	9.71
36.60	105	1:45	9.46
37.60	106	1:46	9.22
38.60	107	1:47	9.00
39.60	108	1:48	8.79
40.60	109	1:49	8.59
41.60	110	1:50	8.39
42.60	111	1:51	8.21
43.60	112	1:52	8.04
44.60	113	1:53	7.87
45.60	114	1:54	7.71
46.60	115	1:55	7.56
47.60	116	1:56	7.41
48.60	117	1:57	7.27
49.60	118	1:58	7.14
50.60	119	1:59	7.01
51.60	120	2:00	6.89
52.60	121	2:01	6.77
53.60	122	2:02	6.65
54.60	123	2:03	6.54
55.60	124	2:04	6.43
56.60	125	2:05	6.33
57.60	126	2:06	6.23
58.60	127	2:07	6.14
59.60	128	2:08	6.04
60.60	129	2:09	5.95
61.60	130	2:10	5.87
62.60	131	2:11	5.78
63.60	132	2:12	5.70
64.60	133	2:13	5.62
65.60	134	2:14	5.54
66.60	135	2:15	5.47
67.60	136	2:16	5.40
68.60	137	2:17	5.33
69.60	138	2:18	5.26
70.60	139	2:19	5.19
71.60	140	2:20	5.13
72.60	141	2:21	5.07
73.60	142	2:22	5.01
74.60	143	2:23	4.95
75.60	144	2:24	4.89
76.60	145	2:25	4.83
77.60	146	2:26	4.78
78.60	147	2:27	4.72
79.60	148	2:28	4.67
80.60	149	2:29	4.62
81.60	150	2:30	4.57
82.60	151	2:31	4.52
83.60	152	2:32	4.47
84.60	153	2:33	4.43
85.60	154	2:34	4.38
86.60	155	2:35	4.34
87.60	156	2:36	4.29
88.60	157	2:37	4.25
89.60	158	2:38	4.21
90.60	159	2:39	4.17
91.60	160	2:40	4.13
92.60	161	2:41	4.09
93.60	162	2:42	4.05
94.60	163	2:43	4.02
95.60	164	2:44	3.98
96.60	165	2:45	3.94
97.60	166	2:46	3.91
98.60	167	2:47	3.87
99.60	168	2:48	3.84

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100.60	169	2:49	3.81
101.60	170	2:50	3.77
102.60	171	2:51	3.74
103.60	172	2:52	3.71
104.60	173	2:53	3.68
105.60	174	2:54	3.65
106.60	175	2:55	3.62
107.60	176	2:56	3.59
108.60	177	2:57	3.56
109.60	178	2:58	3.54
110.60	179	2:59	3.51
111.60	180	3:00	3.48

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CHICAGO HYETOGRAPH CREATION

DATE:	July 13, 2021
JOB No.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

ST THOMAS WPCP CHICAGO RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters A	B	C
2	737.970	7.382	0.8035
5	1009.820	7.472	0.8055
10	1178.220	7.382	0.8049
25	1398.350	7.382	0.8048
50	1497.170	6.876	0.7978
100	1634.380	6.798	0.7954

*Intensity i=A/(t+B)^C (mm/hr)

Starting Time= 0:00
Time Step= 0:01
r= 0.38 MTO DMM Section 8, Page 14
t_d= 1
t_d * r= 0.38
t_d * (1-r)= 0.62
i_p= 319.06 peak rainfall intensity, mm/h
t_b= 68.4 time before the peak intensity, min
t_a= 111.6 time after the peak intensity, min

$$i_p = \frac{A}{(\Delta_t + B)^C} = \text{peak rainfall intensity}$$

Before the peak:

$$i_b = \frac{A[(1-c)t_b/r) + B]}{[t_b/r + B]^{1+c}}$$

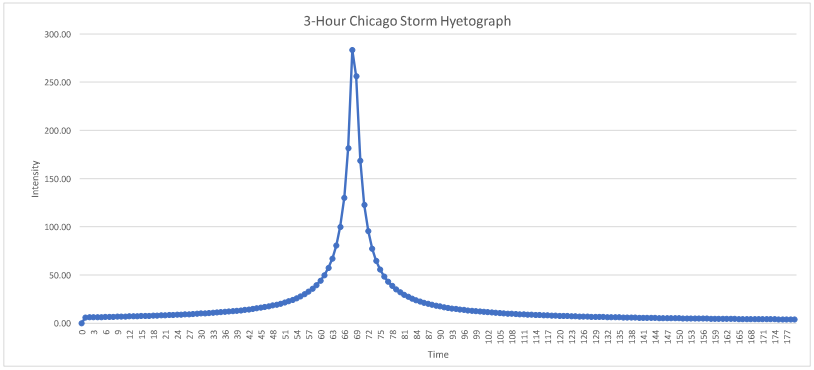
After the peak:

$$i_a = \frac{A[((1-c)t_a/(1-r)) + B]}{[t_a/(1-r) - B]^{1+c}}$$

Return Period (Years)	A,B,C Parameters A	B	C
100	1634.380	6.798	0.795

100-Year Hyetograph

t_b OR t_a	Time (min)	Time (h:m)	Intensity
68.40	0	0:00	0.00
67.40	1	0:01	6.04
66.40	2	0:02	6.12
65.40	3	0:03	6.20
64.40	4	0:04	6.29
63.40	5	0:05	6.37
62.40	6	0:06	6.46
61.40	7	0:07	6.56
60.40	8	0:08	6.66
59.40	9	0:09	6.76
58.40	10	0:10	6.86
57.40	11	0:11	6.97
56.40	12	0:12	7.08
55.40	13	0:13	7.19
54.40	14	0:14	7.31
53.40	15	0:15	7.43
52.40	16	0:16	7.56
51.40	17	0:17	7.70
50.40	18	0:18	7.83
49.40	19	0:19	7.98
48.40	20	0:20	8.13
47.40	21	0:21	8.28
46.40	22	0:22	8.45
45.40	23	0:23	8.62
44.40	24	0:24	8.80
43.40	25	0:25	8.98
42.40	26	0:26	9.18
41.40	27	0:27	9.38
40.40	28	0:28	9.60
39.40	29	0:29	9.82
38.40	30	0:30	10.06
37.40	31	0:31	10.31
36.40	32	0:32	10.57
35.40	33	0:33	10.85
34.40	34	0:34	11.15
33.40	35	0:35	11.46
32.40	36	0:36	11.79
31.40	37	0:37	12.15
30.40	38	0:38	12.53
29.40	39	0:39	12.93
28.40	40	0:40	13.36
27.40	41	0:41	13.83
26.40	42	0:42	14.33
25.40	43	0:43	14.87
24.40	44	0:44	15.46
23.40	45	0:45	16.10
22.40	46	0:46	16.79
21.40	47	0:47	17.55
20.40	48	0:48	18.39
19.40	49	0:49	19.32
18.40	50	0:50	20.34
17.40	51	0:51	21.49
16.40	52	0:52	22.78
15.40	53	0:53	24.24
14.40	54	0:54	25.91
13.40	55	0:55	27.82
12.40	56	0:56	30.04
11.40	57	0:57	32.65
10.40	58	0:58	35.75
9.40	59	0:59	39.49
8.40	60	1:00	44.08
7.40	61	1:01	49.83
6.40	62	1:02	57.22



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5.40	63	1:03	67.01
4.40	64	1:04	80.48
3.40	65	1:05	99.98
2.40	66	1:06	130.18
1.40	67	1:07	181.67
0.40	68	1:08	283.51
0.60	69	1:09	256.21
1.60	70	1:10	168.75
2.60	71	1:11	122.91
3.60	72	1:12	95.43
4.60	73	1:13	77.40
5.60	74	1:14	64.81
6.60	75	1:15	55.58
7.60	76	1:16	48.57
8.60	77	1:17	43.08
9.60	78	1:18	38.68
10.60	79	1:19	35.08
11.60	80	1:20	32.09
12.60	81	1:21	29.57
13.60	82	1:22	27.42
14.60	83	1:23	25.56
15.60	84	1:24	23.94
16.60	85	1:25	22.51
17.60	86	1:26	21.25
18.60	87	1:27	20.13
19.60	88	1:28	19.12
20.60	89	1:29	18.22
21.60	90	1:30	17.39
22.60	91	1:31	16.65
23.60	92	1:32	15.96
24.60	93	1:33	15.34
25.60	94	1:34	14.76
26.60	95	1:35	14.23
27.60	96	1:36	13.73
28.60	97	1:37	13.27
29.60	98	1:38	12.85
30.60	99	1:39	12.45
31.60	100	1:40	12.07
32.60	101	1:41	11.73
33.60	102	1:42	11.40
34.60	103	1:43	11.09
35.60	104	1:44	10.79
36.60	105	1:45	10.52
37.60	106	1:46	10.26
38.60	107	1:47	10.01
39.60	108	1:48	9.78
40.60	109	1:49	9.55
41.60	110	1:50	9.34
42.60	111	1:51	9.14
43.60	112	1:52	8.94
44.60	113	1:53	8.76
45.60	114	1:54	8.58
46.60	115	1:55	8.41
47.60	116	1:56	8.25
48.60	117	1:57	8.10
49.60	118	1:58	7.95
50.60	119	1:59	7.81
51.60	120	2:00	7.67
52.60	121	2:01	7.54
53.60	122	2:02	7.41
54.60	123	2:03	7.29
55.60	124	2:04	7.17
56.60	125	2:05	7.05
57.60	126	2:06	6.94
58.60	127	2:07	6.84
59.60	128	2:08	6.74
60.60	129	2:09	6.64
61.60	130	2:10	6.54
62.60	131	2:11	6.45
63.60	132	2:12	6.36
64.60	133	2:13	6.27
65.60	134	2:14	6.18
66.60	135	2:15	6.10
67.60	136	2:16	6.02
68.60	137	2:17	5.94
69.60	138	2:18	5.87
70.60	139	2:19	5.79
71.60	140	2:20	5.72
72.60	141	2:21	5.65
73.60	142	2:22	5.58
74.60	143	2:23	5.52
75.60	144	2:24	5.45
76.60	145	2:25	5.39
77.60	146	2:26	5.33
78.60	147	2:27	5.27
79.60	148	2:28	5.21
80.60	149	2:29	5.16
81.60	150	2:30	5.10
82.60	151	2:31	5.05
83.60	152	2:32	4.99
84.60	153	2:33	4.94
85.60	154	2:34	4.89
86.60	155	2:35	4.84
87.60	156	2:36	4.79
88.60	157	2:37	4.75
89.60	158	2:38	4.70
90.60	159	2:39	4.66
91.60	160	2:40	4.61
92.60	161	2:41	4.57
93.60	162	2:42	4.53
94.60	163	2:43	4.49
95.60	164	2:44	4.44
96.60	165	2:45	4.40
97.60	166	2:46	4.37
98.60	167	2:47	4.33
99.60	168	2:48	4.29

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100.60	169	2:49	4.25
101.60	170	2:50	4.22
102.60	171	2:51	4.18
103.60	172	2:52	4.15
104.60	173	2:53	4.11
105.60	174	2:54	4.08
106.60	175	2:55	4.05
107.60	176	2:56	4.01
108.60	177	2:57	3.98
109.60	178	2:58	3.95
110.60	179	2:59	3.92
111.60	180	3:00	3.89

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CHICAGO HYETOGRAPH CREATION

DATE:	July 13, 2021
JOB No.:	SBM-18-0530

Client:	**Strathroy Turf Farms Ltd.**
Project:	**Kettle Creek Subdivision**
Location:	**37719 Lake Line, Port Stanley, Ontario**

CITY OF LONDON RAINFALL DISTRIBUTION PARAMETERS*

Return Period (years)	A,B,C Parameters A	B	C
250	3048.220	10.030	0.888

*Intensity i=A/(t+B)^C (mm/hr)

Starting Time= 0:00
Time Step= 0:01
r= 0.38 MTO DMM Section 8, Page 14
t_d= 1
t_d * r= 0.38
t_d * (1-r)= 0.62
i_p= 361.61 peak rainfall intensity, mm/h
t_b= 68.4 time before the peak intensity, min
t_a= 111.6 time after the peak intensity, min

$$i_p = \frac{A}{(\Delta t + B)^C} \quad \text{– peak rainfall intensity}$$

Before the peak:

$$i_b = \frac{A[t_c(1-c)t_b/r) + B]}{[t_b/r + B]^{1+c}}$$

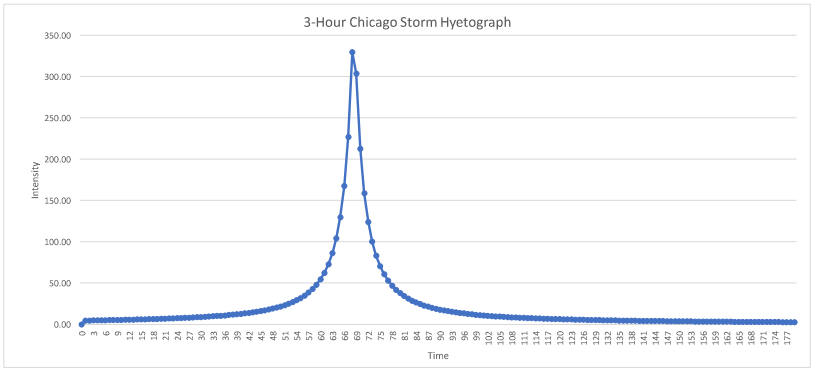
After the peak:

$$i_a = \frac{A[((1-c)t_a/(1-r)) + B]}{[t_a/(1-r) + B]^{1+c}}$$

Return Period (Years)	A,B,C Parameters A	B	C
250	3048.220	10.030	0.888

250-Year Hyetograph

t_b OR t_a	Time (min)	Time (h:m)	Intensity
68.40	0	0:00	0.00
67.40	1	0:01	4.66
66.40	2	0:02	4.74
65.40	3	0:03	4.82
64.40	4	0:04	4.91
63.40	5	0:05	5.00
62.40	6	0:06	5.09
61.40	7	0:07	5.18
60.40	8	0:08	5.28
59.40	9	0:09	5.38
58.40	10	0:10	5.48
57.40	11	0:11	5.59
56.40	12	0:12	5.71
55.40	13	0:13	5.82
54.40	14	0:14	5.95
53.40	15	0:15	6.08
52.40	16	0:16	6.21
51.40	17	0:17	6.35
50.40	18	0:18	6.50
49.40	19	0:19	6.65
48.40	20	0:20	6.81
47.40	21	0:21	6.98
46.40	22	0:22	7.15
45.40	23	0:23	7.34
44.40	24	0:24	7.53
43.40	25	0:25	7.73
42.40	26	0:26	7.95
41.40	27	0:27	8.18
40.40	28	0:28	8.42
39.40	29	0:29	8.67
38.40	30	0:30	8.94
37.40	31	0:31	9.22
36.40	32	0:32	9.52
35.40	33	0:33	9.85
34.40	34	0:34	10.19
33.40	35	0:35	10.56
32.40	36	0:36	10.95
31.40	37	0:37	11.37
30.40	38	0:38	11.82
29.40	39	0:39	12.31
28.40	40	0:40	12.83
27.40	41	0:41	13.40
26.40	42	0:42	14.02
25.40	43	0:43	14.69
24.40	44	0:44	15.43
23.40	45	0:45	16.23
22.40	46	0:46	17.12
21.40	47	0:47	18.10
20.40	48	0:48	19.18
19.40	49	0:49	20.39
18.40	50	0:50	21.75
17.40	51	0:51	23.27
16.40	52	0:52	24.99
15.40	53	0:53	26.96
14.40	54	0:54	29.22
13.40	55	0:55	31.84
12.40	56	0:56	34.90
11.40	57	0:57	38.51
10.40	58	0:58	42.82
9.40	59	0:59	48.03
8.40	60	1:00	54.45
7.40	61	1:01	62.47
6.40	62	1:02	72.72
5.40	63	1:03	86.16
4.40	64	1:04	104.32
3.40	65	1:05	129.84
2.40	66	1:06	167.51
1.40	67	1:07	226.92



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1415 Huron Rd., Unit 225
Kitchener, ON N2R 0L3
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0.40	68	1:08	329.71
0.60	69	1:09	303.81
1.60	70	1:10	212.54
2.60	71	1:11	158.64
3.60	72	1:12	123.96
4.60	73	1:13	100.21
5.60	74	1:14	83.15
6.60	75	1:15	70.45
7.60	76	1:16	60.71
8.60	77	1:17	53.05
9.60	78	1:18	46.91
10.60	79	1:19	41.89
11.60	80	1:20	37.73
12.60	81	1:21	34.24
13.60	82	1:22	31.28
14.60	83	1:23	28.74
15.60	84	1:24	26.55
16.60	85	1:25	24.63
17.60	86	1:26	22.95
18.60	87	1:27	21.46
19.60	88	1:28	20.14
20.60	89	1:29	18.96
21.60	90	1:30	17.89
22.60	91	1:31	16.94
23.60	92	1:32	16.07
24.60	93	1:33	15.28
25.60	94	1:34	14.56
26.60	95	1:35	13.89
27.60	96	1:36	13.29
28.60	97	1:37	12.73
29.60	98	1:38	12.21
30.60	99	1:39	11.73
31.60	100	1:40	11.28
32.60	101	1:41	10.87
33.60	102	1:42	10.48
34.60	103	1:43	10.12
35.60	104	1:44	9.78
36.60	105	1:45	9.46
37.60	106	1:46	9.16
38.60	107	1:47	8.88
39.60	108	1:48	8.62
40.60	109	1:49	8.37
41.60	110	1:50	8.13
42.60	111	1:51	7.91
43.60	112	1:52	7.69
44.60	113	1:53	7.49
45.60	114	1:54	7.30
46.60	115	1:55	7.12
47.60	116	1:56	6.94
48.60	117	1:57	6.78
49.60	118	1:58	6.62
50.60	119	1:59	6.47
51.60	120	2:00	6.32
52.60	121	2:01	6.18
53.60	122	2:02	6.05
54.60	123	2:03	5.92
55.60	124	2:04	5.80
56.60	125	2:05	5.68
57.60	126	2:06	5.57
58.60	127	2:07	5.46
59.60	128	2:08	5.36
60.60	129	2:09	5.26
61.60	130	2:10	5.16
62.60	131	2:11	5.07
63.60	132	2:12	4.98
64.60	133	2:13	4.89
65.60	134	2:14	4.81
66.60	135	2:15	4.73
67.60	136	2:16	4.65
68.60	137	2:17	4.57
69.60	138	2:18	4.50
70.60	139	2:19	4.43
71.60	140	2:20	4.36
72.60	141	2:21	4.29
73.60	142	2:22	4.23
74.60	143	2:23	4.16
75.60	144	2:24	4.10
76.60	145	2:25	4.04
77.60	146	2:26	3.99
78.60	147	2:27	3.93
79.60	148	2:28	3.88
80.60	149	2:29	3.82
81.60	150	2:30	3.77
82.60	151	2:31	3.72
83.60	152	2:32	3.67
84.60	153	2:33	3.62
85.60	154	2:34	3.58
86.60	155	2:35	3.53
87.60	156	2:36	3.49
88.60	157	2:37	3.45
89.60	158	2:38	3.41
90.60	159	2:39	3.36
91.60	160	2:40	3.32
92.60	161	2:41	3.29
93.60	162	2:42	3.25
94.60	163	2:43	3.21
95.60	164	2:44	3.17
96.60	165	2:45	3.14
97.60	166	2:46	3.10
98.60	167	2:47	3.07
99.60	168	2:48	3.04
100.60	169	2:49	3.01
101.60	170	2:50	2.97
102.60	171	2:51	2.94
103.60	172	2:52	2.91
104.60	173	2:53	2.88

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105.60	174	2:54	2.85
106.60	175	2:55	2.82
107.60	176	2:56	2.80
108.60	177	2:57	2.77
109.60	178	2:58	2.74
110.60	179	2:59	2.72
111.60	180	3:00	2.69

ELEV	AREA (sq. m)	STEP DEPTH (m)	AVG END INC. VOL. (cu. m)	AVG END TOTAL VOL. (cu. m)	CONIC INC. VOL. (cu. m)	CONIC TOTAL VOL. (cu. m)	DEPTH (m)
177.01	0.4	N/A	N/A	0	N/A	0	0
177.02	2.26	0.01	0.01	0.01	0.01	0.01	0.01
177.03	5.13	0.01	0.04	0.05	0.04	0.05	0.02
177.04	8.97	0.01	0.07	0.12	0.07	0.12	0.03
177.05	13.71	0.01	0.11	0.23	0.11	0.23	0.04
177.06	19.39	0.01	0.17	0.4	0.16	0.39	0.05
177.07	26.55	0.01	0.23	0.63	0.23	0.62	0.06
177.08	34.46	0.01	0.31	0.93	0.3	0.93	0.07
177.09	42.78	0.01	0.39	1.32	0.39	1.31	0.08
177.1	51.53	0.01	0.47	1.79	0.47	1.78	0.09
177.11	60.83	0.01	0.56	2.35	0.56	2.35	0.1
177.12	71.34	0.01	0.66	3.01	0.66	3.01	0.11
177.13	83.16	0.01	0.77	3.79	0.77	3.78	0.12
177.14	96.26	0.01	0.9	4.68	0.9	4.67	0.13
177.15	110.66	0.01	1.03	5.72	1.03	5.71	0.14
177.16	126.34	0.01	1.19	6.9	1.18	6.89	0.15
177.17	143.35	0.01	1.35	8.25	1.35	8.24	0.16
177.18	161.59	0.01	1.52	9.78	1.52	9.76	0.17
177.19	181.17	0.01	1.71	11.49	1.71	11.48	0.18
177.2	202.08	0.01	1.92	13.41	1.92	13.39	0.19
177.21	224.25	0.01	2.13	15.54	2.13	15.52	0.2
177.22	247.78	0.01	2.36	17.9	2.36	17.88	0.21
177.23	272.55	0.01	2.6	20.5	2.6	20.48	0.22
177.24	298.54	0.01	2.86	23.36	2.85	23.34	0.23
177.25	325.63	0.01	3.12	26.48	3.12	26.46	0.24
177.26	353.78	0.01	3.4	29.87	3.4	29.85	0.25
177.27	383.14	0.01	3.68	33.56	3.68	33.54	0.26
177.28	413.7	0.01	3.98	37.54	3.98	37.52	0.27
177.29	445.37	0.01	4.3	41.84	4.29	41.81	0.28
177.3	478.39	0.01	4.62	46.46	4.62	46.43	0.29
177.31	512.74	0.01	4.96	51.41	4.95	51.39	0.3
177.32	548.24	0.01	5.3	56.72	5.3	56.69	0.31
177.33	585.14	0.01	5.67	62.38	5.67	62.36	0.32
177.34	623.32	0.01	6.04	68.43	6.04	68.4	0.33
177.35	662.66	0.01	6.43	74.86	6.43	74.83	0.34
177.36	702.8	0.01	6.83	81.68	6.83	81.65	0.35
177.37	742.52	0.01	7.23	88.91	7.23	88.88	0.36
177.38	782.52	0.01	7.63	96.54	7.62	96.5	0.37
177.39	822.78	0.01	8.03	104.56	8.03	104.53	0.38
177.4	863.19	0.01	8.43	112.99	8.43	112.96	0.39
177.41	903.9	0.01	8.84	121.83	8.83	121.79	0.4
177.42	944.88	0.01	9.24	131.07	9.24	131.03	0.41
177.43	985.99	0.01	9.65	140.73	9.65	140.69	0.42
177.44	1027.39	0.01	10.07	150.79	10.07	150.75	0.43
177.45	1069.01	0.01	10.48	161.27	10.48	161.24	0.44
177.46	1110.84	0.01	10.9	172.17	10.9	172.13	0.45
177.47	1152.85	0.01	11.32	183.49	11.32	183.45	0.46
177.48	1195.02	0.01	11.74	195.23	11.74	195.19	0.47
177.49	1237.44	0.01	12.16	207.39	12.16	207.35	0.48
177.5	1280.12	0.01	12.59	219.98	12.59	219.94	0.49
177.51	1323.14	0.01	13.02	233	13.02	232.96	0.5
177.52	1366.46	0.01	13.45	246.45	13.45	246.4	0.51
177.53	1410.08	0.01	13.88	260.33	13.88	260.28	0.52
177.54	1454.02	0.01	14.32	274.65	14.32	274.6	0.53
177.55	1498.13	0.01	14.76	289.41	14.76	289.37	0.54
177.56	1542.12	0.01	15.2	304.61	15.2	304.57	0.55
177.57	1585.8	0.01	15.64	320.25	15.64	320.2	0.56
177.58	1629.01	0.01	16.07	336.33	16.07	336.28	0.57
177.59	1671.05	0.01	16.5	352.83	16.5	352.78	0.58
177.6	1712.16	0.01	16.92	369.74	16.92	369.69	0.59
177.61	1752.48	0.01	17.32	387.06	17.32	387.02	0.6
177.62	1791.9	0.01	17.72	404.79	17.72	404.74	0.61
177.63	1830.37	0.01	18.11	422.9	18.11	422.85	0.62
177.64	1867.98	0.01	18.49	441.39	18.49	441.34	0.63
177.65	1904.72	0.01	18.86	460.25	18.86	460.2	0.64
177.66	1940.76	0.01	19.23	479.48	19.23	479.43	0.65
177.67	1975.44	0.01	19.58	499.06	19.58	499.01	0.66
177.68	2008.67	0.01	19.92	518.98	19.92	518.93	0.67
177.69	2041.1	0.01	20.25	539.23	20.25	539.18	0.68
177.7	2072.83	0.01	20.57	559.8	20.57	559.75	0.69
177.71	2103.86	0.01	20.88	580.68	20.88	580.63	0.7
177.72	2134.1	0.01	21.19	601.87	21.19	601.82	0.71
177.73	2163.66	0.01	21.49	623.36	21.49	623.31	0.72
177.74	2192.5	0.01	21.78	645.14	21.78	645.09	0.73
177.75	2220.64	0.01	22.07	667.21	22.07	667.16	0.74
177.76	2248.09	0.01	22.34	689.55	22.34	689.5	0.75
177.77	2274.75	0.01	22.61	712.17	22.61	712.12	0.76
177.78	2300.77	0.01	22.88	735.04	22.88	734.99	0.77
177.79	2326.16	0.01	23.13	758.18	23.13	758.13	0.78
177.8	2350.95	0.01	23.39	781.56	23.39	781.51	0.79
177.81	2375.39	0.01	23.63	805.2	23.63	805.14	0.8
177.82	2398.54	0.01	23.87	829.07	23.87	829.01	0.81
177.83	2421.34	0.01	24.1	853.17	24.1	853.11	0.82
177.84	2443.34	0.01	24.32	877.49	24.32	877.44	0.83
177.85	2464.68	0.01	24.54	902.03	24.54	901.98	0.84
177.86	2485.32	0.01	24.75	926.78	24.75	926.73	0.85
177.87	2505.17	0.01	24.95	951.73	24.95	951.68	0.86
177.88	2524.47	0.01	25.15	976.88	25.15	976.83	0.87
177.89	2543.03	0.01	25.34	1002.22	25.34	1002.16	0.88
177.9	2561.1	0.01	25.52	1027.74	25.52	1027.69	0.89
177.91	2578.54	0.01	25.7	1053.44	25.7	1053.38	0.9
177.92	2595.58	0.01	25.87	1079.31	25.87	1079.25	0.91
177.93	2612.05	0.01	26.04	1105.34	26.04	1105.29	0.92
177.94	2628.23	0.01	26.2	1131.55	26.2	1131.49	0.93
177.95	2643.98	0.01	26.36	1157.91	26.36	1157.85	0.94
177.96	2659.82	0.01	26.52	1184.43	26.52	1184.37	0.95
177.97	2675.76	0.01	26.68	1211.11	26.68	1211.05	0.96
177.98	2691.52	0.01	26.84	1237.94	26.84	1237.89	0.97
177.99	2706.85	0.01	26.99	1264.93	26.99	1264.88	0.98
178	2717.77	0.01	27.12	1292.06	27.12	1292	0.99
178.01	2728.71	0.01	27.23	1319.29	27.23	1319.23	1
178.02	2739.62	0.01	27.34	1346.63	27.34	1346.58	1.01
178.03	2750.59	0.01	27.45	1374.08	27.45	1374.03	1.02
178.04	2761.59	0.01	27.56	1401.64	27.56	1401.59	1.03
178.05	2772.59	0.01	27.67	1429.31	27.67	1429.26	1.04
178.06	2783.61	0.01	27.78	1457.09	27.78	1457.04	1.05
178.07	2794.63	0.01	27.89	1484.98	27.89	1484.93	1.06
178.08	2805.67	0.01	28	1512.99	28	1512.93	1.07
178.09	2816.72	0.01	28.11	1541.1	28.11	1541.04	1.08
178.1	2827.79	0.01	28.22	1569.32	28.22	1569.27	1.09
178.11	2838.88	0.01	28.33	1597.65	28.33	1597.6	1.1
178.12	2849.98	0.01	28.44	1626.1	28.44	1626.05	1.11
178.13	2861.09	0.01	28.56	1654.65	28.56	1654.6	1.12
178.14	2872.22	0.01	28.67	1683.32	28.67	1683.27	1.13
178.15	2883.34	0.01	28.78	1712.1	28.78	1712.04	1.14
178.16	2894.49	0.01	28.89	1740.99	28.89	1740.93	1.15
178.17	2905.66	0.01	29	1769.99	29	1769.93	1.16
178.18	2916.84	0.01	29.11	1799.1	29.11	1799.05	1.17
178.19	2928.04	0.01	29.22	1828.32	29.22	1828.27	1.18
178.2	2939.25	0.01	29.34	1857.66	29.34	1857.61	1.19
178.21	2950.47	0.01	29.45	1887.11	29.45	1887.06	1.2
178.22	2961.71	0.01	29.56	1916.67	29.56	1916.62	1.21
178.23	2972.94	0.01	29.67	1946.34	29.67	1946.29	1.22
178.24	2984.2	0.01	29.79	1976.13	29.79	1976.08	1.23
178.25	2995.46	0.01	29.9	2006.03	29.9	2005.97	1.24
178.26	3006.76	0.01	30.01	2036.04	30.01	2035.99	1.25
178.27	3018.06	0.01	30.12	2066.16	30.12	2066.11	1.26
178.28	3029.39	0.01	30.24	2096.4	30.24	2096.35	1.27
178.29	3040.74	0.01	30.35	2126.75	30.35	2126.7	1.28
178.3	3052.12	0.01	30.46	2157.22	30.46	2157.16	1.29
178.31	3063.45	0.01	30.58	2187.79	30.58	2187.74	1.3
178.32	3074.88	0.01	30.69	2218.49	30.69	2218.43	1.31
178.33	3086.33	0.01	30.81	2249.29	30.81	2249.24	1.32
178.34	3097.74	0.01	30.92	2280.21	30.92	2280.16	1.33
178.35	3109.23	0.01	31.03	2311.25	31.03	2311.19	1.34
178.36	3120.76	0.01	31.15	2342.4	31.15	2342.34	1.35
178.37	3132.31	0.01	31.27	2373.66	31.27	2373.61	1.36
178.38	3143.89	0.01	31.38	2405.04	31.38	2404.99	1.37
178.39	3155.47	0.01	31.5	2436.54	31.5	2436.49	1.38
178.4	3167.11	0.01	31.61	2468.15	31.61	2468.1	1.39
178.41	3178.77	0.01	31.73	2499.88	31.73	2499.83	1.4
178.42	3190.46	0.01	31.85	2531.73	31.85	2531.67	1.41
178.43	3202.2	0.01	31.96	2563.69	31.96	2563.64	1.42
178.44	3213.96	0.01	32.08	2595.77	32.08	2595.72	1.43
178.45	3225.73	0.01	32.2	2627.97	32.2	2627.92	1.44
178.46	3237.54	0.01	32.32	2660.29	32.32	2660.23	1.45
178.47	3249.4	0.01	32.43	2692.72	32.43	2692.67	1.46
178.48	3261.32	0.01	32.55	2725.28	32.55	2725.22	1.47
178.49	3273.32	0.01	32.67	2757.95	32.67	2757.89	1.48
178.5	3285.4	0.01	32.79	2790.74	32.79	2790.69	1.49
178.51	3297.54	0.01	32.91	2823.66	32.91	2823.61	1.5
178.52	3309.74	0.01	33.04	2856.69	33.04	2856.64	1.51
178.53	3322.02	0.01	33.16	2889.85	33.16	2889.8	1.52
178.54	3334.35	0.01	33.28	2923.13	33.28	2923.08	1.53
178.55	3346.63	0.01	33.4	2956.54	33.4	2956.48	1.54
178.56	3359.11	0.01	33.53	2990.07	33.53	2990.01	1.55
178.57	3371.64	0.01	33.65	3023.72	33.65	3023.67	1.56
178.58	3384.23	0.01	33.78	3057.5	33.78	3057.45	1.57
178.59	3396.91	0.01	33.91	3091.41	33.91	3091.35	1.58
178.6	3409.64	0.01	34.03	3125.44	34.03	3125.38	1.59
178.61	3422.44	0.01	34.16	3159.6	34.16	3159.55	1.6
178.62	3435.31	0.01	34.29	3193.89	34.29	3193.83	1.61
178.63	3448.24	0.01	34.42	3228.31	34.42	3228.25	1.62
178.64	3461.25	0.01	34.55	3262.85	34.55	3262.8	1.63
178.65	3474.33	0.01	34.68	3297.53	34.68	3297.48	1.64
178.66	3487.48	0.01	34.81	3332.34	34.81	3332.29	1.65
178.67	3500.7	0.01	34.94	3367.28	34.94	3367.23	1.66
178.68	3514	0.01	35.07	3402.35	35.07	3402.3	1.67
178.69	3527.36	0.01	35.21	3437.56	35.21	3437.51	1.68
178.7	3540.78	0.01	35.34	3472.9	35.34	3472.85	1.69
178.71	3554.29	0.01	35.48	3508.38	35.48	3508.32	1.7
178.72	3567.88	0.01	35.61	3543.99	35.61	3543.93	1.71
178.73	3581.53	0.01	35.75	3579.74	35.75	3579.68	1.72
178.74	3595.28	0.01	35.88	3615.62	35.88	3615.56	1.73
178.75	3609.1	0.01	36.02	3651.64	36.02	3651.59	1.74
178.76	3622.98	0.01	36.16	3687.8	36.16	3687.75	1.75
178.77	3636.94	0.01	36.3	3724.1	36.3	3724.05	1.76
178.78	3650.99	0.01	36.44	3760.54	36.44	3760.49	1.77
178.79	3665.1	0.01	36.58	3797.12	36.58	3797.07	1.78
178.8	3679.33	0.01	36.72	3833.84	36.72	3833.79	1.79
178.81	3693.6	0.01	36.86	3870.71	36.86	3870.65	1.8
178.82	3707.96	0.01	37.01	3907.72	37.01	3907.66	1.81
178.83	3722.41	0.01	37.15	3944.87	37.15	3944.81	1.82
178.84	3736.99	0.01	37.3	3982.16	37.3	3982.11	1.83
178.85	3751.62	0.01	37.44	4019.61	37.44	4019.55	1.84
178.86	3766.35	0.01	37.59	4057.2	37.59	4057.14	1.85
178.87	3781.18	0.01	37.74	4094.94	37.74	4094.88	1.86
178.88	3796.09	0.01	37.89	4132.82	37.89	4132.77	1.87
178.89	3811.09	0.01	38.04	4170.86	38.04	4170.8	1.88
178.9	3826.21	0.01	38.19	4209.04	38.19	4208.99	1.89

Stormceptor®

FORTERRA

Stormceptor® EF Sizing Report

STORMCEPTOR®
ESTIMATED NET ANNUAL SEDIMENT (TSS) LOAD REDUCTION

07/26/2022

Province:	Ontario
City:	Port Stanley
Nearest Rainfall Station:	LONDON CS
Climate Station Id:	6144478
Years of Rainfall Data:	20

Site Name:	Kettle Creek Subdivision (37719 Lake Line)

Drainage Area (ha):	14.8
Runoff Coefficient 'c':	0.40

Particle Size Distribution:	Fine
Target TSS Removal (%):	70.0
Required Water Quality Runoff Volume Capture (%):	85.0

Oil / Fuel Spill Risk Site?	Yes
Upstream Flow Control?	Yes
Upstream Orifice Control Flow Rate to Stormceptor (L/s):	1888
Peak Conveyance (maximum) Flow Rate (L/s):	1888

Project Name:	Kettle Creek Subdivision (37719 Lake Line)
Project Number:	SBM-18-0530
Designer Name:	Brandon O'Leary
Designer Company:	Forterra
Designer Email:	brandon.oleary@forterrabp.com
Designer Phone:	905-630-0359
EOR Name:	Rawan Safieddine
EOR Company:	Strik Baldinelli Moniz Ltd.
EOR Email:	
EOR Phone:	

Net Annual Sediment (TSS) Load Reduction Sizing Summary

Stormceptor Model	TSS Removal Provided (%)
EFO4	35
EFO6	50
EFO8	62
EFO10	71
EFO12	81

Recommended Stormceptor EFO Model: EFO10

Estimated Net Annual Sediment (TSS) Load Reduction (%): 71

Water Quality Runoff Volume Capture (%): > 90

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THIRD-PARTY TESTING AND VERIFICATION

►**Stormceptor® EF and Stormceptor® EFO** are the latest evolutions in the Stormceptor® oil-grit separator (OGS) technology series, and are designed to remove a wide variety of pollutants from stormwater and snowmelt runoff. These technologies have been third-party tested in accordance with the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators** and performance has been third-party verified in accordance with the **ISO 14034 Environmental Technology Verification (ETV)** protocol.

PERFORMANCE

►**Stormceptor® EF and EFO** remove stormwater pollutants through gravity separation and floatation, and feature a patent-pending design that generates positive removal of total suspended solids (TSS) throughout each storm event, including high-intensity storms. Captured pollutants include sediment, free oils, and sediment-bound pollutants such as nutrients, heavy metals, and petroleum hydrocarbons. Stormceptor is sized to remove a high level of TSS from the frequent rainfall events that contribute the vast majority of annual runoff volume and pollutant load. The technology incorporates an internal bypass to convey excessive stormwater flows from high-intensity storms through the device without resuspension and washout (scour) of previously captured pollutants. Proper routine maintenance ensures high pollutant removal performance and protection of downstream waterways.

PARTICLE SIZE DISTRIBUTION (PSD)

►The **Canadian ETV PSD** shown in the table below was used, or in part, for this sizing. This is the identical PSD that is referenced in the Canadian ETV ***Procedure for Laboratory Testing of Oil-Grit Separators*** for both sediment removal testing and scour testing. The Canadian ETV PSD contains a wide range of particle sizes in the sand and silt fractions, and is considered reasonably representative of the particle size fractions found in typical urban stormwater runoff.

Particle Size (µm)	Percent Less Than	Particle Size Fraction (µm)	Percent
1000	100	500-1000	5
500	95	250-500	5
250	90	150-250	15
150	75	100-150	15
100	60	75-100	10
75	50	50-75	5
50	45	20-50	10
20	35	8-20	15
8	20	5-8	10
5	10	2-5	5
2	5	<2	5

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Upstream Flow Controlled Results

Rainfall Intensity (mm / hr)	Percent Rainfall Volume (%)	Cumulative Rainfall Volume (%)	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m²)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
0.5	9.0	9.0	8.23	494.0	68.0	100	9.0	9.0
1	18.9	27.8	16.46	987.0	135.0	92	17.4	26.3
2	15.3	43.2	32.92	1975.0	271.0	80	12.3	38.6
3	10.8	53.9	49.37	2962.0	406.0	74	8.0	46.5
4	7.8	61.7	65.83	3950.0	541.0	67	5.2	51.8
5	5.8	67.5	82.29	4937.0	676.0	64	3.7	55.5
6	4.5	72.0	98.75	5925.0	812.0	63	2.8	58.3
7	3.6	75.6	115.20	6912.0	947.0	62	2.2	60.5
8	3.5	79.1	131.66	7900.0	1082.0	60	2.1	62.6
9	3.3	82.4	148.12	8887.0	1217.0	57	1.9	64.5
10	2.6	85.0	164.58	9875.0	1353.0	53	1.4	65.9
11	1.7	86.7	181.03	10862.0	1488.0	49	0.9	66.7
12	1.7	88.4	197.49	11849.0	1623.0	45	0.8	67.5
13	1.5	89.8	213.95	12837.0	1758.0	42	0.6	68.1
14	1.2	91.0	230.41	13824.0	1894.0	39	0.5	68.6
15	1.3	92.3	246.86	14812.0	2029.0	36	0.5	69.0
16	0.8	93.0	263.32	15799.0	2164.0	34	0.3	69.3
17	0.8	93.8	279.78	16787.0	2300.0	32	0.3	69.5
18	1.2	95.0	296.24	17774.0	2435.0	30	0.4	69.9
19	0.7	95.7	312.69	18762.0	2570.0	28	0.2	70.1
20	0.9	96.6	329.15	19749.0	2705.0	27	0.3	70.3
21	0.2	96.8	345.61	20737.0	2841.0	26	0.1	70.4
22	3.2	100.0	362.07	21724.0	2976.0	25	0.8	71.2
23	0.4	100.4	378.52	22711.0	3111.0	24	0.1	71.3
24	0.4	100.9	394.98	23699.0	3246.0	23	0.1	71.4
25	-0.9	100.0	411.44	24686.0	3382.0	22	0.0	71.2
30	1.3	101.3	493.73	29624.0	4058.0	18	0.2	71.4
35	0.6	101.9	576.02	34561.0	4734.0	16	0.1	71.5
40	0.4	102.3	658.30	39498.0	5411.0	14	0.1	71.6
45	-2.3	100.0	740.59	44436.0	6087.0	12	0.0	71.3
Estimated Net Annual Sediment (TSS) Load Reduction =								**71 %**

Climate Station ID: 6144478 *Years of Rainfall Data*: 20

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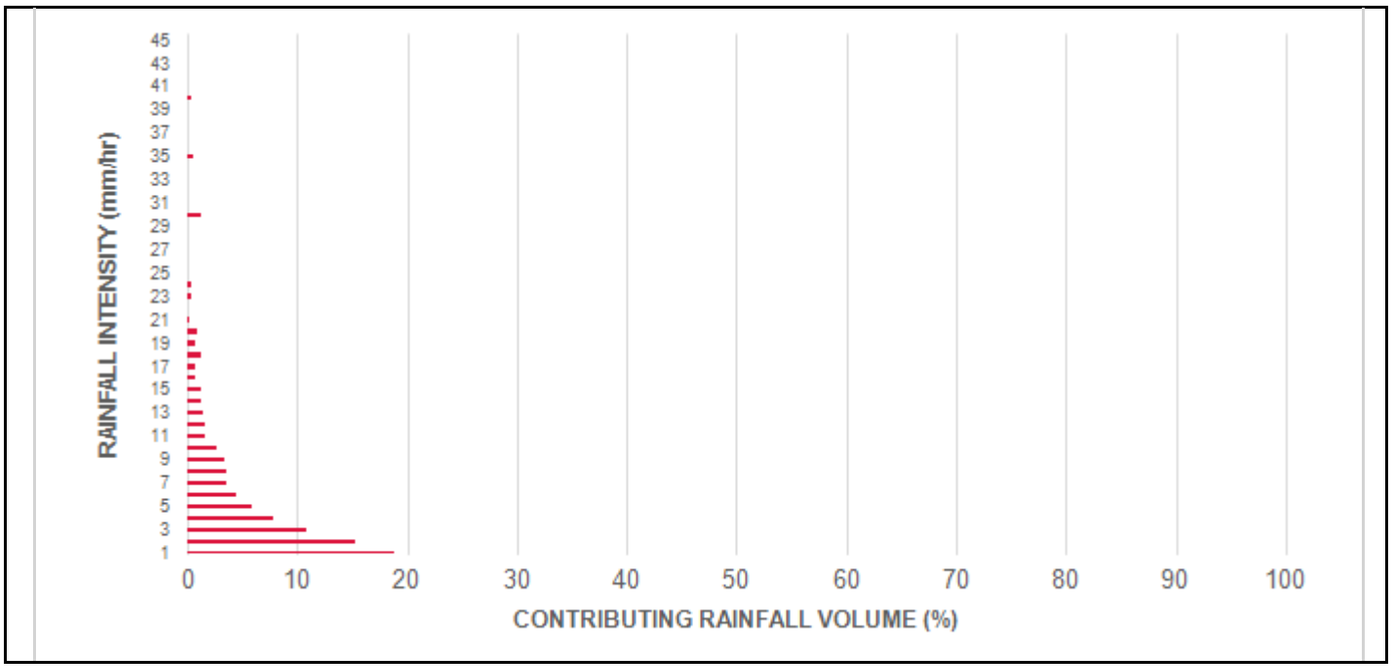
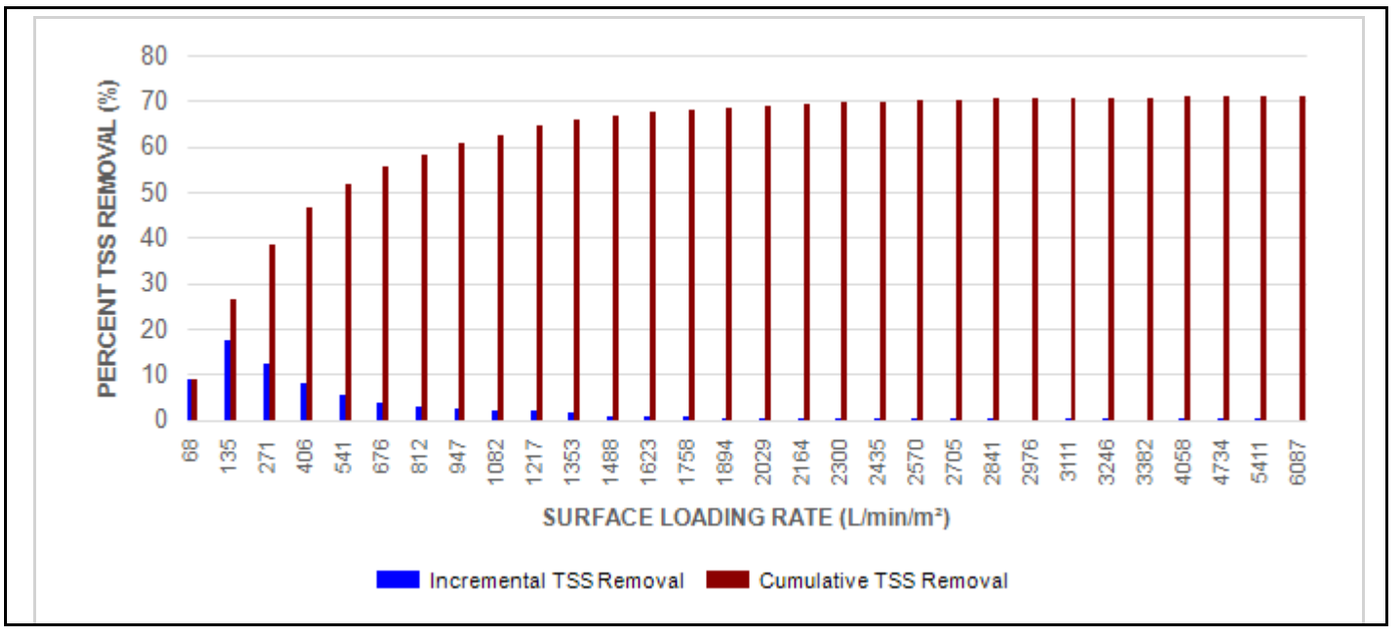
RAINFALL DATA FROM LONDON CS RAINFALL STATION



INCREMENTAL AND CUMULATIVE TSS REMOVAL
FOR THE RECOMMENDED STORMCEPTOR® MODEL



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Maximum Pipe Diameter / Peak Conveyance

Stormceptor EF / EFO	Model Diameter		Min Angle Inlet / Outlet Pipes	Max Inlet Pipe Diameter		Max Outlet Pipe Diameter		Peak Conveyance Flow Rate	
	(m)	(ft)		(mm)	(in)	(mm)	(in)	(L/s)	(cfs)
EF4 / EFO4	1.2	4	90	609	24	609	24	425	15
EF6 / EFO6	1.8	6	90	914	36	914	36	990	35
EF8 / EFO8	2.4	8	90	1219	48	1219	48	1700	60
EF10 / EFO10	3.0	10	90	1828	72	1828	72	2830	100
EF12 / EFO12	3.6	12	90	1828	72	1828	72	2830	100

SCOUR PREVENTION AND ONLINE CONFIGURATION

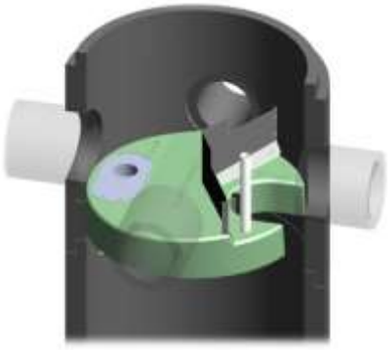
►**Stormceptor® EF and EFO** feature an internal bypass and superior scour prevention technology that have been demonstrated in third-party testing according to the scour testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**, and the exceptional scour test performance has been third-party verified in accordance with the ISO 14034 ETV protocol. As a result, Stormceptor EF and EFO are approved for online installation, eliminating the need for costly additional bypass structures, piping, and installation expense.

DESIGN FLEXIBILITY

►**Stormceptor® EF** and **EFO** offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe or multiple inlet pipes, and/or surface runoff through an inlet grate. The device can also serve as a junction structure, accommodate a 90-degree inlet-to-outlet bend angle, and can be modified to ensure performance in submerged conditions.

OIL CAPTURE AND RETENTION

►While Stormceptor® EF will capture and retain oil from dry weather spills and low intensity runoff, **Stormceptor® EFO** has demonstrated superior oil capture and greater than 99% oil retention in third-party testing according to the light liquid re-entrainment testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**. Stormceptor EFO is recommended for sites where oil capture and retention is a requirement.



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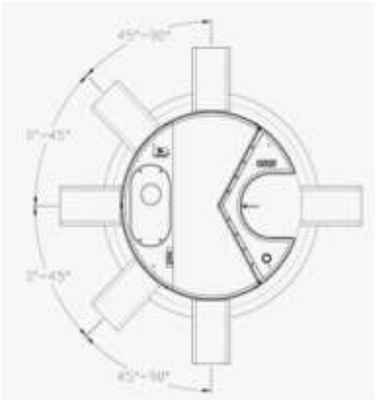

INLET-TO-OUTLET DROP

Elevation differential between inlet and outlet pipe inverts is dictated by the angle at which the inlet pipe(s) enters the unit.
0° - 45° : The inlet pipe is 1-inch (25mm) higher than the outlet pipe.
45° - 90° : The inlet pipe is 2-inches (50mm) higher than the outlet pipe.

HEAD LOSS

The head loss through Stormceptor EF is similar to that of a 60-degree bend structure. The applicable K value for calculating minor losses through the unit is 1.1. For submerged conditions the applicable K value is 3.0.

Pollutant Capacity

Stormceptor EF / EFO	Model Diameter		Depth (Outlet Pipe Invert to Sump Floor)		Oil Volume		Recommended Sediment Maintenance Depth *		Maximum Sediment Volume *		Maximum Sediment Mass **	
	(m)	(ft)	(m)	(ft)	(L)	(Gal)	(mm)	(in)	(L)	(ft^3)	(kg)	(lb)
EF4 / EFO4	1.2	4	1.52	5.0	265	70	203	8	1190	42	1904	5250
EF6 / EFO6	1.8	6	1.93	6.3	610	160	305	12	3470	123	5552	15375
EF8 / EFO8	2.4	8	2.59	8.5	1070	280	610	24	8780	310	14048	38750
EF10 / EFO10	3.0	10	3.25	10.7	1670	440	610	24	17790	628	28464	78500
EF12 / EFO12	3.6	12	3.89	12.8	2475	655	610	24	31220	1103	49952	137875

*Increased sump depth may be added to increase sediment storage capacity
** Average density of wet packed sediment in sump = 1.6 kg/L (100 lb/ft^3)

Feature	Benefit	Feature Appeals To
Patent-pending enhanced flow treatment and scour prevention technology	Superior, verified third-party performance	Regulator, Specifying & Design Engineer
Third-party verified light liquid capture and retention for EFO version	Proven performance for fuel/oil hotspot locations	Regulator, Specifying & Design Engineer, Site Owner
Functions as bend, junction or inlet structure	Design flexibility	Specifying & Design Engineer
Minimal drop between inlet and outlet	Site installation ease	Contractor
Large diameter outlet riser for inspection and maintenance	Easy maintenance access from grade	Maintenance Contractor & Site Owner

STANDARD STORMCEPTOR EF/EFO DRAWINGS

For standard details, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

STANDARD STORMCEPTOR EF/EFO SPECIFICATION

For specifications, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

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STANDARD PERFORMANCE SPECIFICATION FOR "OIL GRIT SEPARATOR" (OGS) STORMWATER QUALITY TREATMENT DEVICE

PART 1 – GENERAL

1.1 WORK INCLUDED

This section specifies requirements for selecting, sizing, and designing an underground Oil Grit Separator (OGS) device for stormwater quality treatment, with third-party testing results and a Statement of Verification in accordance with ISO 14034 Environmental Management – Environmental Technology Verification (ETV).

1.2 REFERENCE STANDARDS & PROCEDURES

ISO 14034:2016 Environmental management – Environmental technology verification (ETV)

Canadian Environmental Technology Verification (ETV) Program's **Procedure for Laboratory Testing of Oil-Grit** S**eparators**

1.3 SUBMITTALS

1.3.1 All submittals, including sizing reports & shop drawings, shall be submitted upon request with each order to the contractor then forwarded to the Engineer of Record for review and acceptance. Shop drawings shall detail all OGS components, elevations, and sequence of construction.

1.3.2 Alternative devices shall have features identical to or greater than the specified device, including: treatment chamber diameter, treatment chamber wet volume, sediment storage volume, and oil storage volume.

1.3.3 Unless directed otherwise by the Engineer of Record, OGS stormwater quality treatment product substitutions or alternatives submitted within ten days prior to project bid shall not be accepted. All alternatives or substitutions submitted shall be signed and sealed by a local registered Professional Engineer, based on the exact same criteria detailed in Section 3, in entirety, subject to review and approval by the Engineer of Record.

PART 2 – PRODUCTS

2.1 OGS POLLUTANT STORAGE

The OGS device shall include a sump for sediment storage, and a protected volume for the capture and storage of petroleum hydrocarbons and buoyant gross pollutants. The minimum sediment & petroleum hydrocarbon storage capacity shall be as follows:

2.1.1	4 ft (1219 mm) Diameter OGS Units:	1.19 m^3 sediment / 265 L oil
	6 ft (1829 mm) Diameter OGS Units:	3.48 m^3 sediment / 609 L oil
	8 ft (2438 mm) Diameter OGS Units:	8.78 m^3 sediment / 1,071 L oil
	10 ft (3048 mm) Diameter OGS Units:	17.78 m^3 sediment / 1,673 L oil
	12 ft (3657 mm) Diameter OGS Units:	31.23 m^3 sediment / 2,476 L oil

PART 3 – PERFORMANCE & DESIGN

3.1 GENERAL

The OGS stormwater quality treatment device shall be verified in accordance with ISO 14034:2016 Environmental management – Environmental technology verification (ETV). The OGS stormwater quality treatment device shall remove oil, sediment and gross pollutants from stormwater runoff during frequent wet weather events, and retain these pollutants during less frequent high flow wet weather events below the insert within the OGS for later removal during maintenance. The Manufacturer shall have at least ten (10) years of local experience, history and success in engineering design, manufacturing and production and supply of OGS stormwater quality treatment device systems, acceptable to the Engineer of Record.

3.2 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in the sizing report for the specified device. Sizing of the OGS shall be determined by use of a minimum ten (10) years of local historical rainfall data provided by Environment Canada. Sizing shall also be determined by use of the sediment removal performance data derived from the ISO 14034 ETV third-party verified laboratory testing data from testing conducted in accordance with the Canadian ETV protocol Procedure for Laboratory Testing of Oil-Grit Separators, as follows:

3.2.1 Sediment removal efficiency for a given surface loading rate and its associated flow rate shall be based on sediment removal efficiency demonstrated at the seven (7) tested surface loading rates specified in the protocol, ranging 40 L/min/m^2 to 1400 L/min/m^2, and as stated in the ISO 14034 ETV Verification Statement for the OGS device.

3.2.2 Sediment removal efficiency for surface loading rates between 40 L/min/m^2 and 1400 L/min/m^2 shall be based on linear interpolation of data between consecutive tested surface loading rates.

3.2.3 Sediment removal efficiency for surface loading rates less than the lowest tested surface loading rate of 40 L/min/m^2 shall be assumed to be identical to the sediment removal efficiency at 40 L/min/m^2. No extrapolation shall be allowed that results in a sediment removal efficiency that is greater than that demonstrated at 40 L/min/m^2.

3.2.4 Sediment removal efficiency for surface loading rates greater than the highest tested surface loading rate of 1400 L/min/m^2 shall assume zero sediment removal for the portion of flow that exceeds 1400 L/min/m^2, and shall be calculated using a simple proportioning formula, with 1400 L/min/m^2 in the numerator and the higher surface loading rate in the denominator, and multiplying the resulting fraction times the sediment removal efficiency at 1400 L/min/m^2.

The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 2.1.

3.3 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of third-party scour testing conducted in

accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.**

3.3.1 To be acceptable for on-line installation, the OGS device must demonstrate an average scour test effluent concentration less than 10 mg/L at each surface loading rate tested, up to and including 2600 L/min/m^2.

3.4 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party Light Liquid Re-entrainment Simulation Testing in accordance with the Canadian ETV **Program's Procedure for Laboratory Testing of Oil-Grit Separators,** with results reported within the Canadian ETV or ISO 14034 ETV verification. This re-entrainment testing is conducted with the device pre-loaded with low density polyethylene (LDPE) plastic beads as a surrogate for light liquids such as oil and fuel. Testing is conducted on the same OGS unit tested for sediment removal to assess whether light liquids captured after a spill are effectively retained at high flow rates.

3.4.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m^2 to 2600 L/min/m^2) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.** However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.

STANDARD PERFORMANCE SPECIFICATION FOR "OIL GRIT SEPARATOR" (OGS) STORMWATER QUALITY TREAMENT DEVICE

PART 1 – GENERAL

1.1 WORK INCLUDED

This section specifies requirements for selecting, sizing, and designing an underground Oil Grit Separator (OGS) device for stormwater quality treatment, with third-party testing results and a Statement of Verification in accordance with ISO 14034 Environmental Management – Environmental Technology Verification (ETV).

1.2 REFERENCE STANDARDS & PROCEDURES

ISO 14034:2016 Environmental management – Environmental technology verification (ETV)

Canadian Environmental Technology Verification (ETV) Program's **Procedure for Laboratory Testing of Oil-Grit Separators**

1.3 SUBMITTALS

1.3.1 All submittals, including sizing reports & shop drawings, shall be submitted upon request with each order to the contractor then forwarded to the Engineer of Record for review and acceptance. Shop drawings shall detail all OGS components, elevations, and sequence of construction.

1.3.2 Alternative devices shall have features identical to or greater than the specified device, including: treatment chamber diameter, treatment chamber wet volume, sediment storage volume, and oil storage volume.

1.3.3 Unless directed otherwise by the Engineer of Record, OGS stormwater quality treatment product substitutions or alternatives submitted within ten days prior to project bid shall not be accepted. All alternatives or substitutions submitted shall be signed and sealed by a local registered Professional Engineer, based on the exact same criteria detailed in Section 3, in entirety, subject to review and approval by the Engineer of Record.

PART 2 – PRODUCTS

2.1 OGS POLLUTANT STORAGE

The OGS device shall include a sump for sediment storage, and a protected volume for the capture and storage of petroleum hydrocarbons and buoyant gross pollutants. The **minimum** sediment & petroleum hydrocarbon storage capacity shall be as follows:

2.1.1

4ft (1219mm) Diameter OGS Units:	1.19m^3 sediment / 265L oil
6ft (1829mm) Diameter OGS Units:	3.48m^3 sediment / 609Ll oil
8ft (2438mm) Diameter OGS Units:	8.78m^3 sediment / 1,071L oil
10ft (3048mm) Diameter OGS Units:	17.78m^3 sediment / 1,673L oil
12ft (3657mm) Diameter OGS Units:	31.23m^3 sediment / 2,476L oil

PART 3 – PERFORMANCE & DESIGN

3.1 GENERAL

The OGS stormwater quality treatment device shall be verified in accordance with ISO 14034:2016 Environmental management – Environmental technology verification (ETV). The OGS stormwater quality

treatment device shall remove oil, sediment and gross pollutants from stormwater runoff during frequent wet weather events, and retain these pollutants during less frequent high flow wet weather events below the insert within the OGS for later removal during maintenance. The Manufacturer shall have at least ten (10) years of local experience, history and success in engineering design, manufacturing and production and supply of OGS stormwater quality treatment device systems, acceptable to the Engineer of Record.

3.2 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in the sizing report for the specified device. Sizing shall be determined using historical rainfall data and a sediment removal performance curve derived from the actual third-party verified laboratory testing data. The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 2.1.

3.3 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of third-party scour testing conducted in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**.

3.3.1 To be acceptable for on-line installation, the OGS device must demonstrate an average scour test effluent concentration less than 10 mg/L at each surface loading rate tested, up to and including 2600 L/min/m^2.

3.4 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party Light Liquid Re-entrainment Simulation Testing in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**, with results reported within the Canadian ETV or ISO 14034 ETV verification. This re-entrainment testing is conducted with the device pre-loaded with low density polyethylene (LDPE) plastic beads as a surrogate for light liquids such as oil and fuel. Testing is conducted on the same OGS unit tested for sediment removal to assess whether light liquids captured after a spill are effectively retained at high flow rates.

3.4.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m^2 to 2600 L/min/m^2) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**. However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.

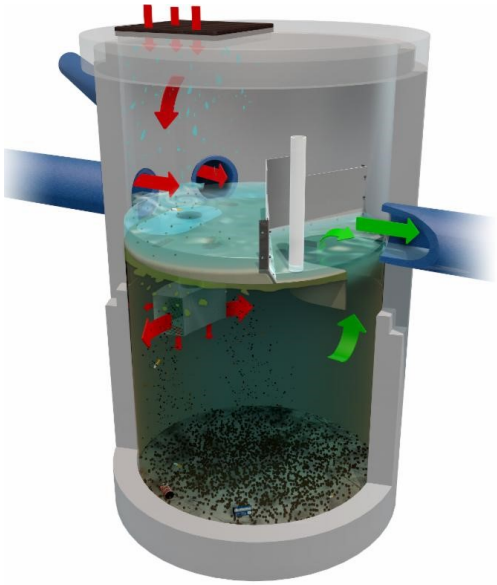
We've got you covered!

Forterra Stormceptor® Products now include a 5 year Quality Assurance Program.

Maintenance costs for Forterra's industry leading line of Stormceptor® products are already much lower than competitive stormwater quality devices. Now we've sweetened the deal by introducing a new Quality Assurance Program that covers maintenance for up to 5 years.

Improving products, improving service.

We've recently expanded our already impressive line of Stormceptor® products with the addition of the Stormceptor® EF series – *simply the most cost competitive stormwater quality device on the market*. Now we're improving our service by taking care of the maintenance on our entire Stormceptor product line for 5 years after installation.



At Forterra, we understand that maintaining a high standard of water quality is crucial to the environment and to our lives. That's why, for the past 10 years, we've included a 2 year maintenance plan with every Stormceptor unit sold. As maintenance becomes more of a focus for many municipalities, we felt it was time to strengthen the program even further. We are now offering a complimentary 5 year maintenance program with every Stormceptor unit to ensure water quality continues to be at its best.

Stormceptor® Quality Assurance Program

Based on initial inspection results, there are two ways to ensure Stormceptor® performance:

First way *(5 years, no cleaning)*

- Six inspections over a 5 year period, with no cleaning required
- First inspection at 6 months, inspections every 12 months thereafter for 5 years
- Oil and sediment levels are documented along with maintenance recommendations, if necessary

Second way *(2.5 years, with cleaning)*

- Initial inspection and one post construction sediment cleaning at 6 months
- Two additional annual inspections, resulting in the unit being maintained for the first 30 months (2.5 years)

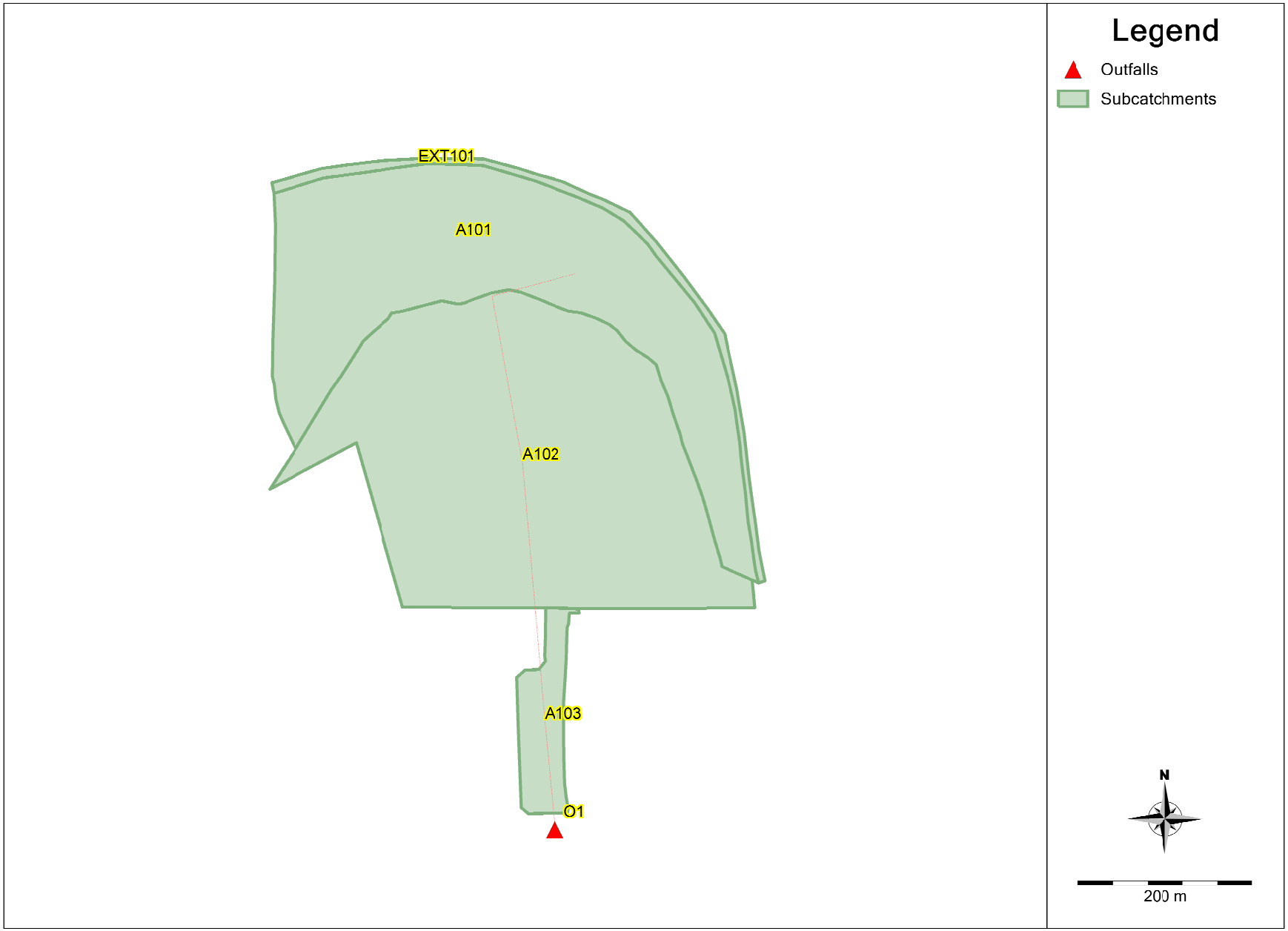
We're taking care of your maintenance needs so you can focus on your next project. Trust Forterra to help you weather the storm.

Stormceptor®

FORTERRA

APPENDIX F

PCSWMM Pre-Development Conditions Layout
PCSWMM Pre-Development Modelling Results


EXT101
A101
A102
A103
O1
Legend
Outfalls
Subcatchments
N
200 m

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 4
Number of nodes 1
Number of links 0
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
StThomas	St.Thomas-2yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A101	6.48	771.79	0.00	30.0000	StThomas	A102
A102	8.89	455.90	25.00	3.0000	StThomas	A103
A103	0.75	51.94	25.00	3.0000	StThomas	O1
EXT101	0.49	613.75	100.00	2.0000	StThomas	A101

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
O1	OUTFALL	178.00	0.00	0.0	

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.

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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CMS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Surcharge Method ......... EXTRAN
  Starting Date ............ 01/01/2015 00:00:00
  Ending Date .............. 01/02/2015 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:01:00
  Wet Time Step ............ 00:01:00
  Dry Time Step ............ 00:01:00


  **************************        Volume         Depth
  Runoff Quantity Continuity     hectare-m            mm
  **************************     ---------       -------
  Total Precipitation ......         0.439        26.441
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         0.353        21.240
  Surface Runoff ...........         0.065         3.905
  Final Storage ............         0.022         1.301
  Continuity Error (%) .....        -0.019


  **************************        Volume        Volume
  Flow Routing Continuity        hectare-m      10^6 ltr
  **************************     ---------     ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         0.065         0.649
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........         0.065         0.649
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.000         0.000
  Final Stored Volume ......         0.000         0.000
  Continuity Error (%) .....         0.000


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ------------------------------------------------------------------------------------
-------------------------------------------
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
A101	26.44	1.89	0.00	27.08	0.00	0.00	0.00	0.00	0.00	0.000
A102	26.44	0.00	0.00	18.28	6.24	0.60	6.84	0.61	0.61	0.259
A103	26.44	81.34	0.00	19.75	26.59	60.14	86.73	0.65	0.29	0.805
EXT101	26.44	0.00	0.00	0.00	24.97	0.00	24.97	0.12	0.15	0.944

Analysis begun on: Tue Jul 19 10:13:54 2022
Analysis ended on: Tue Jul 19 10:13:54 2022
Total elapsed time: < 1 sec

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 4
Number of nodes 1
Number of links 0
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
StThomas	StThomas-5yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A101	6.48	771.79	0.00	30.0000	StThomas	A102
A102	8.89	455.90	25.00	3.0000	StThomas	A103
A103	0.75	51.94	25.00	3.0000	StThomas	O1
EXT101	0.49	613.75	100.00	2.0000	StThomas	A101

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
O1	OUTFALL	178.00	0.00	0.0	

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.

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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CMS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Surcharge Method ......... EXTRAN
  Starting Date ............ 01/01/2015 00:00:00
  Ending Date .............. 01/02/2015 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:01:00
  Wet Time Step ............ 00:01:00
  Dry Time Step ............ 00:01:00


  **************************        Volume         Depth
  Runoff Quantity Continuity     hectare-m            mm
  **************************     ---------       -------
  Total Precipitation ......         0.594        35.777
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         0.448        26.950
  Surface Runoff ...........         0.125         7.535
  Final Storage ............         0.022         1.300
  Continuity Error (%) .....        -0.020


  **************************        Volume        Volume
  Flow Routing Continuity        hectare-m      10^6 ltr
  **************************     ---------      ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         0.125         1.252
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........         0.125         1.252
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.000         0.000
  Final Stored Volume ......         0.000         0.000
  Continuity Error (%) .....         0.000


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ------------------------------------------------------------------------------------
-------------------------------------------
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
A101	35.78	2.60	0.00	34.44	0.00	2.68	2.68	0.17	0.03	0.070
A102	35.78	1.96	0.00	23.17	9.07	4.19	13.25	1.18	0.85	0.351
A103	35.78	157.50	0.00	24.65	47.96	119.37	167.34	1.25	0.44	0.866
EXT101	35.78	0.00	0.00	0.00	34.31	0.00	34.31	0.17	0.21	0.959

Analysis begun on: Tue Jul 19 10:15:37 2022
Analysis ended on: Tue Jul 19 10:15:37 2022
Total elapsed time: < 1 sec

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 4
Number of nodes 1
Number of links 0
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
StThomas	St.Thomas-10yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A101	6.48	771.79	0.00	30.0000	StThomas	A102
A102	8.89	455.90	25.00	3.0000	StThomas	A103
A103	0.75	51.94	25.00	3.0000	StThomas	O1
EXT101	0.49	613.75	100.00	2.0000	StThomas	A101

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
O1	OUTFALL	178.00	0.00	0.0	

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.

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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CMS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Surcharge Method ......... EXTRAN
  Starting Date ............ 01/01/2015 00:00:00
  Ending Date .............. 01/02/2015 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:01:00
  Wet Time Step ............ 00:01:00
  Dry Time Step ............ 00:01:00


  **************************        Volume         Depth
  Runoff Quantity Continuity     hectare-m            mm
  **************************     ---------       -------
  Total Precipitation ......         0.696        41.892
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         0.495        29.822
  Surface Runoff ...........         0.179        10.777
  Final Storage ............         0.022         1.301
  Continuity Error (%) .....        -0.022


  **************************        Volume        Volume
  Flow Routing Continuity        hectare-m      10^6 ltr
  **************************     ---------      ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         0.179         1.790
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........         0.179         1.790
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.000         0.000
  Final Stored Volume ......         0.000         0.000
  Continuity Error (%) .....         0.000


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ------------------------------------------------------------------------------------
-------------------------------------------
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
A101	41.89	3.06	0.00	37.95	0.00	5.74	5.74	0.37	0.07	0.128
A102	41.89	4.19	0.00	25.76	11.15	7.86	19.02	1.69	1.02	0.413
A103	41.89	226.01	0.00	27.28	66.63	172.72	239.34	1.79	0.56	0.893
EXT101	41.89	0.00	0.00	0.00	40.43	0.00	40.43	0.20	0.25	0.965

Analysis begun on: Tue Jul 19 10:16:26 2022
Analysis ended on: Tue Jul 19 10:16:26 2022
Total elapsed time: < 1 sec

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 4
Number of nodes 1
Number of links 0
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
StThomas	St.Thomas-25yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A101	6.48	771.79	0.00	30.0000	StThomas	A102
A102	8.89	455.90	25.00	3.0000	StThomas	A103
A103	0.75	51.94	25.00	3.0000	StThomas	O1
EXT101	0.49	613.75	100.00	2.0000	StThomas	A101

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
O1	OUTFALL	178.00	0.00	0.0	

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.

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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CMS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Surcharge Method ......... EXTRAN
  Starting Date ............ 01/01/2015 00:00:00
  Ending Date .............. 01/02/2015 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:01:00
  Wet Time Step ............ 00:01:00
  Dry Time Step ............ 00:01:00


  **************************        Volume         Depth
  Runoff Quantity Continuity     hectare-m            mm
  **************************     ---------       -------
  Total Precipitation ......         0.826        49.745
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         0.549        33.069
  Surface Runoff ...........         0.256        15.393
  Final Storage ............         0.022         1.295
  Continuity Error (%) .....        -0.024


  **************************        Volume        Volume
  Flow Routing Continuity        hectare-m      10^6 ltr
  **************************     ---------      ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         0.256         2.557
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........         0.256         2.557
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.000         0.000
  Final Stored Volume ......         0.000         0.000
  Continuity Error (%) .....         0.000


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ---------------------------------------------------------------------------------------
-------------------------------------------
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
A101	49.75	3.66	0.00	42.02	0.00	10.13	10.13	0.66	0.14	0.190
A102	49.75	7.39	0.00	28.61	13.92	13.30	27.22	2.42	1.24	0.476
A103	49.75	323.57	0.00	30.18	92.98	248.88	341.86	2.56	0.71	0.916
EXT101	49.75	0.00	0.00	0.00	48.29	0.00	48.29	0.24	0.30	0.971

Analysis begun on: Tue Jul 19 10:18:03 2022
Analysis ended on: Tue Jul 19 10:18:03 2022
Total elapsed time: < 1 sec

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 4
Number of nodes 1
Number of links 0
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
StThomas	St.Thomas-50yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A101	6.48	771.79	0.00	30.0000	StThomas	A102
A102	8.89	455.90	25.00	3.0000	StThomas	A103
A103	0.75	51.94	25.00	3.0000	StThomas	O1
EXT101	0.49	613.75	100.00	2.0000	StThomas	A101

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
O1	OUTFALL	178.00	0.00	0.0	

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.

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

  ****************
  Analysis Options
  ****************
  Flow Units ............... CMS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Surcharge Method ......... EXTRAN
  Starting Date ............ 01/01/2015 00:00:00
  Ending Date .............. 01/02/2015 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:01:00
  Wet Time Step ............ 00:01:00
  Dry Time Step ............ 00:01:00


  **************************        Volume         Depth
  Runoff Quantity Continuity     hectare-m            mm
  **************************     ---------       -------
  Total Precipitation ......         0.921        55.420
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         0.585        35.200
  Surface Runoff ...........         0.315        18.934
  Final Storage ............         0.022         1.300
  Continuity Error (%) .....        -0.027


  **************************        Volume        Volume
  Flow Routing Continuity        hectare-m      10^6 ltr
  **************************     ---------      ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         0.315         3.145
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........         0.315         3.145
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.000         0.000
  Final Stored Volume ......         0.000         0.000
  Continuity Error (%) .....         0.000


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ------------------------------------------------------------------------------------
-------------------------------------------
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
A101	55.42	4.09	0.00	44.72	0.00	13.54	13.54	0.88	0.22	0.228
A102	55.42	9.88	0.00	30.46	15.96	17.56	33.52	2.98	1.42	0.513
A103	55.42	398.44	0.00	32.10	113.12	307.38	420.51	3.15	0.83	0.927
EXT101	55.42	0.00	0.00	0.00	53.97	0.00	53.97	0.26	0.34	0.974

Analysis begun on: Tue Jul 19 10:17:30 2022
Analysis ended on: Tue Jul 19 10:17:30 2022
Total elapsed time: < 1 sec

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 4
Number of nodes 1
Number of links 0
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
StThomas	St.Thomas-100yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A101	6.48	771.79	0.00	30.0000	StThomas	O1
A102	8.89	455.90	25.00	3.0000	StThomas	O1
A103	0.75	51.94	25.00	3.0000	StThomas	O1
EXT101	0.49	613.75	100.00	2.0000	StThomas	O1

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
O1	OUTFALL	178.00	0.00	0.0	

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.

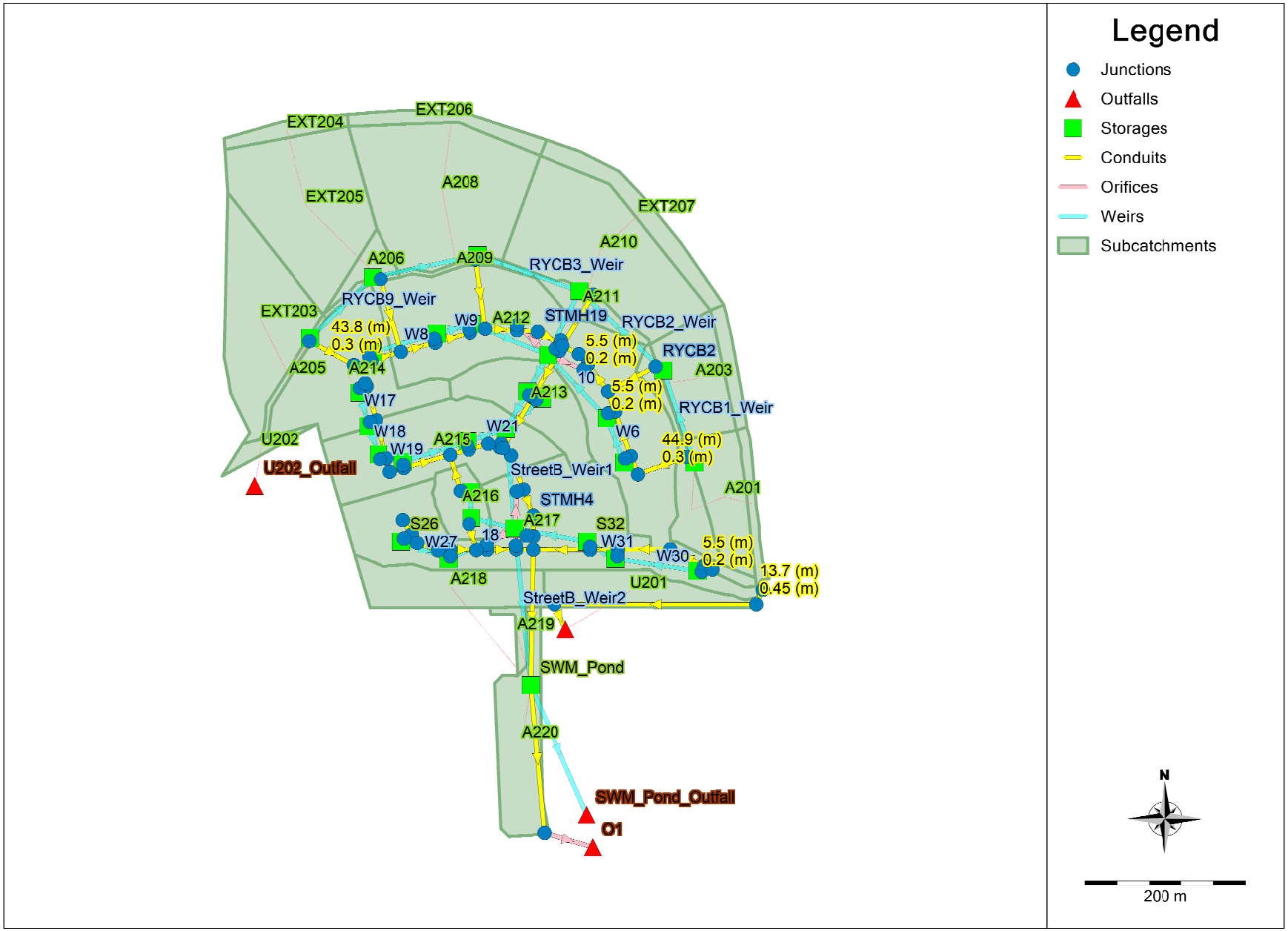
```
  ************************************************************

  ****************
  Analysis Options
  ****************
  Flow Units ............... CMS
  Process Models:
    Rainfall/Runoff ........ YES
    RDII ................... NO
    Snowmelt ............... NO
    Groundwater ............ NO
    Flow Routing ........... NO
    Water Quality .......... NO
  Infiltration Method ...... CURVE_NUMBER
  Surcharge Method ......... EXTRAN
  Starting Date ............ 01/01/2015 00:00:00
  Ending Date .............. 01/02/2015 00:00:00
  Antecedent Dry Days ...... 0.0
  Report Time Step ......... 00:01:00
  Wet Time Step ............ 00:01:00
  Dry Time Step ............ 00:01:00


  **************************        Volume         Depth
  Runoff Quantity Continuity     hectare-m            mm
  **************************     ---------       -------
  Total Precipitation ......         1.019        61.315
  Evaporation Loss .........         0.000         0.000
  Infiltration Loss ........         0.612        36.827
  Surface Runoff ...........         0.385        23.206
  Final Storage ............         0.022         1.296
  Continuity Error (%) .....        -0.022


  **************************        Volume        Volume
  Flow Routing Continuity        hectare-m      10^6 ltr
  **************************     ---------      ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         0.385         3.855
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........         0.385         3.855
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.000         0.000
  Final Stored Volume ......         0.000         0.000
  Continuity Error (%) .....         0.000


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ------------------------------------------------------------------------------------
-------------------------------------------
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
A101	61.32	0.00	0.00	47.24	0.00	12.82	12.82	0.83	0.19	0.209
A102	61.32	0.00	0.00	31.74	14.97	13.32	28.29	2.51	1.60	0.461
A103	61.32	0.00	0.00	31.27	14.97	13.78	28.75	0.22	0.14	0.469
EXT101	61.32	0.00	0.00	0.00	59.87	0.00	59.87	0.29	0.38	0.976

Analysis begun on: Thu Jul 14 15:10:36 2022
Analysis ended on: Thu Jul 14 15:10:36 2022
Total elapsed time: < 1 sec

APPENDIX G

PCSWMM Post-Development Conditions Layout
PCSWMM Post-Development Modelling Results


EXT204
EXT206
EXT205
A208
EXT207
A210
A206
A209
RYCB3_Weir
A211
EXT203
RYCB9_Weir
W9
A212
STMH19
RYCB2_Weir
43.8 (m)
0.3 (m)
W8
5.5 (m)
0.2 (m)
RYCB2
A205
A214
10
A203
5.5 (m)
0.2 (m)
A213
W17
RYCB1_Weir
W18
W21
W6
U202
A215
44.9 (m)
0.3 (m)
W19
U202_Outfall
StreetB_Weir1
A201
A216
STMH4
A217
S26
S32
W27
18
W31
5.5 (m)
0.2 (m)
W30
13.7 (m)
0.45 (m)
A218
U201
StreetB_Weir2
A219
SWM_Pond
A220
SWM_Pond_Outfall
O1
Legend
Junctions
Outfalls
Storages
Conduits
Orifices
Weirs
Subcatchments
N
200 m

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

SBM-18-0530 Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 29
Number of nodes 118
Number of links 149
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
St.ThomasRainGage	St.Thomas2Yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A201	0.43	95.56	0.00	30.0000	St.ThomasRainGage	A202
A202	0.22	24.44	45.71	2.0000	St.ThomasRainGage	RYCB1_Storage
A203	0.51	87.93	0.00	30.0000	St.ThomasRainGage	A204
A204	0.08	42.11	45.71	2.0000	St.ThomasRainGage	RYCB2_Storage
A205	0.05	100.00	45.71	2.0000	St.ThomasRainGage	RYCB9_Storage
A206	0.12	7.50	25.00	30.0000	St.ThomasRainGage	A207
A207	0.03	60.00	45.71	2.0000	St.ThomasRainGage	RYCB8_Storage
A208	1.52	119.68	25.00	30.0000	St.ThomasRainGage	A209
A209	0.04	80.00	45.71	2.0000	St.ThomasRainGage	RYCB3_Storage
A210	1.36	143.16	25.00	30.0000	St.ThomasRainGage	A211
A211	0.19	63.33	45.71	2.0000	St.ThomasRainGage	A211_Storage
A212	2.46	144.71	45.71	2.0000	St.ThomasRainGage	StreetA_Storage

A213	0.55	78.57	45.71	2.0000	St.ThomasRainGage StreetB_Storage1
A214	0.99	79.20	45.71	2.0000	St.ThomasRainGage S19
A215	1.09	82.58	46.70	2.0000	St.ThomasRainGage StreetB_Storage1
A216	0.25	100.00	64.29	2.0000	St.ThomasRainGage RYCB7_Storage
A217	1.85	97.37	48.65	2.0000	St.ThomasRainGage StreetB_Storage2
A218	0.54	40.00	45.71	2.0000	St.ThomasRainGage SWM_Pond
A219	0.06	75.00	0.00	2.0000	St.ThomasRainGage SWM_Pond
A220	0.58	193.33	21.43	8.0000	St.ThomasRainGage SWM_Pond
EXT201	0.11	137.50	71.43	2.0000	St.ThomasRainGage A201
EXT202	0.12	150.00	71.43	2.0000	St.ThomasRainGage A203
EXT203	0.95	73.08	0.00	30.0000	St.ThomasRainGage A205
EXT204	0.12	150.00	71.43	2.0000	St.ThomasRainGage EXT205
EXT205	1.26	78.75	0.00	30.0000	St.ThomasRainGage A206
EXT206	0.20	250.00	71.43	2.0000	St.ThomasRainGage A208
EXT207	0.30	375.00	71.43	2.0000	St.ThomasRainGage A210
U201	0.44	44.00	0.00	3.0000	St.ThomasRainGage U201_Outfall
U202	0.08	47.06	45.71	6.0000	St.ThomasRainGage U202_Outfall

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
0	JUNCTION	178.14	1.99	0.0	
4	JUNCTION	178.17	1.87	0.0	
41	JUNCTION	179.05	1.85	0.0	
42	JUNCTION	179.35	1.75	0.0	
43	JUNCTION	178.68	1.97	0.0	
44	JUNCTION	178.46	2.06	0.0	
45	JUNCTION	178.58	2.15	0.0	
46	JUNCTION	178.92	2.15	0.0	
47	JUNCTION	178.80	2.11	0.0	
48	JUNCTION	178.28	2.20	0.0	
49	JUNCTION	178.00	2.07	0.0	
50	JUNCTION	178.07	2.12	0.0	
51	JUNCTION	178.59	1.89	0.0	
52	JUNCTION	179.24	1.80	0.0	
53	JUNCTION	179.06	1.83	0.0	
54	JUNCTION	178.87	1.71	0.0	
55	JUNCTION	177.86	2.26	0.0	

56	JUNCTION	177.79	2.12	0.0
57	JUNCTION	179.17	1.97	0.0
58	JUNCTION	179.80	2.40	0.0
59	JUNCTION	183.47	1.73	0.0
60	JUNCTION	178.27	1.90	0.0
61	JUNCTION	178.42	1.90	0.0
63	JUNCTION	178.72	1.76	0.0
64	JUNCTION	179.12	2.01	0.0
CB1	JUNCTION	183.90	1.25	0.0
CB12	JUNCTION	179.02	1.25	0.0
CB14	JUNCTION	179.22	1.25	0.0
CB17	JUNCTION	179.59	1.25	0.0
CB19	JUNCTION	179.74	1.25	0.0
CB2	JUNCTION	179.18	1.25	0.0
CB21	JUNCTION	179.77	1.25	0.0
CB23	JUNCTION	179.61	1.25	0.0
CB25	JUNCTION	179.41	1.25	0.0
CB28	JUNCTION	179.35	1.25	0.0
CB3	JUNCTION	180.90	1.25	0.0
CB31	JUNCTION	179.60	1.25	0.0
CB33	JUNCTION	179.80	1.25	0.0
CB39	JUNCTION	178.83	1.25	0.0
CB42	JUNCTION	178.74	1.25	0.0
CB43	JUNCTION	179.84	1.25	0.0
CB44	JUNCTION	179.86	1.25	0.0
CB5	JUNCTION	178.89	1.25	0.0
CB7	JUNCTION	178.88	1.25	0.0
CBMH8	JUNCTION	178.82	1.75	0.0
DCB15	JUNCTION	179.28	1.25	0.0
DCB26	JUNCTION	179.22	1.25	0.0
DCB27	JUNCTION	179.22	1.25	0.0
DCB37	JUNCTION	178.61	1.25	0.0
DCB40	JUNCTION	178.76	1.25	0.0
MDMH1	JUNCTION	180.92	5.84	0.0
MDMH2	JUNCTION	179.76	5.54	0.0
MDMH3	JUNCTION	177.75	1.86	0.0
OGS	JUNCTION	177.78	2.22	0.0
RYCB1	JUNCTION	180.03	1.60	0.0
RYCB2	JUNCTION	179.43	1.65	0.0
RYCB3	JUNCTION	179.67	1.86	0.0
RYCB4	JUNCTION	178.86	1.25	0.0
RYCB5	JUNCTION	178.85	1.26	0.0
RYCB6	JUNCTION	178.50	1.55	0.0
RYCB7	JUNCTION	178.51	1.44	0.0
RYCB8	JUNCTION	180.32	2.12	0.0
RYCB9	JUNCTION	181.81	1.55	0.0
STMH1	JUNCTION	176.97	2.49	0.0
STMH10	JUNCTION	178.12	2.16	0.0
STMH11	JUNCTION	178.32	1.89	0.0
STMH12	JUNCTION	178.47	1.91	0.0
STMH13	JUNCTION	178.65	1.82	0.0
STMH14	JUNCTION	178.81	1.80	0.0
STMH15	JUNCTION	178.03	2.06	0.0
STMH16	JUNCTION	179.48	1.88	0.0
STMH17	JUNCTION	178.70	1.95	0.0
STMH18	JUNCTION	179.26	1.80	0.0
STMH19	JUNCTION	178.52	2.07	0.0

STMH2	JUNCTION	183.83	1.75	0.0
STMH20	JUNCTION	178.66	2.17	0.0
STMH21	JUNCTION	179.16	2.07	0.0
STMH22	JUNCTION	178.59	1.98	0.0
STMH23	JUNCTION	178.83	1.95	0.0
STMH3	JUNCTION	179.04	2.18	0.0
STMH4	JUNCTION	177.81	2.17	0.0
STMH5	JUNCTION	177.89	2.21	0.0
STMH6	JUNCTION	177.94	2.13	0.0
STMH7	JUNCTION	178.30	2.23	0.0
STMH9	JUNCTION	181.06	2.61	0.0
O1	OUTFALL	176.95	0.00	0.0
SWM_Pond_Outfall	OUTFALL	178.90	0.00	0.0
U201_Outfall	OUTFALL	177.71	0.68	0.0
U202_Outfall	OUTFALL	183.25	0.00	0.0
A211_Storage	STORAGE	180.57	0.45	0.0
RYCB1_Storage	STORAGE	181.63	0.45	0.0
RYCB2_Storage	STORAGE	181.08	0.38	0.0
RYCB3_Storage	STORAGE	181.53	0.45	0.0
RYCB4_Storage	STORAGE	180.11	0.45	0.0
RYCB5_Storage	STORAGE	180.11	0.45	0.0
RYCB6_Storage	STORAGE	180.05	0.27	0.0
RYCB7_Storage	STORAGE	179.95	0.39	0.0
RYCB8_Storage	STORAGE	182.44	0.45	0.0
RYCB9_Storage	STORAGE	183.36	0.13	0.0
S12	STORAGE	181.05	0.30	0.0
S13	STORAGE	180.85	0.30	0.0
S19	STORAGE	180.99	0.30	0.0
S20	STORAGE	180.84	0.30	0.0
S21	STORAGE	180.53	0.30	0.0
S22	STORAGE	180.43	0.29	0.0
S23	STORAGE	180.14	0.29	0.0
S26	STORAGE	180.47	0.30	0.0
S27	STORAGE	180.27	0.30	0.0
S30	STORAGE	185.15	0.30	0.0
S31	STORAGE	182.15	0.30	0.0
S32	STORAGE	181.09	0.30	0.0
S7	STORAGE	181.11	0.30	0.0
S8	STORAGE	181.02	0.30	0.0
S9	STORAGE	180.86	0.30	0.0
StreetA_Storage	STORAGE	180.47	0.30	0.0
StreetB_Storage1	STORAGE	180.01	0.29	0.0
StreetB_Storage2	STORAGE	179.86	0.29	0.0
SWM_Pond	STORAGE	177.02	1.89	0.0

****
Link Summary
****

Name	From Node	To Node	Type	Length	% Slope	Roughness
4	RYCB6	STMH11	CONDUIT	22.4	0.8036	0.0130
C1	MDMH1	MDMH2	CONDUIT	13.7	8.4977	0.0130

C10	43	STMH22	CONDUIT	11.1	0.8116	0.0130
C11	STMH22	STMH7	CONDUIT	15.2	1.9082	0.0130
C12	CBMH8	STMH7	CONDUIT	50.5	1.0298	0.0130
C13	RYCB9	STMH21	CONDUIT	43.8	6.0613	0.0130
C14	STMH21	64	CONDUIT	14.9	0.2676	0.0130
C15	64	STMH3	CONDUIT	27.2	0.2947	0.0130
C16	RYCB8	STMH3	CONDUIT	65.0	1.9696	0.0130
C17	STMH3	46	CONDUIT	30.6	0.3919	0.0130
C18	46	47	CONDUIT	29.7	0.4040	0.0130
C19	47	STMH20	CONDUIT	14.4	0.9736	0.0130
C2	MDMH2	MDMH3	CONDUIT	172.8	1.1633	0.0130
C20	RYCB3	STMH20	CONDUIT	59.7	1.6920	0.0130
C21	STMH20	45	CONDUIT	26.4	0.3029	0.0130
C22	45	STMH19	CONDUIT	18.5	0.3245	0.0130
C23	STMH19	44	CONDUIT	21.1	0.2848	0.0130
C24	44	STMH7	CONDUIT	3.6	4.4120	0.0130
C25	STMH7	48	CONDUIT	6.3	0.3180	0.0130
C26	48	0	CONDUIT	45.5	0.3076	0.0130
C27	RYCB4	0	CONDUIT	5.5	13.2045	0.0130
C28	RYCB5	0	CONDUIT	5.5	13.0180	0.0130
C29	0	STMH6	CONDUIT	50.4	0.3968	0.0130
C3	MDMH3	U201_Outfall	CONDUIT	6.0	0.6667	0.0130
C30	STMH18	52	CONDUIT	2.8	0.7169	0.0130
C31	52	53	CONDUIT	30.5	0.5909	0.0130
C32	53	54	CONDUIT	32.9	0.5772	0.0130
C33	54	STMH17	CONDUIT	12.7	1.3355	0.0130
C34	STMH17	51	CONDUIT	10.7	1.0243	0.0130
C35	51	STMH10	CONDUIT	42.3	1.1122	0.0130
C36	RYCB7	STMH10	CONDUIT	32.5	1.2001	0.0130
C37	STMH10	50	CONDUIT	16.8	0.2971	0.0130

C38		50	STMH15	CONDUIT	18.1
0.2214	0.0130				
C39		STMH15	49	CONDUIT	10.3
0.2921	0.0130				
C4		RYCB1	STMH16	CONDUIT	44.9
1.2250	0.0130				
C40		49	STMH6	CONDUIT	2.1
2.8180	0.0130				
C41		STMH6	STMH5	CONDUIT	9.8
0.5102	0.0130				
C42		STMH5	55	CONDUIT	30.7
0.0978	0.0130				
C43		55	STMH4	CONDUIT	24.2
0.2063	0.0130				
C44		STMH4	56	CONDUIT	18.5
0.1082	0.0130				
C45		56	OGS	CONDUIT	10.7
0.0933	0.0130				
C46		STMH14	63	CONDUIT	15.1
0.5956	0.0130				
C47		63	STMH13	CONDUIT	8.2
0.8547	0.0130				
C48		STMH13	STMH12	CONDUIT	18.2
0.9891	0.0130				
C49		STMH12	61	CONDUIT	11.4
0.4371	0.0130				
C5		STMH16	42	CONDUIT	16.8
0.7729	0.0130				
C50		61	STMH11	CONDUIT	22.0
0.4546	0.0130				
C51		STMH11	60	CONDUIT	10.4
0.4794	0.0130				
C52		60	4	CONDUIT	23.5
0.4248	0.0130				
C53		STMH2	59	CONDUIT	7.5
4.8249	0.0130				
C54		59	STMH9	CONDUIT	32.3
7.4752	0.0130				
C55		STMH9	58	CONDUIT	45.7
2.7594	0.0130				
C56		58	57	CONDUIT	23.0
2.7437	0.0130				
C57		57	OGS	CONDUIT	48.8
2.8524	0.0130				
C58		OGS	SWM_Pond	CONDUIT	117.7
0.6457	0.0130				
C59		4	OGS	CONDUIT	14.8
2.6307	0.0130				
C6		42	41	CONDUIT	40.5
0.7406	0.0130				
C60		SWM_Pond	STMH1	CONDUIT	14.9
0.3356	0.0130				
C62		CB33	42	CONDUIT	5.5
8.2093	0.0130				
C63		CB31	41	CONDUIT	5.5
10.0504	0.0130				
C64		CB28	43	CONDUIT	5.5
12.2732	0.0130				
C65		CB44	64	CONDUIT	5.5
13.5780	0.0130				

C66		CB21	46	CONDUIT	5.5
15.6425	0.0130				
C67		CB23	47	CONDUIT	5.5
14.8896	0.0130				
C68		CB25	45	CONDUIT	5.5
15.2657	0.0130				
C69		DCB27	44	CONDUIT	5.5
13.9520	0.0130				
C7		41	STMH23	CONDUIT	18.5
1.1912	0.0130				
C70		DCB26	48	CONDUIT	5.5
17.3461	0.0130				
C71		CB19	52	CONDUIT	5.5
9.1287	0.0130				
C72		CB17	53	CONDUIT	5.5
9.6814	0.0130				
C73		DCB15	54	CONDUIT	5.5
7.4753	0.0130				
C74		CB2	51	CONDUIT	5.5
10.7895	0.0130				
C75		CB5	50	CONDUIT	5.5
15.0776	0.0130				
C76		DCB40	49	CONDUIT	5.5
13.9520	0.0130				
C77		CB39	55	CONDUIT	5.5
17.9172	0.0130				
C78		DCB37	56	CONDUIT	5.5
15.0776	0.0130				
C79		CB14	63	CONDUIT	5.5
9.1287	0.0130				
C8		RYCB2	STMH23	CONDUIT	46.0
1.3045	0.0130				
C80		CB12	61	CONDUIT	5.5
10.9746	0.0130				
C81		CB7	60	CONDUIT	5.5
11.1598	0.0130				
C82		CB42	4	CONDUIT	5.5
10.4197	0.0130				
C83		CB1	59	CONDUIT	5.5
7.8422	0.0130				
C84		CB3	58	CONDUIT	5.5
20.4124	0.0130				
C85		CB43	57	CONDUIT	5.5
12.2732	0.0130				
C9		STMH23	43	CONDUIT	29.6
0.5066	0.0130				
1		RYCB1_Storage	RYCB1	ORIFICE	
100		S27	CB12	ORIFICE	
119		RYCB4_Storage	RYCB5	ORIFICE	
12		StreetB_Storage2	CB42	ORIFICE	
120		RYCB5_Storage	RYCB4	ORIFICE	
13		StreetB_Storage2	CB39	ORIFICE	
14		StreetB_Storage2	CB7	ORIFICE	
151		S26	CB14	ORIFICE	
2		STMH1	O1	ORIFICE	
3		StreetA_Storage	DCB27	ORIFICE	
37		S12	CB33	ORIFICE	
38		RYCB2_Storage	RYCB2	ORIFICE	
39		RYCB3_Storage	RYCB3	ORIFICE	

40	RYCB8_Storage	RYCB8	ORIFICE
41	RYCB9_Storage	RYCB9	ORIFICE
42	RYCB7_Storage	RYCB7	ORIFICE
43	A211_Storage	CBMH8	ORIFICE
5	RYCB6_Storage	RYCB6	ORIFICE
6	StreetA_Storage	CB25	ORIFICE
7	StreetA_Storage	DCB26	ORIFICE
8	StreetA_Storage	CB28	ORIFICE
80	S13	CB31	ORIFICE
85	S9	CB23	ORIFICE
86	S8	CB21	ORIFICE
87	S7	CB44	ORIFICE
88	S19	CB19	ORIFICE
89	S20	CB17	ORIFICE
90	S30	CB1	ORIFICE
91	S31	CB3	ORIFICE
92	S32	CB43	ORIFICE
94	StreetB_Storage2	DCB37	ORIFICE
96	StreetB_Storage1	DCB40	ORIFICE
97	S22	CB2	ORIFICE
98	S23	CB5	ORIFICE
99	S21	DCB15	ORIFICE
10	S13	StreetA_Storage	WEIR
18	S27	StreetB_Storage2	WEIR
19	S32	StreetB_Storage2	WEIR
9	S9	StreetA_Storage	WEIR
A211_Weir	A211_Storage	StreetA_Storage	WEIR
RYCB1_Weir	RYCB1_Storage	RYCB2_Storage	WEIR
RYCB2_Weir	RYCB2_Storage	A211_Storage	WEIR
RYCB3_Weir	RYCB3_Storage	A211_Storage	WEIR
RYCB4_Weir	RYCB4_Storage	StreetB_Storage1	WEIR
RYCB5_Weir	RYCB5_Storage	StreetB_Storage1	WEIR
RYCB6_Weir	RYCB6_Storage	StreetB_Storage2	WEIR
RYCB7_Weir	RYCB7_Storage	RYCB6_Storage	WEIR
RYCB8_Weir	RYCB8_Storage	RYCB3_Storage	WEIR
RYCB9_Weir	RYCB9_Storage	RYCB8_Storage	WEIR
StreetA_Weir	StreetA_Storage	RYCB4_Storage	WEIR
StreetB_Weir1	StreetB_Storage1	StreetB_Storage2	WEIR
StreetB_Weir2	StreetB_Storage2	SWM_Pond	WEIR
SWM_Pond_Weir	SWM_Pond	SWM_Pond_Outfall	WEIR
W17	S19	S20	WEIR
W18	S20	S21	WEIR
W19	S21	S22	WEIR
W20	S22	S23	WEIR
W21	S23	StreetB_Storage1	WEIR
W27	S26	S27	WEIR
W30	S30	S31	WEIR
W31	S31	S32	WEIR
W6	S12	S13	WEIR
W8	S7	S8	WEIR
W9	S8	S9	WEIR

****
Cross Section Summary
****

		Full	Full	Hyd.	Max.	No. of

Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
4	CIRCULAR	0.30	0.07	0.07	0.30	1	0.09
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.83
C10	CIRCULAR	0.45	0.16	0.11	0.45	1	0.26
C11	CIRCULAR	0.45	0.16	0.11	0.45	1	0.39
C12	CIRCULAR	0.45	0.16	0.11	0.45	1	0.29
C13	CIRCULAR	0.30	0.07	0.07	0.30	1	0.24
C14	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C15	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C16	CIRCULAR	0.30	0.07	0.07	0.30	1	0.14
C17	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C18	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C19	CIRCULAR	0.45	0.16	0.11	0.45	1	0.28
C2	CIRCULAR	0.60	0.28	0.15	0.60	1	0.66
C20	CIRCULAR	0.38	0.11	0.09	0.38	1	0.23
C21	CIRCULAR	0.53	0.22	0.13	0.53	1	0.24
C22	CIRCULAR	0.53	0.22	0.13	0.53	1	0.25
C23	CIRCULAR	0.53	0.22	0.13	0.53	1	0.23
C24	CIRCULAR	0.53	0.22	0.13	0.53	1	0.90
C25	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C26	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C27	CIRCULAR	0.25	0.05	0.06	0.25	1	0.22
C28	CIRCULAR	0.25	0.05	0.06	0.25	1	0.21
C29	CIRCULAR	0.68	0.36	0.17	0.68	1	0.53
C3	CIRCULAR	0.68	0.36	0.17	0.68	1	0.69
C30	CIRCULAR	0.30	0.07	0.07	0.30	1	0.08
C31	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C32	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C33	CIRCULAR	0.30	0.07	0.07	0.30	1	0.11

C34	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C35	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C36	CIRCULAR	0.25	0.05	0.06	0.25	1
0.07						
C37	CIRCULAR	0.45	0.16	0.11	0.45	1
0.16						
C38	CIRCULAR	0.45	0.16	0.11	0.45	1
0.13						
C39	CIRCULAR	0.45	0.16	0.11	0.45	1
0.15						
C4	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C40	CIRCULAR	0.45	0.16	0.11	0.45	1
0.48						
C41	CIRCULAR	0.90	0.64	0.23	0.90	1
1.29						
C42	CIRCULAR	0.90	0.64	0.23	0.90	1
0.57						
C43	CIRCULAR	0.90	0.64	0.23	0.90	1
0.82						
C44	CIRCULAR	0.90	0.64	0.23	0.90	1
0.60						
C45	CIRCULAR	0.90	0.64	0.23	0.90	1
0.55						
C46	CIRCULAR	0.30	0.07	0.07	0.30	1
0.07						
C47	CIRCULAR	0.30	0.07	0.07	0.30	1
0.09						
C48	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C49	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C5	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C50	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C51	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C52	CIRCULAR	0.38	0.11	0.09	0.38	1
0.11						
C53	CIRCULAR	0.25	0.05	0.06	0.25	1
0.13						
C54	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C55	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C56	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C57	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C58	CIRCULAR	1.05	0.87	0.26	1.05	1
2.19						
C59	CIRCULAR	0.38	0.11	0.09	0.38	1
0.28						
C6	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C60	CIRCULAR	0.68	0.36	0.17	0.68	1
0.49						

C62	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C63	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C64	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C65	CIRCULAR	0.20	0.03	0.05	0.20	1
0.12						
C66	CIRCULAR	0.25	0.05	0.06	0.25	1
0.24						
C67	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C68	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C69	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C7	CIRCULAR	0.38	0.11	0.09	0.38	1
0.19						
C70	CIRCULAR	0.25	0.05	0.06	0.25	1
0.25						
C71	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C72	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C73	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C74	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C75	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C76	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C77	CIRCULAR	0.20	0.03	0.05	0.20	1
0.14						
C78	CIRCULAR	0.25	0.05	0.06	0.25	1
0.23						
C79	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C8	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C80	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C81	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C82	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C83	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C84	CIRCULAR	0.20	0.03	0.05	0.20	1
0.15						
C85	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C9	CIRCULAR	0.45	0.16	0.11	0.45	1
0.20						

****

NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,

not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 12/11/2020 00:00:00
Ending Date 12/11/2020 03:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:01:00
Routing Time Step ..... 30.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 1
Head Tolerance ..... 0.001500 m

**********	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
**********	---	---
Total Precipitation	0.436	26.414
Evaporation Loss	0.000	0.000
Infiltration Loss	0.196	11.864
Surface Runoff	0.153	9.283
Final Storage	0.087	5.283
Continuity Error (%)	-0.062	

**********	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
**********	---	---
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.153	1.530
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.149	1.490
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.004	0.038
Continuity Error (%)	0.154	

****
Time-Step Critical Elements
****
Link C40 (92.35%)
Link C24 (3.65%)
Link C69 (2.33%)

****
Highest Flow Instability Indexes
****
Link C45 (8)
Link C40 (6)
Link C58 (5)
Link C44 (4)
Link C39 (4)

****
Routing Time Step Summary
****
Minimum Time Step   :   0.50 sec
Average Time Step   :   1.18 sec
Maximum Time Step   :   30.00 sec
Percent in Steady State   :   0.00
Average Iterations per Step :   2.11
Percent Not Converging   :   0.91
Time Step Frequencies   :
   30.000 - 13.228 sec   :   0.08 %
   13.228 - 5.833 sec   :   0.00 %
    5.833 - 2.572 sec   :   2.35 %
    2.572 - 1.134 sec   :   45.83 %
    1.134 - 0.500 sec   :   51.75 %

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
A201	26.41	5.85	0.00	21.26	0.00	2.41	2.41	0.01	0.00	0.075
A202	26.41	4.67	0.00	7.41	13.29	5.41	18.70	0.04	0.03	0.602
A203	26.41	5.38	0.00	21.26	0.00	1.81	1.81	0.01	0.00	0.057
A204	26.41	11.38	0.00	7.41	16.47					

A205			26.41	0.00	0.00	7.41	11.38
4.72	16.10	0.01	0.01	0.609			
A206			26.41	0.00	0.00	15.94	6.20
0.00	6.20	0.01	0.01	0.235			
A207			26.41	24.79	0.00	7.41	22.70
18.09	40.79	0.01	0.01	0.797			
A208			26.41	3.01	0.00	15.94	6.96
0.05	7.01	0.11	0.13	0.238			
A209			26.41	266.01	0.00	7.41	132.93
148.55	281.48	0.11	0.13	0.963			
A210			26.41	5.05	0.00	15.94	7.47
1.03	8.51	0.12	0.12	0.270			
A211			26.41	60.73	0.00	7.41	38.98
36.11	75.09	0.14	0.12	0.862			
A212			26.41	0.00	0.00	7.41	11.18
3.02	14.20	0.35	0.27	0.538			
A213			26.41	0.00	0.00	7.41	11.28
3.88	15.16	0.08	0.07	0.574			
A214			26.41	0.00	0.00	7.41	11.22
3.36	14.58	0.14	0.12	0.552			
A215			26.41	0.00	0.00	7.27	11.46
3.26	14.72	0.16	0.13	0.557			
A216			26.41	0.00	0.00	4.87	15.93
2.98	18.90	0.05	0.05	0.716			
A217			26.41	0.00	0.00	7.01	11.87
2.79	14.67	0.27	0.21	0.555			
A218			26.41	0.00	0.00	7.41	11.21
3.28	14.49	0.08	0.06	0.549			
A219			26.41	0.00	0.00	13.64	0.00
8.38	8.38	0.01	0.00	0.317			
A220			26.41	0.00	0.00	16.01	5.33
1.32	6.65	0.04	0.04	0.252			
EXT201			26.41	0.00	0.00	1.24	17.75
5.15	22.90	0.03	0.03	0.867			
EXT202			26.41	0.00	0.00	1.24	17.75
5.15	22.90	0.03	0.03	0.867			
EXT203			26.41	0.00	0.00	21.26	0.00
0.00	0.00	0.00	0.00	0.000			
EXT204			26.41	0.00	0.00	1.24	17.75
5.15	22.90	0.03	0.03	0.867			
EXT205			26.41	2.18	0.00	21.26	0.00
0.00	0.00	0.00	0.00	0.000			
EXT206			26.41	0.00	0.00	1.24	17.75
5.15	22.90	0.05	0.06	0.867			
EXT207			26.41	0.00	0.00	1.24	17.75
5.15	22.90	0.07	0.09	0.867			
U201			26.41	0.00	0.00	20.38	0.00
0.71	0.71	0.00	0.00	0.027			
U202			26.41	0.00	0.00	7.41	11.37
4.63	16.00	0.01	0.01	0.606			

****
Node Depth Summary
****

	Average Depth	Maximum Depth	Maximum HGL	Time of Max Occurrence	Reported Max Depth

Node	Type	Meters	Meters	Meters	days	hr:min	Meters
0	JUNCTION	0.17	0.59	178.73	0	01:12	0.59
4	JUNCTION	0.00	0.06	178.23	0	01:13	0.06
41	JUNCTION	0.02	0.05	179.10	0	01:11	0.05
42	JUNCTION	0.03	0.06	179.41	0	01:11	0.06
43	JUNCTION	0.05	0.21	178.89	0	01:12	0.21
44	JUNCTION	0.07	0.49	178.95	0	01:12	0.44
45	JUNCTION	0.06	0.31	178.89	0	01:12	0.29
46	JUNCTION	0.03	0.10	179.02	0	01:11	0.10
47	JUNCTION	0.03	0.08	178.88	0	01:12	0.08
48	JUNCTION	0.18	0.61	178.89	0	01:12	0.58
49	JUNCTION	0.13	0.73	178.73	0	01:09	0.62
50	JUNCTION	0.13	0.68	178.75	0	01:10	0.60
51	JUNCTION	0.09	0.79	179.38	0	01:10	0.57
52	JUNCTION	0.11	0.94	180.18	0	01:11	0.93
53	JUNCTION	0.10	0.76	179.82	0	01:11	0.73
54	JUNCTION	0.08	0.70	179.57	0	01:10	0.54
55	JUNCTION	0.21	0.67	178.53	0	01:12	0.63
56	JUNCTION	0.20	0.65	178.44	0	01:12	0.64
57	JUNCTION	0.00	0.00	179.17	0	00:00	0.00
58	JUNCTION	0.00	0.00	179.80	0	00:00	0.00
59	JUNCTION	0.00	0.00	183.47	0	00:00	0.00
60	JUNCTION	0.00	0.00	178.27	0	00:00	0.00
61	JUNCTION	0.00	0.00	178.42	0	00:00	0.00
63	JUNCTION	0.00	0.00	178.72	0	00:00	0.00
64	JUNCTION	0.01	0.04	179.16	0	01:11	0.04
CB1	JUNCTION	0.00	0.00	183.90	0	00:00	0.00
CB12	JUNCTION	0.00	0.00	179.02	0	00:00	0.00
CB14	JUNCTION	0.00	0.00	179.22	0	00:00	0.00
CB17	JUNCTION	0.00	0.23	179.82	0	01:11	0.21
CB19	JUNCTION	0.08	1.03	180.77	0	01:09	1.02
CB2	JUNCTION	0.00	0.01	179.19	0	01:10	0.00
CB21	JUNCTION	0.00	0.00	179.77	0	00:00	0.00
CB23	JUNCTION	0.00	0.00	179.61	0	00:00	0.00
CB25	JUNCTION	0.00	0.00	179.41	0	00:00	0.00
CB28	JUNCTION	0.00	0.00	179.35	0	00:00	0.00
CB3	JUNCTION	0.00	0.00	180.90	0	00:00	0.00
CB31	JUNCTION	0.00	0.00	179.60	0	00:00	0.00
CB33	JUNCTION	0.00	0.00	179.80	0	00:00	0.00
CB39	JUNCTION	0.00	0.00	178.83	0	00:00	0.00
CB42	JUNCTION	0.00	0.00	178.74	0	00:00	0.00
CB43	JUNCTION	0.00	0.00	179.84	0	00:00	0.00
CB44	JUNCTION	0.00	0.00	179.86	0	00:00	0.00
CB5	JUNCTION	0.00	0.00	178.89	0	00:00	0.00
CB7	JUNCTION	0.00	0.00	178.88	0	00:00	0.00
CBMH8	JUNCTION	0.08	0.26	179.08	0	01:11	0.26
DCB15	JUNCTION	0.00	0.16	179.44	0	01:11	0.13
DCB26	JUNCTION	0.05	0.15	179.37	0	01:11	0.14
DCB27	JUNCTION	0.05	0.16	179.38	0	01:11	0.14
DCB37	JUNCTION	0.04	0.14	178.75	0	01:11	0.13
DCB40	JUNCTION	0.03	0.09	178.85	0	01:09	0.09
MDMH1	JUNCTION	0.00	0.00	180.92	0	00:00	0.00
MDMH2	JUNCTION	0.00	0.00	179.76	0	00:00	0.00
MDMH3	JUNCTION	0.00	0.00	177.75	0	00:00	0.00
OGS	JUNCTION	0.16	0.45	178.23	0	01:12	0.43
RYCB1	JUNCTION	0.02	0.06	180.09	0	01:10	0.06

RYCB2	JUNCTION	0.04	0.11	179.54	0	01:10	0.11
RYCB3	JUNCTION	0.03	0.11	179.78	0	01:11	0.11
RYCB4	JUNCTION	0.00	0.00	178.86	0	00:00	0.00
RYCB5	JUNCTION	0.00	0.03	178.88	0	01:11	0.03
RYCB6	JUNCTION	0.00	0.00	178.50	0	00:00	0.00
RYCB7	JUNCTION	0.05	0.28	178.79	0	01:11	0.25
RYCB8	JUNCTION	0.02	0.08	180.40	0	01:10	0.08
RYCB9	JUNCTION	0.01	0.02	181.83	0	01:10	0.02
STMH1	JUNCTION	0.40	0.67	177.64	0	01:25	0.67
STMH10	JUNCTION	0.12	0.75	178.87	0	01:10	0.58
STMH11	JUNCTION	0.00	0.00	178.32	0	00:00	0.00
STMH12	JUNCTION	0.00	0.00	178.47	0	00:00	0.00
STMH13	JUNCTION	0.00	0.00	178.65	0	00:00	0.00
STMH14	JUNCTION	0.00	0.00	178.81	0	00:00	0.00
STMH15	JUNCTION	0.13	0.61	178.64	0	01:12	0.61
STMH16	JUNCTION	0.02	0.06	179.54	0	01:10	0.06
STMH17	JUNCTION	0.09	0.76	179.46	0	01:10	0.58
STMH18	JUNCTION	0.09	0.92	180.18	0	01:11	0.91
STMH19	JUNCTION	0.06	0.38	178.90	0	01:12	0.35
STMH2	JUNCTION	0.00	0.00	183.83	0	00:00	0.00
STMH20	JUNCTION	0.05	0.23	178.89	0	01:13	0.23
STMH21	JUNCTION	0.01	0.04	179.20	0	01:10	0.04
STMH22	JUNCTION	0.05	0.32	178.91	0	01:11	0.30
STMH23	JUNCTION	0.05	0.13	178.96	0	01:10	0.13
STMH3	JUNCTION	0.03	0.10	179.14	0	01:11	0.10
STMH4	JUNCTION	0.22	0.71	178.52	0	01:12	0.68
STMH5	JUNCTION	0.24	0.70	178.59	0	01:12	0.69
STMH6	JUNCTION	0.20	0.68	178.62	0	01:12	0.67
STMH7	JUNCTION	0.17	0.63	178.93	0	01:11	0.63
STMH9	JUNCTION	0.00	0.00	181.06	0	00:00	0.00
O1	OUTFALL	0.00	0.00	176.95	0	00:00	0.00
SWM_Pond_Outfall	OUTFALL	0.00	0.00	178.90	0	00:00	0.00
U201_Outfall	OUTFALL	0.00	0.00	177.71	0	00:00	0.00
U202_Outfall	OUTFALL	0.00	0.00	183.25	0	00:00	0.00
A211_Storage	STORAGE	0.03	0.12	180.69	0	01:11	0.12
RYCB1_Storage	STORAGE	0.00	0.02	181.65	0	01:10	0.02
RYCB2_Storage	STORAGE	0.01	0.04	181.12	0	01:10	0.04
RYCB3_Storage	STORAGE	0.01	0.05	181.58	0	01:11	0.05
RYCB4_Storage	STORAGE	0.00	0.01	180.12	0	01:11	0.01
RYCB5_Storage	STORAGE	0.00	0.00	180.11	0	00:00	0.00
RYCB6_Storage	STORAGE	0.00	0.00	180.05	0	00:00	0.00
RYCB7_Storage	STORAGE	0.01	0.05	180.00	0	01:10	0.05
RYCB8_Storage	STORAGE	0.01	0.03	182.47	0	01:10	0.03
RYCB9_Storage	STORAGE	0.00	0.01	183.37	0	01:10	0.01
S12	STORAGE	0.00	0.00	181.05	0	00:00	0.00
S13	STORAGE	0.00	0.00	180.85	0	00:00	0.00
S19	STORAGE	0.02	0.09	181.08	0	01:10	0.09
S20	STORAGE	0.00	0.00	180.84	0	00:00	0.00
S21	STORAGE	0.00	0.00	180.53	0	00:00	0.00
S22	STORAGE	0.00	0.00	180.43	0	00:00	0.00
S23	STORAGE	0.00	0.00	180.14	0	00:00	0.00
S26	STORAGE	0.00	0.00	180.47	0	00:00	0.00
S27	STORAGE	0.00	0.00	180.27	0	00:00	0.00
S30	STORAGE	0.00	0.00	185.15	0	00:00	0.00
S31	STORAGE	0.00	0.00	182.15	0	00:00	0.00
S32	STORAGE	0.00	0.00	181.09	0	00:00	0.00
S7	STORAGE	0.00	0.00	181.11	0	00:00	0.00

S8	STORAGE	0.00	0.00	181.02	0	00:00	0.00
S9	STORAGE	0.00	0.00	180.86	0	00:00	0.00
StreetA_Storage	STORAGE	0.03	0.10	180.57	0	01:11	0.10
StreetB_Storage1	STORAGE	0.02	0.06	180.07	0	01:10	0.06
StreetB_Storage2	STORAGE	0.02	0.08	179.94	0	01:10	0.08
SWM_Pond	STORAGE	0.37	0.64	177.66	0	01:25	0.64

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min		Lateral Inflow Volume 10^6 ltr	Total Flow Inflow Volume 10^6 ltr	Flow Balance Error Percent
0	JUNCTION	0.000	0.514	0	01:12	0	0.682	0.270
4	JUNCTION	0.000	0.009	0	01:12	0	0.000469	0.563
41	JUNCTION	0.000	0.009	0	01:11	0	0.0133	0.540
42	JUNCTION	0.000	0.009	0	01:10	0	0.0134	0.531
43	JUNCTION	0.000	0.036	0	01:10	0	0.0613	0.301
44	JUNCTION	0.000	0.216	0	01:10	0	0.233	-0.034
45	JUNCTION	0.000	0.059	0	01:12	0	0.0567	0.213
46	JUNCTION	0.000	0.020	0	01:11	0	0.0201	0.328
47	JUNCTION	0.000	0.020	0	01:11	0	0.02	0.212
48	JUNCTION	0.000	0.587	0	01:11	0	0.682	0.146
49	JUNCTION	0.000	0.201	0	01:10	0	0.275	-0.363
50	JUNCTION	0.000	0.139	0	01:10	0	0.19	0.141
51	JUNCTION	0.000	0.112	0	01:10	0	0.144	0.128
52	JUNCTION	0.000	0.117	0	01:10	0	0.145	0.129
53	JUNCTION	0.000	0.118	0	01:10	0	0.144	0.189
54	JUNCTION	0.000	0.118	0	01:10	0	0.144	0.096
55	JUNCTION	0.000	0.721	0	01:12	0	0.949	0.173
56	JUNCTION	0.000	0.844	0	01:12	0	1.09	0.087

```
  57                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  58                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  59                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  60                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  61                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  63                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  64                  JUNCTION     0.000    0.002     0  01:10           0
0.00263       0.625
  CB1                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB12                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB14                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB17                JUNCTION     0.000    0.010     0  01:10           0
0.000281       0.378
  CB19                JUNCTION     0.000    0.117     0  01:10           0
0.144      -0.041
  CB2                 JUNCTION     0.000    0.004     0  01:10           0
6.34e-06      -0.022 ltr
  CB21                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB23                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB25                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB28                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB3                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB31                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB33                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB39                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB42                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB43                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB44                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB5                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB7                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CBMH8               JUNCTION     0.000    0.186     0  01:11           0
0.214       0.131
  DCB15               JUNCTION     0.000    0.013     0  01:10           0
0.000186       0.670
  DCB26               JUNCTION     0.000    0.138     0  01:11           0
0.176       0.018
  DCB27               JUNCTION     0.000    0.138     0  01:11           0
0.176       0.022
```

DCB37	JUNCTION	0.000	0.109	0	01:10	0
0.143	0.020					
DCB40	JUNCTION	0.000	0.066	0	01:10	0
0.08	0.028					
MDMH1	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
MDMH2	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
MDMH3	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
OGS	JUNCTION	0.000	0.985	0	01:13	0
1.09	0.229					
RYCB1	JUNCTION	0.000	0.009	0	01:10	0
0.0135	0.320					
RYCB2	JUNCTION	0.000	0.030	0	01:10	0
0.0486	0.250					
RYCB3	JUNCTION	0.000	0.044	0	01:11	0
0.037	0.070					
RYCB4	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
RYCB5	JUNCTION	0.000	0.008	0	01:11	0
0.00082	-0.002					
RYCB6	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
RYCB7	JUNCTION	0.000	0.049	0	01:10	0
0.0472	0.082					
RYCB8	JUNCTION	0.000	0.020	0	01:10	0
0.0176	0.116					
RYCB9	JUNCTION	0.000	0.003	0	01:10	0
0.00264	0.131					
STMH1	JUNCTION	0.000	0.283	0	01:25	0
1.48	0.349					
STMH10	JUNCTION	0.000	0.142	0	01:10	0
0.19	0.127					
STMH11	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
STMH12	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
STMH13	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
STMH14	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
STMH15	JUNCTION	0.000	0.139	0	01:10	0
0.19	0.028					
STMH16	JUNCTION	0.000	0.009	0	01:10	0
0.0134	0.505					
STMH17	JUNCTION	0.000	0.115	0	01:10	0
0.144	0.056					
STMH18	JUNCTION	0.000	0.005	0	01:09	0
0.000399	5.797					
STMH19	JUNCTION	0.000	0.074	0	01:13	0
0.0567	0.186					
STMH2	JUNCTION	0.000	0.000	0	00:00	0
0	0.000 ltr					
STMH20	JUNCTION	0.000	0.061	0	01:11	0
0.0569	0.394					
STMH21	JUNCTION	0.000	0.003	0	01:10	0
0.00264	0.494					
STMH22	JUNCTION	0.000	0.054	0	01:12	0
0.0612	0.148					

STMH23	JUNCTION	0.000	0.036	0	01:10	0	0.0617
0.599							
STMH3	JUNCTION	0.000	0.021	0	01:10	0	0.0202
0.523							
STMH4	JUNCTION	0.000	0.732	0	01:14	0	0.947
0.154							
STMH5	JUNCTION	0.000	0.709	0	01:12	0	0.95
0.144							
STMH6	JUNCTION	0.000	0.682	0	01:11	0	0.956
0.151							
STMH7	JUNCTION	0.000	0.576	0	01:11	0	0.508
0.180							
STMH9	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
O1	OUTFALL	0.000	0.283	0	01:25	0	1.47
0.000							
SWM_Pond_Outfall	OUTFALL	0.000	0.000	0	00:00	0	0
0.000 ltr							
U201_Outfall	OUTFALL	0.001	0.001	0	03:00	0.00312	0.00312
0.000							
U202_Outfall	OUTFALL	0.012	0.012	0	01:09	0.0128	0.0128
0.000							
A211_Storage	STORAGE	0.124	0.214	0	01:11	0.142	0.218
0.007							
RYCB1_Storage	STORAGE	0.028	0.028	0	01:10	0.0411	0.0411
0.008							
RYCB2_Storage	STORAGE	0.011	0.030	0	01:10	0.021	0.0486
0.021							
RYCB3_Storage	STORAGE	0.135	0.135	0	01:11	0.113	0.113
0.004							
RYCB4_Storage	STORAGE	0.000	0.008	0	01:11	0	0.00082
0.000							
RYCB5_Storage	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
RYCB6_Storage	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
RYCB7_Storage	STORAGE	0.049	0.049	0	01:10	0.0472	0.0472
0.006							
RYCB8_Storage	STORAGE	0.014	0.020	0	01:10	0.0122	0.0176
0.013							
RYCB9_Storage	STORAGE	0.008	0.008	0	01:10	0.00804	0.00804
0.001							
S12	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S13	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S19	STORAGE	0.118	0.118	0	01:10	0.144	0.144
-0.001							
S20	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S21	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S22	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S23	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S26	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S27	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							

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  S30                   STORAGE      0.000    0.000     0  00:00           0
0       0.000 ltr
  S31                   STORAGE      0.000    0.000     0  00:00           0
0       0.000 ltr
  S32                   STORAGE      0.000    0.000     0  00:00           0
0       0.000 ltr
  S7                    STORAGE      0.000    0.000     0  00:00           0
0       0.000 ltr
  S8                    STORAGE      0.000    0.000     0  00:00           0
0       0.000 ltr
  S9                    STORAGE      0.000    0.000     0  00:00           0
0       0.000 ltr
  StreetA_Storage       STORAGE      0.273    0.298     0  01:10       0.349
0.353       0.002
  StreetB_Storage1      STORAGE      0.203    0.203     0  01:10       0.244
0.244      -0.001
  StreetB_Storage2      STORAGE      0.208    0.344     0  01:10       0.271
0.435       0.001
  SWM_Pond              STORAGE      0.102    1.031     0  01:12       0.122
1.5       0.476


  **********************
  Node Surcharge Summary
  **********************

  Surcharging occurs when water rises above the top of the highest conduit.
  -------------------------------------------------------------------------
                                          Max. Height   Min. Depth
                                Hours     Above Crown    Below Rim
  Node                  Type  Surcharged       Meters       Meters
  -------------------------------------------------------------------------
  49                    JUNCTION      0.12        0.278        1.342
  50                    JUNCTION      0.10        0.231        1.439
  51                    JUNCTION      0.08        0.490        1.100
  52                    JUNCTION      0.08        0.639        0.861
  53                    JUNCTION      0.07        0.460        1.070
  54                    JUNCTION      0.05        0.401        1.009
  CB19                  JUNCTION      0.04        0.430        0.220
  STMH10                JUNCTION      0.09        0.301        1.409
  STMH15                JUNCTION      0.10        0.164        1.446
  STMH17                JUNCTION      0.07        0.462        1.188
  STMH18                JUNCTION      0.07        0.618        0.882


  **********************
  Node Flooding Summary
  **********************

  No nodes were flooded.


  **********************
  Storage Volume Summary
  **********************

  ------------------------------------------------------------------------------
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	Average	Avg	Evap	Exfil	Maximum	Max	Time of Max	Maximum
	Volume	Pcnt	Pcnt	Pcnt	Volume	Pcnt	Occurrence	Outflow
Storage Unit	1000 m3	Full	Loss	Loss	1000 m3	Full	days hr:min	CMS
A211_Storage	0.000	0	0	0	0.000	2	0 01:11	0.214
RYCB1_Storage	0.000	0	0	0	0.000	0	0 01:10	0.028
RYCB2_Storage	0.000	0	0	0	0.000	0	0 01:10	0.030
RYCB3_Storage	0.000	0	0	0	0.000	0	0 01:11	0.135
RYCB4_Storage	0.000	0	0	0	0.000	0	0 01:11	0.008
RYCB5_Storage	0.000	0	0	0	0.000	0	0 00:00	0.000
RYCB6_Storage	0.000	0	0	0	0.000	0	0 00:00	0.000
RYCB7_Storage	0.000	0	0	0	0.000	0	0 01:10	0.049
RYCB8_Storage	0.000	0	0	0	0.000	0	0 01:10	0.020
RYCB9_Storage	0.000	0	0	0	0.000	0	0 01:10	0.008
S12	0.000	0	0	0	0.000	0	0 00:00	0.000
S13	0.000	0	0	0	0.000	0	0 00:00	0.000
S19	0.000	6	0	0	0.001	29	0 01:10	0.117
S20	0.000	0	0	0	0.000	0	0 00:00	0.000
S21	0.000	0	0	0	0.000	0	0 00:00	0.000
S22	0.000	0	0	0	0.000	0	0 00:00	0.000
S23	0.000	0	0	0	0.000	0	0 00:00	0.000
S26	0.000	0	0	0	0.000	0	0 00:00	0.000
S27	0.000	0	0	0	0.000	0	0 00:00	0.000
S30	0.000	0	0	0	0.000	0	0 00:00	0.000
S31	0.000	0	0	0	0.000	0	0 00:00	0.000
S32	0.000	0	0	0	0.000	0	0 00:00	0.000
S7	0.000	0	0	0	0.000	0	0 00:00	0.000
S8	0.000	0	0	0	0.000	0	0 00:00	0.000
S9	0.000	0	0	0	0.000	0	0 00:00	0.000
StreetA_Storage	0.000	0	0	0	0.007	4	0 01:11	0.283

StreetB_Storage1	0.000	0	0	0	0.000	1	0
01:10 0.202							
StreetB_Storage2	0.000	0	0	0	0.005	3	0
01:10 0.331							
SWM_Pond	0.172	4	0	0	0.456	11	0
01:25 0.283							

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
O1	99.75	0.167	0.283	1.474
SWM_Pond_Outfall	0.00	0.000	0.000	0.000
U201_Outfall	55.51	0.001	0.001	0.003
U202_Outfall	99.92	0.002	0.012	0.013
System	63.80	0.169	0.286	1.490

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
4	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C1	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C10	CONDUIT	0.054	0 01:12	1.08	0.21	0.59
C11	CONDUIT	0.072	0 01:13	0.55	0.18	0.86
C12	CONDUIT	0.187	0 01:11	1.38	0.65	0.79
C13	CONDUIT	0.003	0 01:10	0.69	0.01	0.10
C14	CONDUIT	0.002	0 01:10	0.37	0.02	0.09
C15	CONDUIT	0.002	0 01:11	0.14	0.01	0.15
C16	CONDUIT	0.019	0 01:10	1.14	0.14	0.29
C17	CONDUIT	0.020	0 01:11	0.75	0.11	0.22
C18	CONDUIT	0.020	0 01:11	0.87	0.11	0.20
C19	CONDUIT	0.020	0 01:12	0.48	0.07	0.34
C2	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C20	CONDUIT	0.044	0 01:11	1.19	0.19	0.43
C21	CONDUIT	0.059	0 01:12	0.83	0.25	0.51
C22	CONDUIT	0.074	0 01:13	0.71	0.30	0.65
C23	CONDUIT	0.094	0 01:14	0.74	0.41	0.82
C24	CONDUIT	0.362	0 01:11	1.83	0.40	0.97
C25	CONDUIT	0.454	0 01:12	1.42	0.96	0.90
C26	CONDUIT	0.510	0 01:12	1.61	1.09	0.89
C27	CONDUIT	0.000	0 00:00	0.00	0.00	0.50
C28	CONDUIT	0.008	0 01:11	0.28	0.04	0.57
C29	CONDUIT	0.498	0 01:12	1.48	0.94	0.93

C3	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C30	CONDUIT	0.006	0	01:13	0.08	0.07	1.00
C31	CONDUIT	0.117	0	01:10	1.66	1.58	1.00
C32	CONDUIT	0.118	0	01:10	1.71	1.61	1.00
C33	CONDUIT	0.115	0	01:10	1.70	1.03	1.00
C34	CONDUIT	0.112	0	01:10	1.66	1.15	1.00
C35	CONDUIT	0.104	0	01:11	1.47	1.02	1.00
C36	CONDUIT	0.048	0	01:09	1.11	0.73	1.00
C37	CONDUIT	0.139	0	01:10	0.87	0.89	1.00
C38	CONDUIT	0.139	0	01:10	0.88	1.04	1.00
C39	CONDUIT	0.140	0	01:10	0.88	0.91	1.00
C4	CONDUIT	0.009	0	01:10	0.90	0.08	0.20
C40	CONDUIT	0.270	0	01:09	1.80	0.56	1.00
C41	CONDUIT	0.709	0	01:12	1.41	0.55	0.76
C42	CONDUIT	0.721	0	01:12	1.42	1.27	0.76
C43	CONDUIT	0.732	0	01:14	1.59	0.89	0.75
C44	CONDUIT	0.763	0	01:13	1.75	1.28	0.73
C45	CONDUIT	0.982	0	01:13	2.67	1.78	0.59
C46	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C47	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C48	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C49	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C5	CONDUIT	0.009	0	01:10	0.75	0.06	0.16
C50	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C51	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C52	CONDUIT	0.000	0	00:00	0.00	0.00	0.08
C53	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C54	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C55	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C56	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C57	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C58	CONDUIT	0.788	0	01:12	2.13	0.36	0.46
C59	CONDUIT	0.009	0	01:12	0.14	0.03	0.58
C6	CONDUIT	0.009	0	01:11	0.81	0.06	0.15
C60	CONDUIT	0.283	0	01:25	0.89	0.58	0.97
C62	CONDUIT	0.000	0	00:00	0.00	0.00	0.16
C63	CONDUIT	0.000	0	00:00	0.00	0.00	0.13
C64	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C65	CONDUIT	0.000	0	00:00	0.00	0.00	0.09
C66	CONDUIT	0.000	0	00:00	0.00	0.00	0.20
C67	CONDUIT	0.000	0	00:00	0.00	0.00	0.20
C68	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C69	CONDUIT	0.144	0	01:11	3.47	0.65	0.81
C7	CONDUIT	0.008	0	01:11	0.43	0.04	0.24
C70	CONDUIT	0.139	0	01:11	3.35	0.56	0.79
C71	CONDUIT	0.117	0	01:10	3.73	1.18	1.00
C72	CONDUIT	0.010	0	01:10	0.41	0.10	1.00
C73	CONDUIT	0.013	0	01:10	0.48	0.08	0.82
C74	CONDUIT	0.004	0	01:10	0.23	0.03	0.51
C75	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C76	CONDUIT	0.066	0	01:10	1.84	0.30	0.69
C77	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C78	CONDUIT	0.111	0	01:10	2.77	0.48	0.78
C79	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C8	CONDUIT	0.030	0	01:10	1.21	0.27	0.39
C80	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C81	CONDUIT	0.000	0	00:00	0.00	0.00	0.00

C82	CONDUIT	0.000	0	00:00	0.00	0.00	0.14
C83	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C84	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C85	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C9	CONDUIT	0.036	0	01:10	1.03	0.17	0.37
1	ORIFICE	0.009	0	01:10			
100	ORIFICE	0.000	0	00:00			
119	ORIFICE	0.008	0	01:11			
12	ORIFICE	0.000	0	00:00			
120	ORIFICE	0.000	0	00:00			
13	ORIFICE	0.000	0	00:00			
14	ORIFICE	0.000	0	00:00			
151	ORIFICE	0.000	0	00:00			
2	ORIFICE	0.283	0	01:25			1.00
3	ORIFICE	0.138	0	01:11			
37	ORIFICE	0.000	0	00:00			
38	ORIFICE	0.030	0	01:10			
39	ORIFICE	0.044	0	01:11			
40	ORIFICE	0.020	0	01:10			
41	ORIFICE	0.003	0	01:10			
42	ORIFICE	0.049	0	01:10			
43	ORIFICE	0.186	0	01:11			
5	ORIFICE	0.000	0	00:00			
6	ORIFICE	0.000	0	00:00			
7	ORIFICE	0.138	0	01:11			
8	ORIFICE	0.000	0	00:00			
80	ORIFICE	0.000	0	00:00			
85	ORIFICE	0.000	0	00:00			
86	ORIFICE	0.000	0	00:00			
87	ORIFICE	0.000	0	00:00			
88	ORIFICE	0.117	0	01:10			
89	ORIFICE	0.000	0	00:00			
90	ORIFICE	0.000	0	00:00			
91	ORIFICE	0.000	0	00:00			
92	ORIFICE	0.000	0	00:00			
94	ORIFICE	0.109	0	01:10			
96	ORIFICE	0.066	0	01:10			
97	ORIFICE	0.000	0	00:00			
98	ORIFICE	0.000	0	00:00			
99	ORIFICE	0.000	0	00:00			
10	WEIR	0.000	0	00:00			0.00
18	WEIR	0.000	0	00:00			0.00
19	WEIR	0.000	0	00:00			0.00
9	WEIR	0.000	0	00:00			0.00
A211_Weir	WEIR	0.028	0	01:11			0.14
RYCB1_Weir	WEIR	0.019	0	01:10			0.11
RYCB2_Weir	WEIR	0.000	0	00:00			0.00
RYCB3_Weir	WEIR	0.090	0	01:11			0.31
RYCB4_Weir	WEIR	0.000	0	00:00			0.00
RYCB5_Weir	WEIR	0.000	0	00:00			0.00
RYCB6_Weir	WEIR	0.000	0	00:00			0.00
RYCB7_Weir	WEIR	0.000	0	00:00			0.00
RYCB8_Weir	WEIR	0.000	0	00:00			0.00
RYCB9_Weir	WEIR	0.005	0	01:10			0.05
StreetA_Weir	WEIR	0.008	0	01:11			0.06
StreetB_Weir1	WEIR	0.136	0	01:10			0.41
StreetB_Weir2	WEIR	0.223	0	01:10			0.57

SWM_Pond_Weir	WEIR	0.000	0	00:00	0.00
W17	WEIR	0.000	0	00:00	0.00
W18	WEIR	0.000	0	00:00	0.00
W19	WEIR	0.000	0	00:00	0.00
W20	WEIR	0.000	0	00:00	0.00
W21	WEIR	0.000	0	00:00	0.00
W27	WEIR	0.000	0	00:00	0.00
W30	WEIR	0.000	0	00:00	0.00
W31	WEIR	0.000	0	00:00	0.00
W6	WEIR	0.000	0	00:00	0.00
W8	WEIR	0.000	0	00:00	0.00
W9	WEIR	0.000	0	00:00	0.00

****
Flow Classification Summary
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Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
4	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C10	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.03	0.00
C11	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.91	0.00
C12	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.96	0.00
C13	1.00	0.00	0.00	0.00	0.06	0.94	0.00	0.00	0.97	0.00
C14	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.20	0.00
C15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.98	0.00
C16	1.00	0.00	0.00	0.00	0.04	0.96	0.00	0.00	0.95	0.00
C17	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.77	0.00
C18	1.00	0.00	0.00	0.00	0.82	0.17	0.00	0.00	0.00	0.00
C19	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.96	0.00
C2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C20	1.00	0.00	0.00	0.00	0.76	0.24	0.00	0.00	0.95	0.00
C21	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.08	0.00
C22	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.67	0.00

C23	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.79
0.00									
C24	1.00	0.00	0.00	0.00	0.98	0.01	0.00	0.00	0.92
0.00									
C25	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.17
0.00									
C26	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01
0.00									
C27	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C28	1.00	0.00	0.85	0.00	0.15	0.00	0.00	0.00	0.61
0.00									
C29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.77
0.00									
C3	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C30	1.00	0.00	0.03	0.00	0.97	0.00	0.00	0.00	0.00
0.00									
C31	1.00	0.00	0.00	0.00	0.89	0.11	0.00	0.00	0.70
0.00									
C32	1.00	0.00	0.00	0.00	0.06	0.94	0.00	0.00	0.00
0.00									
C33	1.00	0.00	0.00	0.00	0.05	0.95	0.00	0.00	0.85
0.00									
C34	1.00	0.01	0.00	0.00	0.05	0.94	0.00	0.00	0.26
0.00									
C35	1.00	0.00	0.01	0.00	0.59	0.40	0.00	0.00	0.92
0.00									
C36	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.92
0.00									
C37	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.64
0.00									
C38	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01
0.00									
C39	1.00	0.00	0.01	0.00	0.69	0.30	0.00	0.00	0.05
0.00									
C4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.78
0.00									
C40	1.00	0.00	0.00	0.00	0.95	0.05	0.00	0.00	0.38
0.00									
C41	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.20
0.00									
C42	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C43	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.14
0.00									
C44	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.09
0.00									
C45	1.00	0.00	0.00	0.00	0.25	0.75	0.00	0.00	0.01
0.00									
C46	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C47	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C48	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C49	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C5	1.00	0.00	0.00	0.00	0.19	0.80	0.00	0.00	0.71
0.00									

C50	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C51	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C52	1.00	0.78	0.22	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C53	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C54	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C55	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C56	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C57	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C58	1.00	0.00	0.00	0.00	0.96	0.04	0.00	0.00	0.94
0.00									
C59	1.00	0.00	0.78	0.00	0.22	0.00	0.00	0.00	0.59
0.00									
C6	1.00	0.01	0.00	0.00	0.10	0.89	0.00	0.00	0.00
0.00									
C60	1.00	0.00	0.00	0.00	0.93	0.07	0.00	0.00	0.00
0.00									
C62	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C63	1.00	0.02	0.98	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C64	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C65	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C66	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C67	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C68	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C69	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.95
0.00									
C7	1.00	0.00	0.01	0.00	0.98	0.00	0.00	0.00	0.94
0.00									
C70	1.00	0.00	0.00	0.00	0.79	0.21	0.00	0.00	0.95
0.00									
C71	1.00	0.00	0.00	0.00	0.04	0.96	0.00	0.00	0.95
0.00									
C72	1.00	0.00	0.79	0.00	0.21	0.00	0.00	0.00	0.60
0.00									
C73	1.00	0.00	0.82	0.00	0.18	0.00	0.00	0.00	0.60
0.00									
C74	1.00	0.01	0.81	0.00	0.17	0.00	0.00	0.00	0.61
0.00									
C75	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C76	1.00	0.00	0.00	0.00	0.24	0.76	0.00	0.00	0.95
0.00									
C77	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C78	1.00	0.00	0.00	0.00	0.84	0.16	0.00	0.00	0.95
0.00									

C79	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C8	1.00	0.00	0.00	0.00	0.06	0.94	0.00	0.00	0.93
0.00									
C80	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C81	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C82	1.00	0.78	0.22	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C83	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C84	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C85	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C9	1.00	0.00	0.00	0.00	0.22	0.78	0.00	0.00	0.03
0.00									

****
Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C11	0.01	0.01	0.09	0.01	0.01
C12	0.01	0.01	0.09	0.01	0.01
C24	0.01	0.01	0.05	0.01	0.01
C26	0.01	0.01	0.01	0.05	0.01
C28	0.01	0.01	0.21	0.01	0.01
C29	0.01	0.01	0.01	0.01	0.01
C30	0.07	0.07	0.08	0.01	0.01
C31	0.07	0.08	0.07	0.09	0.07
C32	0.05	0.07	0.05	0.10	0.05
C33	0.05	0.05	0.07	0.01	0.01
C34	0.07	0.07	0.08	0.04	0.03
C35	0.08	0.08	0.15	0.02	0.02
C36	0.03	0.03	0.17	0.01	0.01
C37	0.09	0.09	0.10	0.01	0.01
C38	0.10	0.10	0.10	0.03	0.02
C39	0.10	0.10	0.11	0.01	0.01
C40	0.11	0.11	0.14	0.01	0.01
C42	0.01	0.01	0.01	0.07	0.01
C44	0.01	0.01	0.01	0.06	0.01
C45	0.01	0.01	0.01	0.10	0.01
C59	0.01	0.01	0.09	0.01	0.01
C69	0.01	0.01	0.10	0.01	0.01
C70	0.01	0.01	0.30	0.01	0.01
C71	0.07	0.07	0.13	0.04	0.04
C72	0.02	0.02	0.10	0.01	0.01
C73	0.01	0.01	0.06	0.01	0.01
C74	0.01	0.01	0.09	0.01	0.01
C76	0.01	0.01	0.27	0.01	0.01
C78	0.01	0.01	0.42	0.01	0.01

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Analysis begun on:  Wed Jul 20 15:30:24 2022
Analysis ended on:  Wed Jul 20 15:30:24 2022
Total elapsed time: < 1 sec
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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

SBM-18-0530 Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 29
Number of nodes 118
Number of links 149
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
St.ThomasRainGage	St.Thomas5Yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A201	0.43	95.56	0.00	30.0000	St.ThomasRainGage	A202
A202	0.22	24.44	45.71	2.0000	St.ThomasRainGage	RYCB1_Storage
A203	0.51	87.93	0.00	30.0000	St.ThomasRainGage	A204
A204	0.08	42.11	45.71	2.0000	St.ThomasRainGage	RYCB2_Storage
A205	0.05	100.00	45.71	2.0000	St.ThomasRainGage	RYCB9_Storage
A206	0.12	7.50	25.00	30.0000	St.ThomasRainGage	A207
A207	0.03	60.00	45.71	2.0000	St.ThomasRainGage	RYCB8_Storage
A208	1.52	119.68	25.00	30.0000	St.ThomasRainGage	A209
A209	0.04	80.00	45.71	2.0000	St.ThomasRainGage	RYCB3_Storage
A210	1.36	143.16	25.00	30.0000	St.ThomasRainGage	A211
A211	0.19	63.33	45.71	2.0000	St.ThomasRainGage	A211_Storage
A212	2.46	144.71	45.71	2.0000	St.ThomasRainGage	StreetA_Storage

A213	0.55	78.57	45.71	2.0000	St.ThomasRainGage StreetB_Storage1
A214	0.99	79.20	45.71	2.0000	St.ThomasRainGage S19
A215	1.09	82.58	46.70	2.0000	St.ThomasRainGage StreetB_Storage1
A216	0.25	100.00	64.29	2.0000	St.ThomasRainGage RYCB7_Storage
A217	1.85	97.37	48.65	2.0000	St.ThomasRainGage StreetB_Storage2
A218	0.54	40.00	45.71	2.0000	St.ThomasRainGage SWM_Pond
A219	0.06	75.00	0.00	2.0000	St.ThomasRainGage SWM_Pond
A220	0.58	193.33	21.43	8.0000	St.ThomasRainGage SWM_Pond
EXT201	0.11	137.50	71.43	2.0000	St.ThomasRainGage A201
EXT202	0.12	150.00	71.43	2.0000	St.ThomasRainGage A203
EXT203	0.95	73.08	0.00	30.0000	St.ThomasRainGage A205
EXT204	0.12	150.00	71.43	2.0000	St.ThomasRainGage EXT205
EXT205	1.26	78.75	0.00	30.0000	St.ThomasRainGage A206
EXT206	0.20	250.00	71.43	2.0000	St.ThomasRainGage A208
EXT207	0.30	375.00	71.43	2.0000	St.ThomasRainGage A210
U201	0.44	44.00	0.00	3.0000	St.ThomasRainGage U201_Outfall
U202	0.08	47.06	45.71	6.0000	St.ThomasRainGage U202_Outfall

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
0	JUNCTION	178.14	1.99	0.0	
4	JUNCTION	178.17	1.87	0.0	
41	JUNCTION	179.05	1.85	0.0	
42	JUNCTION	179.35	1.75	0.0	
43	JUNCTION	178.68	1.97	0.0	
44	JUNCTION	178.46	2.06	0.0	
45	JUNCTION	178.58	2.15	0.0	
46	JUNCTION	178.92	2.15	0.0	
47	JUNCTION	178.80	2.11	0.0	
48	JUNCTION	178.28	2.20	0.0	
49	JUNCTION	178.00	2.07	0.0	
50	JUNCTION	178.07	2.12	0.0	
51	JUNCTION	178.59	1.89	0.0	
52	JUNCTION	179.24	1.80	0.0	
53	JUNCTION	179.06	1.83	0.0	
54	JUNCTION	178.87	1.71	0.0	
55	JUNCTION	177.86	2.26	0.0	

56	JUNCTION	177.79	2.12	0.0
57	JUNCTION	179.17	1.97	0.0
58	JUNCTION	179.80	2.40	0.0
59	JUNCTION	183.47	1.73	0.0
60	JUNCTION	178.27	1.90	0.0
61	JUNCTION	178.42	1.90	0.0
63	JUNCTION	178.72	1.76	0.0
64	JUNCTION	179.12	2.01	0.0
CB1	JUNCTION	183.90	1.25	0.0
CB12	JUNCTION	179.02	1.25	0.0
CB14	JUNCTION	179.22	1.25	0.0
CB17	JUNCTION	179.59	1.25	0.0
CB19	JUNCTION	179.74	1.25	0.0
CB2	JUNCTION	179.18	1.25	0.0
CB21	JUNCTION	179.77	1.25	0.0
CB23	JUNCTION	179.61	1.25	0.0
CB25	JUNCTION	179.41	1.25	0.0
CB28	JUNCTION	179.35	1.25	0.0
CB3	JUNCTION	180.90	1.25	0.0
CB31	JUNCTION	179.60	1.25	0.0
CB33	JUNCTION	179.80	1.25	0.0
CB39	JUNCTION	178.83	1.25	0.0
CB42	JUNCTION	178.74	1.25	0.0
CB43	JUNCTION	179.84	1.25	0.0
CB44	JUNCTION	179.86	1.25	0.0
CB5	JUNCTION	178.89	1.25	0.0
CB7	JUNCTION	178.88	1.25	0.0
CBMH8	JUNCTION	178.82	1.75	0.0
DCB15	JUNCTION	179.28	1.25	0.0
DCB26	JUNCTION	179.22	1.25	0.0
DCB27	JUNCTION	179.22	1.25	0.0
DCB37	JUNCTION	178.61	1.25	0.0
DCB40	JUNCTION	178.76	1.25	0.0
MDMH1	JUNCTION	180.92	5.84	0.0
MDMH2	JUNCTION	179.76	5.54	0.0
MDMH3	JUNCTION	177.75	1.86	0.0
OGS	JUNCTION	177.78	2.22	0.0
RYCB1	JUNCTION	180.03	1.60	0.0
RYCB2	JUNCTION	179.43	1.65	0.0
RYCB3	JUNCTION	179.67	1.86	0.0
RYCB4	JUNCTION	178.86	1.25	0.0
RYCB5	JUNCTION	178.85	1.26	0.0
RYCB6	JUNCTION	178.50	1.55	0.0
RYCB7	JUNCTION	178.51	1.44	0.0
RYCB8	JUNCTION	180.32	2.12	0.0
RYCB9	JUNCTION	181.81	1.55	0.0
STMH1	JUNCTION	176.97	2.49	0.0
STMH10	JUNCTION	178.12	2.16	0.0
STMH11	JUNCTION	178.32	1.89	0.0
STMH12	JUNCTION	178.47	1.91	0.0
STMH13	JUNCTION	178.65	1.82	0.0
STMH14	JUNCTION	178.81	1.80	0.0
STMH15	JUNCTION	178.03	2.06	0.0
STMH16	JUNCTION	179.48	1.88	0.0
STMH17	JUNCTION	178.70	1.95	0.0
STMH18	JUNCTION	179.26	1.80	0.0
STMH19	JUNCTION	178.52	2.07	0.0

STMH2	JUNCTION	183.83	1.75	0.0
STMH20	JUNCTION	178.66	2.17	0.0
STMH21	JUNCTION	179.16	2.07	0.0
STMH22	JUNCTION	178.59	1.98	0.0
STMH23	JUNCTION	178.83	1.95	0.0
STMH3	JUNCTION	179.04	2.18	0.0
STMH4	JUNCTION	177.81	2.17	0.0
STMH5	JUNCTION	177.89	2.21	0.0
STMH6	JUNCTION	177.94	2.13	0.0
STMH7	JUNCTION	178.30	2.23	0.0
STMH9	JUNCTION	181.06	2.61	0.0
O1	OUTFALL	176.95	0.00	0.0
SWM_Pond_Outfall	OUTFALL	178.90	0.00	0.0
U201_Outfall	OUTFALL	177.71	0.68	0.0
U202_Outfall	OUTFALL	183.25	0.00	0.0
A211_Storage	STORAGE	180.57	0.45	0.0
RYCB1_Storage	STORAGE	181.63	0.45	0.0
RYCB2_Storage	STORAGE	181.08	0.38	0.0
RYCB3_Storage	STORAGE	181.53	0.45	0.0
RYCB4_Storage	STORAGE	180.11	0.45	0.0
RYCB5_Storage	STORAGE	180.11	0.45	0.0
RYCB6_Storage	STORAGE	180.05	0.27	0.0
RYCB7_Storage	STORAGE	179.95	0.39	0.0
RYCB8_Storage	STORAGE	182.44	0.45	0.0
RYCB9_Storage	STORAGE	183.36	0.13	0.0
S12	STORAGE	181.05	0.30	0.0
S13	STORAGE	180.85	0.30	0.0
S19	STORAGE	180.99	0.30	0.0
S20	STORAGE	180.84	0.30	0.0
S21	STORAGE	180.53	0.30	0.0
S22	STORAGE	180.43	0.29	0.0
S23	STORAGE	180.14	0.29	0.0
S26	STORAGE	180.47	0.30	0.0
S27	STORAGE	180.27	0.30	0.0
S30	STORAGE	185.15	0.30	0.0
S31	STORAGE	182.15	0.30	0.0
S32	STORAGE	181.09	0.30	0.0
S7	STORAGE	181.11	0.30	0.0
S8	STORAGE	181.02	0.30	0.0
S9	STORAGE	180.86	0.30	0.0
StreetA_Storage	STORAGE	180.47	0.30	0.0
StreetB_Storage1	STORAGE	180.01	0.29	0.0
StreetB_Storage2	STORAGE	179.86	0.29	0.0
SWM_Pond	STORAGE	177.02	1.89	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	% Slope	Roughness
4	RYCB6	STMH11	CONDUIT	22.4	0.8036	0.0130
C1	MDMH1	MDMH2	CONDUIT	13.7	8.4977	0.0130

C10	43	STMH22	CONDUIT	11.1	0.8116	0.0130
C11	STMH22	STMH7	CONDUIT	15.2	1.9082	0.0130
C12	CBMH8	STMH7	CONDUIT	50.5	1.0298	0.0130
C13	RYCB9	STMH21	CONDUIT	43.8	6.0613	0.0130
C14	STMH21	64	CONDUIT	14.9	0.2676	0.0130
C15	64	STMH3	CONDUIT	27.2	0.2947	0.0130
C16	RYCB8	STMH3	CONDUIT	65.0	1.9696	0.0130
C17	STMH3	46	CONDUIT	30.6	0.3919	0.0130
C18	46	47	CONDUIT	29.7	0.4040	0.0130
C19	47	STMH20	CONDUIT	14.4	0.9736	0.0130
C2	MDMH2	MDMH3	CONDUIT	172.8	1.1633	0.0130
C20	RYCB3	STMH20	CONDUIT	59.7	1.6920	0.0130
C21	STMH20	45	CONDUIT	26.4	0.3029	0.0130
C22	45	STMH19	CONDUIT	18.5	0.3245	0.0130
C23	STMH19	44	CONDUIT	21.1	0.2848	0.0130
C24	44	STMH7	CONDUIT	3.6	4.4120	0.0130
C25	STMH7	48	CONDUIT	6.3	0.3180	0.0130
C26	48	0	CONDUIT	45.5	0.3076	0.0130
C27	RYCB4	0	CONDUIT	5.5	13.2045	0.0130
C28	RYCB5	0	CONDUIT	5.5	13.0180	0.0130
C29	0	STMH6	CONDUIT	50.4	0.3968	0.0130
C3	MDMH3	U201_Outfall	CONDUIT	6.0	0.6667	0.0130
C30	STMH18	52	CONDUIT	2.8	0.7169	0.0130
C31	52	53	CONDUIT	30.5	0.5909	0.0130
C32	53	54	CONDUIT	32.9	0.5772	0.0130
C33	54	STMH17	CONDUIT	12.7	1.3355	0.0130
C34	STMH17	51	CONDUIT	10.7	1.0243	0.0130
C35	51	STMH10	CONDUIT	42.3	1.1122	0.0130
C36	RYCB7	STMH10	CONDUIT	32.5	1.2001	0.0130
C37	STMH10	50	CONDUIT	16.8	0.2971	0.0130

C38		50	STMH15	CONDUIT	18.1
0.2214	0.0130				
C39		STMH15	49	CONDUIT	10.3
0.2921	0.0130				
C4		RYCB1	STMH16	CONDUIT	44.9
1.2250	0.0130				
C40		49	STMH6	CONDUIT	2.1
2.8180	0.0130				
C41		STMH6	STMH5	CONDUIT	9.8
0.5102	0.0130				
C42		STMH5	55	CONDUIT	30.7
0.0978	0.0130				
C43		55	STMH4	CONDUIT	24.2
0.2063	0.0130				
C44		STMH4	56	CONDUIT	18.5
0.1082	0.0130				
C45		56	OGS	CONDUIT	10.7
0.0933	0.0130				
C46		STMH14	63	CONDUIT	15.1
0.5956	0.0130				
C47		63	STMH13	CONDUIT	8.2
0.8547	0.0130				
C48		STMH13	STMH12	CONDUIT	18.2
0.9891	0.0130				
C49		STMH12	61	CONDUIT	11.4
0.4371	0.0130				
C5		STMH16	42	CONDUIT	16.8
0.7729	0.0130				
C50		61	STMH11	CONDUIT	22.0
0.4546	0.0130				
C51		STMH11	60	CONDUIT	10.4
0.4794	0.0130				
C52		60	4	CONDUIT	23.5
0.4248	0.0130				
C53		STMH2	59	CONDUIT	7.5
4.8249	0.0130				
C54		59	STMH9	CONDUIT	32.3
7.4752	0.0130				
C55		STMH9	58	CONDUIT	45.7
2.7594	0.0130				
C56		58	57	CONDUIT	23.0
2.7437	0.0130				
C57		57	OGS	CONDUIT	48.8
2.8524	0.0130				
C58		OGS	SWM_Pond	CONDUIT	117.7
0.6457	0.0130				
C59		4	OGS	CONDUIT	14.8
2.6307	0.0130				
C6		42	41	CONDUIT	40.5
0.7406	0.0130				
C60		SWM_Pond	STMH1	CONDUIT	14.9
0.3356	0.0130				
C62		CB33	42	CONDUIT	5.5
8.2093	0.0130				
C63		CB31	41	CONDUIT	5.5
10.0504	0.0130				
C64		CB28	43	CONDUIT	5.5
12.2732	0.0130				
C65		CB44	64	CONDUIT	5.5
13.5780	0.0130				

C66		CB21	46	CONDUIT	5.5
15.6425	0.0130				
C67		CB23	47	CONDUIT	5.5
14.8896	0.0130				
C68		CB25	45	CONDUIT	5.5
15.2657	0.0130				
C69		DCB27	44	CONDUIT	5.5
13.9520	0.0130				
C7		41	STMH23	CONDUIT	18.5
1.1912	0.0130				
C70		DCB26	48	CONDUIT	5.5
17.3461	0.0130				
C71		CB19	52	CONDUIT	5.5
9.1287	0.0130				
C72		CB17	53	CONDUIT	5.5
9.6814	0.0130				
C73		DCB15	54	CONDUIT	5.5
7.4753	0.0130				
C74		CB2	51	CONDUIT	5.5
10.7895	0.0130				
C75		CB5	50	CONDUIT	5.5
15.0776	0.0130				
C76		DCB40	49	CONDUIT	5.5
13.9520	0.0130				
C77		CB39	55	CONDUIT	5.5
17.9172	0.0130				
C78		DCB37	56	CONDUIT	5.5
15.0776	0.0130				
C79		CB14	63	CONDUIT	5.5
9.1287	0.0130				
C8		RYCB2	STMH23	CONDUIT	46.0
1.3045	0.0130				
C80		CB12	61	CONDUIT	5.5
10.9746	0.0130				
C81		CB7	60	CONDUIT	5.5
11.1598	0.0130				
C82		CB42	4	CONDUIT	5.5
10.4197	0.0130				
C83		CB1	59	CONDUIT	5.5
7.8422	0.0130				
C84		CB3	58	CONDUIT	5.5
20.4124	0.0130				
C85		CB43	57	CONDUIT	5.5
12.2732	0.0130				
C9		STMH23	43	CONDUIT	29.6
0.5066	0.0130				
1		RYCB1_Storage	RYCB1	ORIFICE	
100		S27	CB12	ORIFICE	
119		RYCB4_Storage	RYCB5	ORIFICE	
12		StreetB_Storage2	CB42	ORIFICE	
120		RYCB5_Storage	RYCB4	ORIFICE	
13		StreetB_Storage2	CB39	ORIFICE	
14		StreetB_Storage2	CB7	ORIFICE	
151		S26	CB14	ORIFICE	
2		STMH1	O1	ORIFICE	
3		StreetA_Storage	DCB27	ORIFICE	
37		S12	CB33	ORIFICE	
38		RYCB2_Storage	RYCB2	ORIFICE	
39		RYCB3_Storage	RYCB3	ORIFICE	

40	RYCB8_Storage	RYCB8	ORIFICE
41	RYCB9_Storage	RYCB9	ORIFICE
42	RYCB7_Storage	RYCB7	ORIFICE
43	A211_Storage	CBMH8	ORIFICE
5	RYCB6_Storage	RYCB6	ORIFICE
6	StreetA_Storage	CB25	ORIFICE
7	StreetA_Storage	DCB26	ORIFICE
8	StreetA_Storage	CB28	ORIFICE
80	S13	CB31	ORIFICE
85	S9	CB23	ORIFICE
86	S8	CB21	ORIFICE
87	S7	CB44	ORIFICE
88	S19	CB19	ORIFICE
89	S20	CB17	ORIFICE
90	S30	CB1	ORIFICE
91	S31	CB3	ORIFICE
92	S32	CB43	ORIFICE
94	StreetB_Storage2	DCB37	ORIFICE
96	StreetB_Storage1	DCB40	ORIFICE
97	S22	CB2	ORIFICE
98	S23	CB5	ORIFICE
99	S21	DCB15	ORIFICE
10	S13	StreetA_Storage	WEIR
18	S27	StreetB_Storage2	WEIR
19	S32	StreetB_Storage2	WEIR
9	S9	StreetA_Storage	WEIR
A211_Weir	A211_Storage	StreetA_Storage	WEIR
RYCB1_Weir	RYCB1_Storage	RYCB2_Storage	WEIR
RYCB2_Weir	RYCB2_Storage	A211_Storage	WEIR
RYCB3_Weir	RYCB3_Storage	A211_Storage	WEIR
RYCB4_Weir	RYCB4_Storage	StreetB_Storage1	WEIR
RYCB5_Weir	RYCB5_Storage	StreetB_Storage1	WEIR
RYCB6_Weir	RYCB6_Storage	StreetB_Storage2	WEIR
RYCB7_Weir	RYCB7_Storage	RYCB6_Storage	WEIR
RYCB8_Weir	RYCB8_Storage	RYCB3_Storage	WEIR
RYCB9_Weir	RYCB9_Storage	RYCB8_Storage	WEIR
StreetA_Weir	StreetA_Storage	RYCB4_Storage	WEIR
StreetB_Weir1	StreetB_Storage1	StreetB_Storage2	WEIR
StreetB_Weir2	StreetB_Storage2	SWM_Pond	WEIR
SWM_Pond_Weir	SWM_Pond	SWM_Pond_Outfall	WEIR
W17	S19	S20	WEIR
W18	S20	S21	WEIR
W19	S21	S22	WEIR
W20	S22	S23	WEIR
W21	S23	StreetB_Storage1	WEIR
W27	S26	S27	WEIR
W30	S30	S31	WEIR
W31	S31	S32	WEIR
W6	S12	S13	WEIR
W8	S7	S8	WEIR
W9	S8	S9	WEIR

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Cross Section Summary
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		Full	Full	Hyd.	Max.	No. of

Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
4	CIRCULAR	0.30	0.07	0.07	0.30	1	0.09
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.83
C10	CIRCULAR	0.45	0.16	0.11	0.45	1	0.26
C11	CIRCULAR	0.45	0.16	0.11	0.45	1	0.39
C12	CIRCULAR	0.45	0.16	0.11	0.45	1	0.29
C13	CIRCULAR	0.30	0.07	0.07	0.30	1	0.24
C14	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C15	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C16	CIRCULAR	0.30	0.07	0.07	0.30	1	0.14
C17	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C18	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C19	CIRCULAR	0.45	0.16	0.11	0.45	1	0.28
C2	CIRCULAR	0.60	0.28	0.15	0.60	1	0.66
C20	CIRCULAR	0.38	0.11	0.09	0.38	1	0.23
C21	CIRCULAR	0.53	0.22	0.13	0.53	1	0.24
C22	CIRCULAR	0.53	0.22	0.13	0.53	1	0.25
C23	CIRCULAR	0.53	0.22	0.13	0.53	1	0.23
C24	CIRCULAR	0.53	0.22	0.13	0.53	1	0.90
C25	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C26	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C27	CIRCULAR	0.25	0.05	0.06	0.25	1	0.22
C28	CIRCULAR	0.25	0.05	0.06	0.25	1	0.21
C29	CIRCULAR	0.68	0.36	0.17	0.68	1	0.53
C3	CIRCULAR	0.68	0.36	0.17	0.68	1	0.69
C30	CIRCULAR	0.30	0.07	0.07	0.30	1	0.08
C31	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C32	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C33	CIRCULAR	0.30	0.07	0.07	0.30	1	0.11

C34	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C35	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C36	CIRCULAR	0.25	0.05	0.06	0.25	1
0.07						
C37	CIRCULAR	0.45	0.16	0.11	0.45	1
0.16						
C38	CIRCULAR	0.45	0.16	0.11	0.45	1
0.13						
C39	CIRCULAR	0.45	0.16	0.11	0.45	1
0.15						
C4	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C40	CIRCULAR	0.45	0.16	0.11	0.45	1
0.48						
C41	CIRCULAR	0.90	0.64	0.23	0.90	1
1.29						
C42	CIRCULAR	0.90	0.64	0.23	0.90	1
0.57						
C43	CIRCULAR	0.90	0.64	0.23	0.90	1
0.82						
C44	CIRCULAR	0.90	0.64	0.23	0.90	1
0.60						
C45	CIRCULAR	0.90	0.64	0.23	0.90	1
0.55						
C46	CIRCULAR	0.30	0.07	0.07	0.30	1
0.07						
C47	CIRCULAR	0.30	0.07	0.07	0.30	1
0.09						
C48	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C49	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C5	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C50	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C51	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C52	CIRCULAR	0.38	0.11	0.09	0.38	1
0.11						
C53	CIRCULAR	0.25	0.05	0.06	0.25	1
0.13						
C54	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C55	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C56	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C57	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C58	CIRCULAR	1.05	0.87	0.26	1.05	1
2.19						
C59	CIRCULAR	0.38	0.11	0.09	0.38	1
0.28						
C6	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C60	CIRCULAR	0.68	0.36	0.17	0.68	1
0.49						

C62	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C63	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C64	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C65	CIRCULAR	0.20	0.03	0.05	0.20	1
0.12						
C66	CIRCULAR	0.25	0.05	0.06	0.25	1
0.24						
C67	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C68	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C69	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C7	CIRCULAR	0.38	0.11	0.09	0.38	1
0.19						
C70	CIRCULAR	0.25	0.05	0.06	0.25	1
0.25						
C71	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C72	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C73	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C74	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C75	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C76	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C77	CIRCULAR	0.20	0.03	0.05	0.20	1
0.14						
C78	CIRCULAR	0.25	0.05	0.06	0.25	1
0.23						
C79	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C8	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C80	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C81	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C82	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C83	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C84	CIRCULAR	0.20	0.03	0.05	0.20	1
0.15						
C85	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C9	CIRCULAR	0.45	0.16	0.11	0.45	1
0.20						

****

NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,

not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 12/11/2020 00:00:00
Ending Date 12/11/2020 03:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:01:00
Routing Time Step ..... 30.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 1
Head Tolerance ..... 0.001500 m

**********	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
**********	---	---
Total Precipitation	0.590	35.740
Evaporation Loss	0.000	0.000
Infiltration Loss	0.241	14.577
Surface Runoff	0.247	14.968
Final Storage	0.103	6.217
Continuity Error (%)	-0.062	

**********	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
**********	---	---
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.247	2.467
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.220	2.197
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.027	0.265
Continuity Error (%)	0.199	

```
  ************************
  Highest Continuity Errors
  ************************
  Node 60 (11.97%)
  Node CB28 (1.94%)
  Node STMH21 (1.28%)
  Node STMH3 (1.25%)
  Node 64 (1.03%)


  ***************************
  Time-Step Critical Elements
  ***************************
  Link C40 (83.88%)
  Link C69 (7.10%)
  Link C24 (2.95%)
  Link C78 (2.40%)
  Link C70 (1.64%)


  ********************************
  Highest Flow Instability Indexes
  ********************************
  Link C45 (15)
  Link C40 (14)
  Link C58 (11)
  Link C39 (10)
  Link C44 (9)


  *************************
  Routing Time Step Summary
  *************************
  Minimum Time Step           :     0.50 sec
  Average Time Step           :     1.03 sec
  Maximum Time Step           :    30.00 sec
  Percent in Steady State     :    -0.00
  Average Iterations per Step :     2.27
  Percent Not Converging      :     2.75
  Time Step Frequencies       :
     30.000 - 13.228 sec      :     0.05 %
     13.228 -  5.833 sec      :     0.03 %
      5.833 -  2.572 sec      :     1.52 %
      2.572 -  1.134 sec      :    25.14 %
      1.134 -  0.500 sec      :    73.26 %


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ---------------------------------------------------------------------------------
---------------------------------------------
                            Total      Total      Total      Total     Imperv
Perv      Total       Total     Peak  Runoff
```

Subcatchment	Precip mm	Runon mm	Evap mm	Infil mm	Runoff mm	Runoff mm	Runoff 10^6 ltr	Runoff CMS	Coeff
A201	35.74	8.21	0.00	26.91	0.00	8.13	8.13	0.03	0.01	0.185
A202	35.74	15.82	0.00	8.56	22.59	14.69	37.28	0.08	0.04	0.723
A203	35.74	7.56	0.00	26.91	0.00	7.21	7.21	0.04	0.01	0.166
A204	35.74	45.72	0.00	8.56	36.40	32.01	68.42	0.05	0.02	0.840
A205	35.74	4.25	0.00	8.56	17.56	10.60	28.15	0.01	0.01	0.704
A206	35.74	19.94	0.00	20.18	13.44	9.47	22.92	0.03	0.01	0.412
A207	35.74	90.63	0.00	8.56	57.00	56.55	113.56	0.03	0.02	0.899
A208	35.74	4.22	0.00	20.18	9.59	2.62	12.21	0.19	0.18	0.305
A209	35.74	462.62	0.00	8.56	227.05	258.52	485.57	0.19	0.19	0.974
A210	35.74	7.08	0.00	20.18	10.31	4.87	15.18	0.21	0.17	0.354
A211	35.74	108.38	0.00	8.56	64.97	65.27	130.24	0.25	0.18	0.904
A212	35.74	0.00	0.00	8.56	15.41	6.38	21.79	0.54	0.40	0.610
A213	35.74	0.00	0.00	8.56	15.52	7.57	23.09	0.13	0.10	0.646
A214	35.74	0.00	0.00	8.56	15.46	6.87	22.33	0.22	0.17	0.625
A215	35.74	0.00	0.00	8.41	15.78	6.70	22.48	0.25	0.19	0.629
A216	35.74	0.00	0.00	5.63	21.91	5.50	27.41	0.07	0.07	0.767
A217	35.74	0.00	0.00	8.10	16.37	5.94	22.31	0.41	0.30	0.624
A218	35.74	0.00	0.00	8.56	15.45	6.76	22.20	0.12	0.09	0.621
A219	35.74	0.00	0.00	15.77	0.00	15.45	15.45	0.01	0.01	0.432
A220	35.74	0.00	0.00	20.05	7.33	4.47	11.80	0.07	0.06	0.330
EXT201	35.74	0.00	0.00	1.29	24.41	7.74	32.15	0.04	0.04	0.899
EXT202	35.74	0.00	0.00	1.29	24.41	7.74	32.15	0.04	0.05	0.899
EXT203	35.74	0.00	0.00	26.91	0.00	0.23	0.23	0.00	0.00	0.006
EXT204	35.74	0.00	0.00	1.29	24.41	7.74	32.15	0.04	0.05	0.899
EXT205	35.74	3.06	0.00	26.91	0.00	1.92	1.92	0.02	0.01	0.050
EXT206	35.74	0.00	0.00	1.29	24.41	7.74	32.15	0.06	0.08	0.899
EXT207	35.74	0.00	0.00	1.29	24.41	7.74	32.15	0.10	0.12	0.899

```
  U201                      35.74       0.00       0.00      25.52       0.00
3.66       3.66        0.02     0.00   0.102
  U202                      35.74       0.00       0.00       8.56      15.63
8.49      24.11        0.02     0.02   0.675
```

****
Node Depth Summary
****

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
0	JUNCTION	0.23	0.90	179.04	0 01:12	0.89
4	JUNCTION	0.01	0.15	178.32	0 01:13	0.12
41	JUNCTION	0.03	0.28	179.33	0 01:12	0.27
42	JUNCTION	0.03	0.07	179.42	0 01:10	0.07
43	JUNCTION	0.09	1.06	179.74	0 01:11	0.59
44	JUNCTION	0.10	0.85	179.31	0 01:12	0.80
45	JUNCTION	0.09	1.04	179.62	0 01:12	0.67
46	JUNCTION	0.06	0.39	179.31	0 01:11	0.39
47	JUNCTION	0.05	1.02	179.82	0 01:12	0.45
48	JUNCTION	0.24	0.99	179.27	0 01:12	0.96
49	JUNCTION	0.19	0.79	178.79	0 01:12	0.79
50	JUNCTION	0.17	0.82	178.89	0 01:11	0.82
51	JUNCTION	0.13	1.43	180.02	0 01:10	1.35
52	JUNCTION	0.17	1.73	180.97	0 01:11	1.70
53	JUNCTION	0.17	1.80	180.86	0 01:11	1.78
54	JUNCTION	0.13	1.63	180.50	0 01:11	1.60
55	JUNCTION	0.27	0.85	178.71	0 01:12	0.83
56	JUNCTION	0.26	0.83	178.62	0 01:13	0.82
57	JUNCTION	0.00	0.00	179.17	0 00:00	0.00
58	JUNCTION	0.00	0.00	179.80	0 00:00	0.00
59	JUNCTION	0.00	0.00	183.47	0 00:00	0.00
60	JUNCTION	0.00	0.03	178.30	0 01:14	0.03
61	JUNCTION	0.00	0.00	178.42	0 00:00	0.00
63	JUNCTION	0.00	0.00	178.72	0 00:00	0.00
64	JUNCTION	0.02	0.21	179.33	0 01:14	0.18
CB1	JUNCTION	0.00	0.00	183.90	0 00:00	0.00
CB12	JUNCTION	0.00	0.00	179.02	0 00:00	0.00
CB14	JUNCTION	0.00	0.00	179.22	0 00:00	0.00
CB17	JUNCTION	0.05	1.38	180.97	0 01:11	1.37
CB19	JUNCTION	0.12	1.39	181.13	0 01:11	1.38
CB2	JUNCTION	0.02	0.98	180.16	0 01:10	0.75
CB21	JUNCTION	0.00	0.00	179.77	0 00:00	0.00
CB23	JUNCTION	0.00	0.00	179.61	0 01:12	0.00
CB25	JUNCTION	0.00	0.01	179.42	0 01:12	0.00
CB28	JUNCTION	0.00	0.01	179.36	0 01:11	0.00
CB3	JUNCTION	0.00	0.00	180.90	0 00:00	0.00
CB31	JUNCTION	0.00	0.00	179.60	0 00:00	0.00
CB33	JUNCTION	0.00	0.00	179.80	0 00:00	0.00
CB39	JUNCTION	0.00	0.00	178.83	0 00:00	0.00
CB42	JUNCTION	0.00	0.00	178.74	0 00:00	0.00
CB43	JUNCTION	0.00	0.00	179.84	0 00:00	0.00
CB44	JUNCTION	0.00	0.00	179.86	0 00:00	0.00

CB5	JUNCTION	0.00	0.00	178.89	0	01:12	0.00
CB7	JUNCTION	0.00	0.00	178.88	0	00:00	0.00
CBMH8	JUNCTION	0.12	0.75	179.57	0	01:11	0.63
DCB15	JUNCTION	0.03	1.25	180.53	0	01:11	1.22
DCB26	JUNCTION	0.06	0.51	179.73	0	01:11	0.49
DCB27	JUNCTION	0.07	0.53	179.75	0	01:11	0.50
DCB37	JUNCTION	0.05	0.23	178.84	0	01:12	0.19
DCB40	JUNCTION	0.04	0.15	178.91	0	01:12	0.15
MDMH1	JUNCTION	0.00	0.00	180.92	0	00:00	0.00
MDMH2	JUNCTION	0.00	0.00	179.76	0	00:00	0.00
MDMH3	JUNCTION	0.00	0.00	177.75	0	00:00	0.00
OGS	JUNCTION	0.20	0.53	178.31	0	01:13	0.52
RYCB1	JUNCTION	0.03	0.07	180.10	0	01:10	0.07
RYCB2	JUNCTION	0.06	0.13	179.56	0	01:10	0.13
RYCB3	JUNCTION	0.04	0.13	179.80	0	01:10	0.13
RYCB4	JUNCTION	0.00	0.17	179.03	0	01:12	0.16
RYCB5	JUNCTION	0.00	0.19	179.04	0	01:12	0.19
RYCB6	JUNCTION	0.00	0.00	178.50	0	00:00	0.00
RYCB7	JUNCTION	0.07	0.84	179.35	0	01:10	0.83
RYCB8	JUNCTION	0.03	0.09	180.41	0	01:10	0.09
RYCB9	JUNCTION	0.01	0.03	181.84	0	01:10	0.03
STMH1	JUNCTION	0.58	0.83	177.80	0	01:34	0.83
STMH10	JUNCTION	0.16	0.86	178.98	0	01:10	0.84
STMH11	JUNCTION	0.00	0.00	178.32	0	00:00	0.00
STMH12	JUNCTION	0.00	0.00	178.47	0	00:00	0.00
STMH13	JUNCTION	0.00	0.00	178.65	0	00:00	0.00
STMH14	JUNCTION	0.00	0.00	178.81	0	00:00	0.00
STMH15	JUNCTION	0.18	0.80	178.83	0	01:12	0.79
STMH16	JUNCTION	0.03	0.07	179.55	0	01:10	0.07
STMH17	JUNCTION	0.14	1.50	180.20	0	01:10	1.48
STMH18	JUNCTION	0.15	1.70	180.96	0	01:11	1.68
STMH19	JUNCTION	0.10	0.93	179.45	0	01:12	0.73
STMH2	JUNCTION	0.00	0.00	183.83	0	00:00	0.00
STMH20	JUNCTION	0.09	1.21	179.87	0	01:12	0.58
STMH21	JUNCTION	0.02	0.16	179.32	0	01:13	0.15
STMH22	JUNCTION	0.08	0.91	179.50	0	01:11	0.67
STMH23	JUNCTION	0.09	0.95	179.78	0	01:12	0.46
STMH3	JUNCTION	0.05	0.26	179.30	0	01:14	0.26
STMH4	JUNCTION	0.28	0.90	178.71	0	01:12	0.84
STMH5	JUNCTION	0.30	0.87	178.76	0	01:12	0.87
STMH6	JUNCTION	0.26	0.84	178.78	0	01:12	0.84
STMH7	JUNCTION	0.23	0.99	179.29	0	01:12	0.95
STMH9	JUNCTION	0.00	0.00	181.06	0	00:00	0.00
O1	OUTFALL	0.00	0.00	176.95	0	00:00	0.00
SWM_Pond_Outfall	OUTFALL	0.00	0.00	178.90	0	00:00	0.00
U201_Outfall	OUTFALL	0.00	0.00	177.71	0	00:00	0.00
U202_Outfall	OUTFALL	0.00	0.00	183.25	0	00:00	0.00
A211_Storage	STORAGE	0.04	0.14	180.71	0	01:11	0.14
RYCB1_Storage	STORAGE	0.01	0.02	181.65	0	01:10	0.02
RYCB2_Storage	STORAGE	0.02	0.05	181.13	0	01:10	0.05
RYCB3_Storage	STORAGE	0.01	0.06	181.59	0	01:10	0.06
RYCB4_Storage	STORAGE	0.00	0.05	180.16	0	01:11	0.05
RYCB5_Storage	STORAGE	0.00	0.00	180.11	0	00:00	0.00
RYCB6_Storage	STORAGE	0.00	0.00	180.05	0	00:00	0.00
RYCB7_Storage	STORAGE	0.01	0.06	180.01	0	01:10	0.06
RYCB8_Storage	STORAGE	0.01	0.04	182.48	0	01:10	0.04
RYCB9_Storage	STORAGE	0.00	0.01	183.37	0	01:10	0.01

S12	STORAGE	0.00	0.00	181.05	0	00:00	0.00
S13	STORAGE	0.00	0.00	180.85	0	00:00	0.00
S19	STORAGE	0.03	0.20	181.19	0	01:10	0.20
S20	STORAGE	0.00	0.18	181.02	0	01:11	0.18
S21	STORAGE	0.00	0.05	180.58	0	01:11	0.04
S22	STORAGE	0.00	0.00	180.43	0	00:00	0.00
S23	STORAGE	0.00	0.00	180.14	0	00:00	0.00
S26	STORAGE	0.00	0.00	180.47	0	00:00	0.00
S27	STORAGE	0.00	0.00	180.27	0	00:00	0.00
S30	STORAGE	0.00	0.00	185.15	0	00:00	0.00
S31	STORAGE	0.00	0.00	182.15	0	00:00	0.00
S32	STORAGE	0.00	0.00	181.09	0	00:00	0.00
S7	STORAGE	0.00	0.00	181.11	0	00:00	0.00
S8	STORAGE	0.00	0.00	181.02	0	00:00	0.00
S9	STORAGE	0.00	0.00	180.86	0	00:00	0.00
StreetA_Storage	STORAGE	0.03	0.12	180.59	0	01:11	0.12
StreetB_Storage1	STORAGE	0.02	0.08	180.09	0	01:10	0.08
StreetB_Storage2	STORAGE	0.03	0.11	179.97	0	01:10	0.11
SWM_Pond	STORAGE	0.55	0.80	177.82	0	01:34	0.80

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min		Lateral Inflow Volume 10^6 ltr	Total Flow Inflow Volume 10^6 ltr	Flow Balance Error Percent
0	JUNCTION	0.000	0.621	0	01:12	0	1.15	0.251
4	JUNCTION	0.000	0.020	0	01:13	0	0.00211	-0.449
41	JUNCTION	0.000	0.055	0	01:11	0	0.0281	0.386
42	JUNCTION	0.000	0.013	0	01:10	0	0.0267	0.325
43	JUNCTION	0.000	0.084	0	01:10	0	0.138	0.171
44	JUNCTION	0.000	0.249	0	01:15	0	0.384	0.005
45	JUNCTION	0.000	0.136	0	01:15	0	0.117	0.360
46	JUNCTION	0.000	0.129	0	01:11	0	0.0536	0.746
47	JUNCTION	0.000	0.104	0	01:11	0	0.057	0.391
48	JUNCTION	0.000	0.616	0	01:10	0	1.14	0.139
49	JUNCTION	0.000	0.292	0	01:10	0	0.44	-0.297

```
  50                    JUNCTION     0.000    0.203     0  01:11           0
0.288       0.123
  51                    JUNCTION     0.000    0.148     0  01:11           0
0.221       0.086
  52                    JUNCTION     0.000    0.127     0  01:08           0
0.203       0.106
  53                    JUNCTION     0.000    0.146     0  01:09           0
0.217       0.168
  54                    JUNCTION     0.000    0.148     0  01:11           0
0.221       0.085
  55                    JUNCTION     0.000    0.905     0  01:12           0
1.56        0.158
  56                    JUNCTION     0.000    1.127     0  01:13           0
1.77        0.072
  57                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  58                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  59                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  60                    JUNCTION     0.000    0.003     0  01:13           0
0.000153      13.604
  61                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  63                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  64                    JUNCTION     0.000    0.032     0  01:12           0
0.00734       1.044
  CB1                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB12                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB14                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB17                  JUNCTION     0.000    0.069     0  01:09           0
0.0153       0.023
  CB19                  JUNCTION     0.000    0.129     0  01:08           0
0.202      -0.026
  CB2                   JUNCTION     0.000    0.026     0  01:09           0
0.000723       0.226
  CB21                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB23                  JUNCTION     0.000    0.004     0  01:12           0
4.61e-06      -0.026 ltr
  CB25                  JUNCTION     0.000    0.005     0  01:12           0
1.53e-05       0.079 ltr
  CB28                  JUNCTION     0.000    0.005     0  01:11           0
9.63e-06       0.186 ltr
  CB3                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB31                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB33                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB39                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB42                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB43                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
```

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  CB44                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB5                   JUNCTION     0.000    0.000     0  01:12           0
6.2e-07       0.029 ltr
  CB7                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CBMH8                 JUNCTION     0.000    0.231     0  01:11           0
0.362       0.118
  DCB15                 JUNCTION     0.000    0.045     0  01:11           0
0.00438      -0.675
  DCB26                 JUNCTION     0.000    0.191     0  01:11           0
0.27       0.014
  DCB27                 JUNCTION     0.000    0.191     0  01:11           0
0.27       0.014
  DCB37                 JUNCTION     0.000    0.155     0  01:10           0
0.217       0.016
  DCB40                 JUNCTION     0.000    0.096     0  01:10           0
0.122       0.021
  MDMH1                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH2                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH3                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  OGS                   JUNCTION     0.000    1.491     0  01:12           0
1.77       0.214
  RYCB1                 JUNCTION     0.000    0.013     0  01:10           0
0.0269       0.221
  RYCB2                 JUNCTION     0.000    0.045     0  01:10           0
0.11       0.163
  RYCB3                 JUNCTION     0.000    0.061     0  01:10           0
0.0637       0.152
  RYCB4                 JUNCTION     0.000    0.012     0  01:11           0
0.000435       0.208
  RYCB5                 JUNCTION     0.000    0.055     0  01:11           0
0.011      -0.004
  RYCB6                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  RYCB7                 JUNCTION     0.000    0.072     0  01:10           0
0.0685       0.059
  RYCB8                 JUNCTION     0.000    0.030     0  01:10           0
0.0433       0.444
  RYCB9                 JUNCTION     0.000    0.005     0  01:10           0
0.00461       0.254
  STMH1                 JUNCTION     0.000    0.329     0  01:34           0
2.17       0.514
  STMH10                JUNCTION     0.000    0.203     0  01:11           0
0.288       0.135
  STMH11                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH12                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH13                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH14                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH15                JUNCTION     0.000    0.203     0  01:11           0
0.287      -0.072
  STMH16                JUNCTION     0.000    0.013     0  01:10           0
0.0268       0.347
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STMH17	JUNCTION	0.000	0.148	0	01:11	0	0.22
0.050							
STMH18	JUNCTION	0.000	0.006	0	01:08	0	0.000416
2.294							
STMH19	JUNCTION	0.000	0.143	0	01:15	0	0.119
0.293							
STMH2	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
STMH20	JUNCTION	0.000	0.160	0	01:11	0	0.119
0.635							
STMH21	JUNCTION	0.000	0.024	0	01:13	0	0.00551
1.294							
STMH22	JUNCTION	0.000	0.081	0	01:14	0	0.138
0.074							
STMH23	JUNCTION	0.000	0.071	0	01:11	0	0.139
0.353							
STMH3	JUNCTION	0.000	0.077	0	01:12	0	0.0519
1.263							
STMH4	JUNCTION	0.000	0.964	0	01:13	0	1.55
0.134							
STMH5	JUNCTION	0.000	0.894	0	01:12	0	1.56
0.112							
STMH6	JUNCTION	0.000	0.881	0	01:11	0	1.59
0.176							
STMH7	JUNCTION	0.000	0.537	0	01:09	0	0.877
0.154							
STMH9	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
O1	OUTFALL	0.000	0.329	0	01:34	0	2.16
0.000							
SWM_Pond_Outfall	OUTFALL	0.000	0.000	0	00:00	0	0
0.000 ltr							
U201_Outfall	OUTFALL	0.003	0.003	0	01:51	0.016	0.016
0.000							
U202_Outfall	OUTFALL	0.020	0.020	0	01:10	0.0193	0.0193
0.000							
A211_Storage	STORAGE	0.179	0.303	0	01:11	0.247	0.377
0.006							
RYCB1_Storage	STORAGE	0.040	0.040	0	01:10	0.0819	0.0819
0.006							
RYCB2_Storage	STORAGE	0.018	0.045	0	01:10	0.0546	0.11
0.013							
RYCB3_Storage	STORAGE	0.185	0.185	0	01:10	0.194	0.194
0.004							
RYCB4_Storage	STORAGE	0.000	0.055	0	01:11	0	0.011
0.000							
RYCB5_Storage	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
RYCB6_Storage	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
RYCB7_Storage	STORAGE	0.072	0.072	0	01:10	0.0685	0.0685
0.005							
RYCB8_Storage	STORAGE	0.021	0.030	0	01:10	0.0339	0.0433
0.031							
RYCB9_Storage	STORAGE	0.014	0.014	0	01:10	0.014	0.014
0.013							
S12	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S13	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							

S19	STORAGE	0.171	0.171	0	01:10	0.221	0.221
0.005							
S20	STORAGE	0.000	0.096	0	01:10	0	0.0187
0.026							
S21	STORAGE	0.000	0.046	0	01:11	0	0.0037
0.164							
S22	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S23	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S26	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S27	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S30	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S31	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S32	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S7	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S8	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S9	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
StreetA_Storage	STORAGE	0.397	0.467	0	01:10	0.535	0.55
0.005							
StreetB_Storage1	STORAGE	0.294	0.294	0	01:10	0.372	0.372
0.001							
StreetB_Storage2	STORAGE	0.304	0.500	0	01:10	0.412	0.662
0.004							
SWM_Pond	STORAGE	0.147	1.413	0	01:11	0.197	2.41
1.034							

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Node Surcharge Summary
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Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
0	JUNCTION	0.10	0.220	1.095
43	JUNCTION	0.06	0.605	0.915
44	JUNCTION	0.11	0.320	1.215
45	JUNCTION	0.07	0.519	1.106
47	JUNCTION	0.02	0.571	1.089
48	JUNCTION	0.11	0.311	1.214
49	JUNCTION	0.20	0.341	1.279
50	JUNCTION	0.18	0.373	1.297
51	JUNCTION	0.16	1.131	0.459
52	JUNCTION	0.14	1.425	0.075
53	JUNCTION	0.14	1.502	0.028
54	JUNCTION	0.12	1.329	0.081
CB17	JUNCTION	0.08	0.780	0.000

CB19	JUNCTION	0.12	0.786	0.000
CB2	JUNCTION	0.02	0.385	0.265
CBMH8	JUNCTION	0.03	0.153	0.997
DCB15	JUNCTION	0.07	0.647	0.003
RYCB7	JUNCTION	0.05	0.239	0.601
STMH1	JUNCTION	1.27	0.157	1.658
STMH10	JUNCTION	0.17	0.407	1.303
STMH15	JUNCTION	0.19	0.348	1.262
STMH17	JUNCTION	0.15	1.202	0.448
STMH18	JUNCTION	0.14	1.403	0.097
STMH19	JUNCTION	0.09	0.409	1.136
STMH20	JUNCTION	0.05	0.687	0.958
STMH22	JUNCTION	0.09	0.459	1.071
STMH23	JUNCTION	0.01	0.500	1.000
STMH7	JUNCTION	0.11	0.313	1.242

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
A211_Storage	0.000	0	0	0	0.000	3	0 01:11	0.303
RYCB1_Storage	0.000	0	0	0	0.000	0	0 01:10	0.040
RYCB2_Storage	0.000	0	0	0	0.000	0	0 01:10	0.045
RYCB3_Storage	0.000	0	0	0	0.000	0	0 01:10	0.185
RYCB4_Storage	0.000	0	0	0	0.000	0	0 01:11	0.055
RYCB5_Storage	0.000	0	0	0	0.000	0	0 00:00	0.000
RYCB6_Storage	0.000	0	0	0	0.000	0	0 00:00	0.000
RYCB7_Storage	0.000	0	0	0	0.000	0	0 01:10	0.072
RYCB8_Storage	0.000	0	0	0	0.000	0	0 01:10	0.030
RYCB9_Storage	0.000	0	0	0	0.000	0	0 01:10	0.014

S12		0.000	0	0	0	0.000	0	0
00:00	0.000							
S13		0.000	0	0	0	0.000	0	0
00:00	0.000							
S19		0.000	10	0	0	0.002	65	0
01:10	0.171							
S20		0.000	1	0	0	0.002	60	0
01:11	0.095							
S21		0.000	0	0	0	0.000	14	0
01:11	0.045							
S22		0.000	0	0	0	0.000	0	0
00:00	0.000							
S23		0.000	0	0	0	0.000	0	0
00:00	0.000							
S26		0.000	0	0	0	0.000	0	0
00:00	0.000							
S27		0.000	0	0	0	0.000	0	0
00:00	0.000							
S30		0.000	0	0	0	0.000	0	0
00:00	0.000							
S31		0.000	0	0	0	0.000	0	0
00:00	0.000							
S32		0.000	0	0	0	0.000	0	0
00:00	0.000							
S7		0.000	0	0	0	0.000	0	0
00:00	0.000							
S8		0.000	0	0	0	0.000	0	0
00:00	0.000							
S9		0.000	0	0	0	0.000	0	0
00:00	0.000							
StreetA_Storage		0.001	0	0	0	0.013	7	0
01:11	0.437							
StreetB_Storage1		0.000	0	0	0	0.001	2	0
01:10	0.293							
StreetB_Storage2		0.001	0	0	0	0.011	5	0
01:10	0.472							
SWM_Pond		0.435	10	0	0	0.817	19	0
01:34	0.329							

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
O1	99.76	0.234	0.329	2.162
SWM_Pond_Outfall	0.00	0.000	0.000	0.000
U201_Outfall	69.57	0.002	0.003	0.016
U202_Outfall	99.94	0.002	0.020	0.019
System	67.32	0.239	0.333	2.197

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Link Flow Summary

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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
4	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C1	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C10	CONDUIT	0.081	0	01:14	1.20	0.31	1.00
C11	CONDUIT	0.081	0	01:14	0.51	0.21	1.00
C12	CONDUIT	0.237	0	01:11	1.49	0.82	1.00
C13	CONDUIT	0.004	0	01:10	0.83	0.02	0.30
C14	CONDUIT	0.022	0	01:13	0.52	0.15	0.39
C15	CONDUIT	0.032	0	01:12	0.53	0.21	0.51
C16	CONDUIT	0.029	0	01:10	1.28	0.22	0.55
C17	CONDUIT	0.058	0	01:15	0.86	0.33	0.69
C18	CONDUIT	0.099	0	01:11	0.94	0.54	0.93
C19	CONDUIT	0.104	0	01:11	0.66	0.37	1.00
C2	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C20	CONDUIT	0.061	0	01:10	1.26	0.27	0.68
C21	CONDUIT	0.136	0	01:15	0.82	0.57	1.00
C22	CONDUIT	0.143	0	01:15	0.80	0.59	1.00
C23	CONDUIT	0.144	0	01:15	0.83	0.63	1.00
C24	CONDUIT	0.304	0	01:09	1.48	0.34	1.00
C25	CONDUIT	0.469	0	01:15	1.33	0.99	1.00
C26	CONDUIT	0.588	0	01:14	1.64	1.26	1.00
C27	CONDUIT	0.012	0	01:11	0.35	0.06	0.85
C28	CONDUIT	0.056	0	01:11	1.35	0.26	0.88
C29	CONDUIT	0.621	0	01:12	1.73	1.17	1.00
C3	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C30	CONDUIT	0.006	0	01:08	0.08	0.07	1.00
C31	CONDUIT	0.127	0	01:08	1.79	1.70	1.00
C32	CONDUIT	0.146	0	01:09	2.06	1.98	1.00
C33	CONDUIT	0.148	0	01:11	2.09	1.32	1.00
C34	CONDUIT	0.148	0	01:11	2.09	1.51	1.00
C35	CONDUIT	0.148	0	01:11	2.09	1.45	1.00
C36	CONDUIT	0.073	0	01:09	1.48	1.12	1.00
C37	CONDUIT	0.203	0	01:11	1.28	1.31	1.00
C38	CONDUIT	0.203	0	01:11	1.28	1.52	1.00
C39	CONDUIT	0.204	0	01:11	1.28	1.32	1.00
C4	CONDUIT	0.013	0	01:10	1.01	0.12	0.24
C40	CONDUIT	0.293	0	01:10	1.88	0.61	1.00
C41	CONDUIT	0.894	0	01:12	1.53	0.69	0.95
C42	CONDUIT	0.905	0	01:12	1.59	1.60	0.96
C43	CONDUIT	0.964	0	01:13	1.80	1.17	0.96
C44	CONDUIT	1.015	0	01:13	1.93	1.70	0.93
C45	CONDUIT	1.481	0	01:12	3.25	2.68	0.73
C46	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C47	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C48	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C49	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C5	CONDUIT	0.013	0	01:10	0.84	0.08	0.20
C50	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C51	CONDUIT	0.000	0	00:00	0.00	0.00	0.05
C52	CONDUIT	0.003	0	01:13	0.18	0.03	0.22
C53	CONDUIT	0.000	0	00:00	0.00	0.00	0.00

C54	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C55	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C56	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C57	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C58	CONDUIT	1.055	0	01:14	2.35	0.48	0.55
C59	CONDUIT	0.022	0	01:15	0.32	0.08	0.70
C6	CONDUIT	0.013	0	01:11	0.90	0.08	0.46
C60	CONDUIT	0.329	0	01:34	0.92	0.67	1.00
C62	CONDUIT	0.000	0	00:00	0.00	0.00	0.19
C63	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C64	CONDUIT	0.005	0	01:11	0.34	0.05	0.52
C65	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C66	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C67	CONDUIT	0.004	0	01:12	0.28	0.03	0.51
C68	CONDUIT	0.005	0	01:12	0.29	0.04	0.53
C69	CONDUIT	0.193	0	01:11	4.10	0.87	1.00
C7	CONDUIT	0.044	0	01:11	0.52	0.23	0.87
C70	CONDUIT	0.193	0	01:11	3.97	0.78	1.00
C71	CONDUIT	0.127	0	01:08	4.04	1.28	1.00
C72	CONDUIT	0.066	0	01:09	2.09	0.64	1.00
C73	CONDUIT	0.045	0	01:11	0.93	0.28	1.00
C74	CONDUIT	0.026	0	01:09	0.82	0.24	1.00
C75	CONDUIT	0.000	0	01:12	0.01	0.00	0.50
C76	CONDUIT	0.096	0	01:10	2.32	0.43	0.81
C77	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C78	CONDUIT	0.162	0	01:10	3.54	0.70	0.96
C79	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C8	CONDUIT	0.044	0	01:10	1.36	0.40	0.70
C80	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C81	CONDUIT	0.000	0	00:00	0.00	0.00	0.09
C82	CONDUIT	0.000	0	00:00	0.00	0.00	0.37
C83	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C84	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C85	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C9	CONDUIT	0.079	0	01:14	1.09	0.39	1.00
1	ORIFICE	0.013	0	01:10			
100	ORIFICE	0.000	0	00:00			
119	ORIFICE	0.055	0	01:11			
12	ORIFICE	0.000	0	00:00			
120	ORIFICE	0.000	0	00:00			
13	ORIFICE	0.000	0	00:00			
14	ORIFICE	0.000	0	00:00			
151	ORIFICE	0.000	0	00:00			
2	ORIFICE	0.329	0	01:34			1.00
3	ORIFICE	0.191	0	01:11			
37	ORIFICE	0.000	0	00:00			
38	ORIFICE	0.045	0	01:10			
39	ORIFICE	0.061	0	01:10			
40	ORIFICE	0.030	0	01:10			
41	ORIFICE	0.005	0	01:10			
42	ORIFICE	0.072	0	01:10			
43	ORIFICE	0.231	0	01:11			
5	ORIFICE	0.000	0	00:00			
6	ORIFICE	0.000	0	00:00			
7	ORIFICE	0.191	0	01:11			
8	ORIFICE	0.000	0	00:00			
80	ORIFICE	0.000	0	00:00			

85	ORIFICE	0.000	0	00:00	
86	ORIFICE	0.000	0	00:00	
87	ORIFICE	0.000	0	00:00	
88	ORIFICE	0.129	0	01:08	
89	ORIFICE	0.069	0	01:09	
90	ORIFICE	0.000	0	00:00	
91	ORIFICE	0.000	0	00:00	
92	ORIFICE	0.000	0	00:00	
94	ORIFICE	0.155	0	01:10	
96	ORIFICE	0.096	0	01:10	
97	ORIFICE	0.000	0	00:00	
98	ORIFICE	0.000	0	00:00	
99	ORIFICE	0.045	0	01:11	
10	WEIR	0.000	0	00:00	0.00
18	WEIR	0.000	0	00:00	0.00
19	WEIR	0.000	0	00:00	0.00
9	WEIR	0.000	0	00:00	0.00
A211_Weir	WEIR	0.072	0	01:11	0.27
RYCB1_Weir	WEIR	0.027	0	01:10	0.14
RYCB2_Weir	WEIR	0.000	0	00:00	0.00
RYCB3_Weir	WEIR	0.124	0	01:10	0.39
RYCB4_Weir	WEIR	0.000	0	00:00	0.00
RYCB5_Weir	WEIR	0.000	0	00:00	0.00
RYCB6_Weir	WEIR	0.000	0	00:00	0.00
RYCB7_Weir	WEIR	0.000	0	00:00	0.00
RYCB8_Weir	WEIR	0.000	0	00:00	0.00
RYCB9_Weir	WEIR	0.009	0	01:10	0.07
StreetA_Weir	WEIR	0.055	0	01:11	0.22
StreetB_Weir1	WEIR	0.197	0	01:10	0.52
StreetB_Weir2	WEIR	0.317	0	01:10	0.72
SWM_Pond_Weir	WEIR	0.000	0	00:00	0.00
W17	WEIR	0.096	0	01:10	1.02
W18	WEIR	0.046	0	01:11	0.63
W19	WEIR	0.000	0	00:00	0.00
W20	WEIR	0.000	0	00:00	0.00
W21	WEIR	0.000	0	00:00	0.00
W27	WEIR	0.000	0	00:00	0.00
W30	WEIR	0.000	0	00:00	0.00
W31	WEIR	0.000	0	00:00	0.00
W6	WEIR	0.000	0	00:00	0.00
W8	WEIR	0.000	0	00:00	0.00
W9	WEIR	0.000	0	00:00	0.00

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl

4	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C10	1.00	0.00	0.00	0.00	0.10	0.90	0.00	0.00	0.30
0.00									
C11	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.89
0.00									
C12	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.92
0.00									
C13	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.96
0.00									
C14	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.17
0.00									
C15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.94
0.00									
C16	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.95
0.00									
C17	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.73
0.00									
C18	1.00	0.00	0.00	0.00	0.60	0.40	0.00	0.00	0.01
0.00									
C19	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.92
0.00									
C2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C20	1.00	0.00	0.00	0.00	0.77	0.23	0.00	0.00	0.95
0.00									
C21	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.04
0.00									
C22	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.67
0.00									
C23	1.00	0.00	0.01	0.00	0.96	0.03	0.00	0.00	0.41
0.00									
C24	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.88
0.00									
C25	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.13
0.00									
C26	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01
0.00									
C27	1.00	0.00	0.85	0.00	0.15	0.00	0.00	0.00	0.59
0.00									
C28	1.00	0.00	0.83	0.00	0.17	0.00	0.00	0.00	0.59
0.00									
C29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.51
0.00									
C3	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C30	1.00	0.00	0.02	0.00	0.98	0.00	0.00	0.00	0.00
0.00									
C31	1.00	0.00	0.00	0.00	0.81	0.19	0.00	0.00	0.64
0.00									
C32	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.00
0.00									
C33	1.00	0.00	0.00	0.00	0.07	0.92	0.00	0.00	0.78
0.00									
C34	1.00	0.01	0.00	0.00	0.08	0.92	0.00	0.00	0.39
0.00									
C35	1.00	0.00	0.01	0.00	0.54	0.45	0.00	0.00	0.89
0.00									

C36	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.89
0.00									
C37	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.45
0.00									
C38	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.07
0.00									
C39	1.00	0.00	0.01	0.00	0.95	0.05	0.00	0.00	0.09
0.00									
C4	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.82
0.00									
C40	1.00	0.00	0.00	0.00	0.90	0.10	0.00	0.00	0.20
0.00									
C41	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.15
0.00									
C42	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C43	1.00	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.11
0.00									
C44	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.04
0.00									
C45	1.00	0.00	0.00	0.00	0.33	0.67	0.00	0.00	0.03
0.00									
C46	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C47	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C48	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C49	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C5	1.00	0.00	0.00	0.00	0.13	0.86	0.00	0.00	0.73
0.00									
C50	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C51	1.00	0.31	0.69	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C52	1.00	0.30	0.01	0.00	0.69	0.00	0.00	0.00	0.12
0.00									
C53	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C54	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C55	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C56	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C57	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C58	1.00	0.00	0.00	0.00	0.96	0.03	0.00	0.00	0.94
0.00									
C59	1.00	0.00	0.70	0.00	0.30	0.00	0.00	0.00	0.56
0.00									
C6	1.00	0.01	0.00	0.00	0.10	0.90	0.00	0.00	0.02
0.00									
C60	1.00	0.00	0.00	0.00	0.94	0.06	0.00	0.00	0.00
0.00									
C62	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C63	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00
0.00									

C64	1.00	0.00	0.84	0.00	0.15	0.00	0.00	0.00	0.60
0.00									
C65	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C66	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C67	1.00	0.01	0.86	0.00	0.14	0.00	0.00	0.00	0.60
0.00									
C68	1.00	0.00	0.86	0.00	0.14	0.00	0.00	0.00	0.60
0.00									
C69	1.00	0.00	0.00	0.00	0.03	0.97	0.00	0.00	0.93
0.00									
C7	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.93
0.00									
C70	1.00	0.00	0.00	0.00	0.76	0.24	0.00	0.00	0.93
0.00									
C71	1.00	0.00	0.00	0.00	0.06	0.94	0.00	0.00	0.92
0.00									
C72	1.00	0.00	0.77	0.00	0.23	0.00	0.00	0.00	0.58
0.00									
C73	1.00	0.00	0.80	0.00	0.20	0.00	0.00	0.00	0.58
0.00									
C74	1.00	0.01	0.78	0.00	0.21	0.00	0.00	0.00	0.58
0.00									
C75	1.00	0.00	0.90	0.00	0.10	0.00	0.00	0.00	0.60
0.00									
C76	1.00	0.00	0.00	0.00	0.58	0.42	0.00	0.00	0.92
0.00									
C77	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C78	1.00	0.00	0.00	0.00	0.79	0.21	0.00	0.00	0.92
0.00									
C79	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C8	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.93
0.00									
C80	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C81	1.00	0.31	0.69	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C82	1.00	0.70	0.30	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C83	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C84	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C85	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C9	1.00	0.00	0.00	0.00	0.23	0.77	0.00	0.00	0.02
0.00									

****
Conduit Surcharge Summary
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	Hours Full		Hours Above Full	Hours Capacity
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Conduit	Both Ends	Upstream	Dnstream	Normal Flow	Limited
C10	0.06	0.06	0.09	0.01	0.01
C11	0.09	0.09	0.18	0.01	0.01
C12	0.06	0.06	0.18	0.01	0.01
C18	0.01	0.01	0.02	0.01	0.01
C19	0.02	0.02	0.08	0.01	0.01
C20	0.01	0.01	0.09	0.01	0.01
C21	0.05	0.05	0.07	0.01	0.01
C22	0.07	0.07	0.09	0.01	0.01
C23	0.09	0.09	0.11	0.01	0.01
C24	0.11	0.11	0.15	0.01	0.01
C25	0.11	0.11	0.11	0.01	0.02
C26	0.10	0.11	0.10	0.15	0.09
C27	0.01	0.01	1.83	0.01	0.01
C28	0.01	0.01	1.86	0.01	0.01
C29	0.09	0.10	0.10	0.11	0.08
C30	0.14	0.14	0.14	0.01	0.01
C31	0.14	0.14	0.14	0.10	0.07
C32	0.12	0.14	0.12	0.17	0.12
C33	0.12	0.12	0.15	0.09	0.09
C34	0.15	0.15	0.16	0.11	0.11
C35	0.16	0.16	0.24	0.10	0.10
C36	0.12	0.12	0.27	0.02	0.02
C37	0.17	0.17	0.18	0.09	0.08
C38	0.18	0.18	0.19	0.11	0.11
C39	0.19	0.19	0.20	0.09	0.08
C40	0.19	0.20	0.23	0.01	0.01
C42	0.01	0.01	0.01	0.17	0.01
C43	0.01	0.01	0.01	0.04	0.01
C44	0.01	0.01	0.01	0.15	0.01
C45	0.01	0.01	0.01	0.19	0.01
C59	0.01	0.01	0.18	0.01	0.01
C60	1.11	1.11	1.27	0.01	0.01
C64	0.01	0.01	0.10	0.01	0.01
C67	0.01	0.01	0.09	0.01	0.01
C68	0.01	0.01	0.13	0.01	0.01
C69	0.06	0.06	0.18	0.01	0.01
C7	0.01	0.01	0.04	0.01	0.01
C70	0.06	0.06	0.60	0.01	0.01
C71	0.14	0.14	0.21	0.04	0.04
C72	0.10	0.10	0.17	0.01	0.01
C73	0.10	0.10	0.14	0.01	0.01
C74	0.08	0.08	0.17	0.01	0.01
C75	0.01	0.01	1.80	0.01	0.01
C76	0.01	0.01	0.49	0.01	0.01
C78	0.01	0.01	0.88	0.01	0.01
C8	0.01	0.01	0.06	0.01	0.01
C9	0.01	0.01	0.06	0.01	0.01

Analysis begun on: Wed Jul 20 15:31:12 2022
Analysis ended on: Wed Jul 20 15:31:12 2022
Total elapsed time: < 1 sec

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

SBM-18-0530 Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 29
Number of nodes 118
Number of links 149
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
St.ThomasRainGage	St.Thomas10Yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A201	0.43	95.56	0.00	30.0000	St.ThomasRainGage	A202
A202	0.22	24.44	45.71	2.0000	St.ThomasRainGage	RYCB1_Storage
A203	0.51	87.93	0.00	30.0000	St.ThomasRainGage	A204
A204	0.08	42.11	45.71	2.0000	St.ThomasRainGage	RYCB2_Storage
A205	0.05	100.00	45.71	2.0000	St.ThomasRainGage	RYCB9_Storage
A206	0.12	7.50	25.00	30.0000	St.ThomasRainGage	A207
A207	0.03	60.00	45.71	2.0000	St.ThomasRainGage	RYCB8_Storage
A208	1.52	119.68	25.00	30.0000	St.ThomasRainGage	A209
A209	0.04	80.00	45.71	2.0000	St.ThomasRainGage	RYCB3_Storage
A210	1.36	143.16	25.00	30.0000	St.ThomasRainGage	A211
A211	0.19	63.33	45.71	2.0000	St.ThomasRainGage	A211_Storage
A212	2.46	144.71	45.71	2.0000	St.ThomasRainGage	StreetA_Storage

A213	0.55	78.57	45.71	2.0000	St.ThomasRainGage StreetB_Storage1
A214	0.99	79.20	45.71	2.0000	St.ThomasRainGage S19
A215	1.09	82.58	46.70	2.0000	St.ThomasRainGage StreetB_Storage1
A216	0.25	100.00	64.29	2.0000	St.ThomasRainGage RYCB7_Storage
A217	1.85	97.37	48.65	2.0000	St.ThomasRainGage StreetB_Storage2
A218	0.54	40.00	45.71	2.0000	St.ThomasRainGage SWM_Pond
A219	0.06	75.00	0.00	2.0000	St.ThomasRainGage SWM_Pond
A220	0.58	193.33	21.43	8.0000	St.ThomasRainGage SWM_Pond
EXT201	0.11	137.50	71.43	2.0000	St.ThomasRainGage A201
EXT202	0.12	150.00	71.43	2.0000	St.ThomasRainGage A203
EXT203	0.95	73.08	0.00	30.0000	St.ThomasRainGage A205
EXT204	0.12	150.00	71.43	2.0000	St.ThomasRainGage EXT205
EXT205	1.26	78.75	0.00	30.0000	St.ThomasRainGage A206
EXT206	0.20	250.00	71.43	2.0000	St.ThomasRainGage A208
EXT207	0.30	375.00	71.43	2.0000	St.ThomasRainGage A210
U201	0.44	44.00	0.00	3.0000	St.ThomasRainGage U201_Outfall
U202	0.08	47.06	45.71	6.0000	St.ThomasRainGage U202_Outfall

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
0	JUNCTION	178.14	1.99	0.0	
4	JUNCTION	178.17	1.87	0.0	
41	JUNCTION	179.05	1.85	0.0	
42	JUNCTION	179.35	1.75	0.0	
43	JUNCTION	178.68	1.97	0.0	
44	JUNCTION	178.46	2.06	0.0	
45	JUNCTION	178.58	2.15	0.0	
46	JUNCTION	178.92	2.15	0.0	
47	JUNCTION	178.80	2.11	0.0	
48	JUNCTION	178.28	2.20	0.0	
49	JUNCTION	178.00	2.07	0.0	
50	JUNCTION	178.07	2.12	0.0	
51	JUNCTION	178.59	1.89	0.0	
52	JUNCTION	179.24	1.80	0.0	
53	JUNCTION	179.06	1.83	0.0	
54	JUNCTION	178.87	1.71	0.0	
55	JUNCTION	177.86	2.26	0.0	

56	JUNCTION	177.79	2.12	0.0
57	JUNCTION	179.17	1.97	0.0
58	JUNCTION	179.80	2.40	0.0
59	JUNCTION	183.47	1.73	0.0
60	JUNCTION	178.27	1.90	0.0
61	JUNCTION	178.42	1.90	0.0
63	JUNCTION	178.72	1.76	0.0
64	JUNCTION	179.12	2.01	0.0
CB1	JUNCTION	183.90	1.25	0.0
CB12	JUNCTION	179.02	1.25	0.0
CB14	JUNCTION	179.22	1.25	0.0
CB17	JUNCTION	179.59	1.25	0.0
CB19	JUNCTION	179.74	1.25	0.0
CB2	JUNCTION	179.18	1.25	0.0
CB21	JUNCTION	179.77	1.25	0.0
CB23	JUNCTION	179.61	1.25	0.0
CB25	JUNCTION	179.41	1.25	0.0
CB28	JUNCTION	179.35	1.25	0.0
CB3	JUNCTION	180.90	1.25	0.0
CB31	JUNCTION	179.60	1.25	0.0
CB33	JUNCTION	179.80	1.25	0.0
CB39	JUNCTION	178.83	1.25	0.0
CB42	JUNCTION	178.74	1.25	0.0
CB43	JUNCTION	179.84	1.25	0.0
CB44	JUNCTION	179.86	1.25	0.0
CB5	JUNCTION	178.89	1.25	0.0
CB7	JUNCTION	178.88	1.25	0.0
CBMH8	JUNCTION	178.82	1.75	0.0
DCB15	JUNCTION	179.28	1.25	0.0
DCB26	JUNCTION	179.22	1.25	0.0
DCB27	JUNCTION	179.22	1.25	0.0
DCB37	JUNCTION	178.61	1.25	0.0
DCB40	JUNCTION	178.76	1.25	0.0
MDMH1	JUNCTION	180.92	5.84	0.0
MDMH2	JUNCTION	179.76	5.54	0.0
MDMH3	JUNCTION	177.75	1.86	0.0
OGS	JUNCTION	177.78	2.22	0.0
RYCB1	JUNCTION	180.03	1.60	0.0
RYCB2	JUNCTION	179.43	1.65	0.0
RYCB3	JUNCTION	179.67	1.86	0.0
RYCB4	JUNCTION	178.86	1.25	0.0
RYCB5	JUNCTION	178.85	1.26	0.0
RYCB6	JUNCTION	178.50	1.55	0.0
RYCB7	JUNCTION	178.51	1.44	0.0
RYCB8	JUNCTION	180.32	2.12	0.0
RYCB9	JUNCTION	181.81	1.55	0.0
STMH1	JUNCTION	176.97	2.49	0.0
STMH10	JUNCTION	178.12	2.16	0.0
STMH11	JUNCTION	178.32	1.89	0.0
STMH12	JUNCTION	178.47	1.91	0.0
STMH13	JUNCTION	178.65	1.82	0.0
STMH14	JUNCTION	178.81	1.80	0.0
STMH15	JUNCTION	178.03	2.06	0.0
STMH16	JUNCTION	179.48	1.88	0.0
STMH17	JUNCTION	178.70	1.95	0.0
STMH18	JUNCTION	179.26	1.80	0.0
STMH19	JUNCTION	178.52	2.07	0.0

STMH2	JUNCTION	183.83	1.75	0.0
STMH20	JUNCTION	178.66	2.17	0.0
STMH21	JUNCTION	179.16	2.07	0.0
STMH22	JUNCTION	178.59	1.98	0.0
STMH23	JUNCTION	178.83	1.95	0.0
STMH3	JUNCTION	179.04	2.18	0.0
STMH4	JUNCTION	177.81	2.17	0.0
STMH5	JUNCTION	177.89	2.21	0.0
STMH6	JUNCTION	177.94	2.13	0.0
STMH7	JUNCTION	178.30	2.23	0.0
STMH9	JUNCTION	181.06	2.61	0.0
O1	OUTFALL	176.95	0.00	0.0
SWM_Pond_Outfall	OUTFALL	178.90	0.00	0.0
U201_Outfall	OUTFALL	177.71	0.68	0.0
U202_Outfall	OUTFALL	183.25	0.00	0.0
A211_Storage	STORAGE	180.57	0.45	0.0
RYCB1_Storage	STORAGE	181.63	0.45	0.0
RYCB2_Storage	STORAGE	181.08	0.38	0.0
RYCB3_Storage	STORAGE	181.53	0.45	0.0
RYCB4_Storage	STORAGE	180.11	0.45	0.0
RYCB5_Storage	STORAGE	180.11	0.45	0.0
RYCB6_Storage	STORAGE	180.05	0.27	0.0
RYCB7_Storage	STORAGE	179.95	0.39	0.0
RYCB8_Storage	STORAGE	182.44	0.45	0.0
RYCB9_Storage	STORAGE	183.36	0.13	0.0
S12	STORAGE	181.05	0.30	0.0
S13	STORAGE	180.85	0.30	0.0
S19	STORAGE	180.99	0.30	0.0
S20	STORAGE	180.84	0.30	0.0
S21	STORAGE	180.53	0.30	0.0
S22	STORAGE	180.43	0.29	0.0
S23	STORAGE	180.14	0.29	0.0
S26	STORAGE	180.47	0.30	0.0
S27	STORAGE	180.27	0.30	0.0
S30	STORAGE	185.15	0.30	0.0
S31	STORAGE	182.15	0.30	0.0
S32	STORAGE	181.09	0.30	0.0
S7	STORAGE	181.11	0.30	0.0
S8	STORAGE	181.02	0.30	0.0
S9	STORAGE	180.86	0.30	0.0
StreetA_Storage	STORAGE	180.47	0.30	0.0
StreetB_Storage1	STORAGE	180.01	0.29	0.0
StreetB_Storage2	STORAGE	179.86	0.29	0.0
SWM_Pond	STORAGE	177.02	1.89	0.0

****
Link Summary
****

Name	From Node	To Node	Type	Length	% Slope	Roughness
4	RYCB6	STMH11	CONDUIT	22.4	0.8036	0.0130
C1	MDMH1	MDMH2	CONDUIT	13.7	8.4977	0.0130

C10	43	STMH22	CONDUIT	11.1	0.8116	0.0130
C11	STMH22	STMH7	CONDUIT	15.2	1.9082	0.0130
C12	CBMH8	STMH7	CONDUIT	50.5	1.0298	0.0130
C13	RYCB9	STMH21	CONDUIT	43.8	6.0613	0.0130
C14	STMH21	64	CONDUIT	14.9	0.2676	0.0130
C15	64	STMH3	CONDUIT	27.2	0.2947	0.0130
C16	RYCB8	STMH3	CONDUIT	65.0	1.9696	0.0130
C17	STMH3	46	CONDUIT	30.6	0.3919	0.0130
C18	46	47	CONDUIT	29.7	0.4040	0.0130
C19	47	STMH20	CONDUIT	14.4	0.9736	0.0130
C2	MDMH2	MDMH3	CONDUIT	172.8	1.1633	0.0130
C20	RYCB3	STMH20	CONDUIT	59.7	1.6920	0.0130
C21	STMH20	45	CONDUIT	26.4	0.3029	0.0130
C22	45	STMH19	CONDUIT	18.5	0.3245	0.0130
C23	STMH19	44	CONDUIT	21.1	0.2848	0.0130
C24	44	STMH7	CONDUIT	3.6	4.4120	0.0130
C25	STMH7	48	CONDUIT	6.3	0.3180	0.0130
C26	48	0	CONDUIT	45.5	0.3076	0.0130
C27	RYCB4	0	CONDUIT	5.5	13.2045	0.0130
C28	RYCB5	0	CONDUIT	5.5	13.0180	0.0130
C29	0	STMH6	CONDUIT	50.4	0.3968	0.0130
C3	MDMH3	U201_Outfall	CONDUIT	6.0	0.6667	0.0130
C30	STMH18	52	CONDUIT	2.8	0.7169	0.0130
C31	52	53	CONDUIT	30.5	0.5909	0.0130
C32	53	54	CONDUIT	32.9	0.5772	0.0130
C33	54	STMH17	CONDUIT	12.7	1.3355	0.0130
C34	STMH17	51	CONDUIT	10.7	1.0243	0.0130
C35	51	STMH10	CONDUIT	42.3	1.1122	0.0130
C36	RYCB7	STMH10	CONDUIT	32.5	1.2001	0.0130
C37	STMH10	50	CONDUIT	16.8	0.2971	0.0130

C38		50	STMH15	CONDUIT	18.1
0.2214	0.0130				
C39		STMH15	49	CONDUIT	10.3
0.2921	0.0130				
C4		RYCB1	STMH16	CONDUIT	44.9
1.2250	0.0130				
C40		49	STMH6	CONDUIT	2.1
2.8180	0.0130				
C41		STMH6	STMH5	CONDUIT	9.8
0.5102	0.0130				
C42		STMH5	55	CONDUIT	30.7
0.0978	0.0130				
C43		55	STMH4	CONDUIT	24.2
0.2063	0.0130				
C44		STMH4	56	CONDUIT	18.5
0.1082	0.0130				
C45		56	OGS	CONDUIT	10.7
0.0933	0.0130				
C46		STMH14	63	CONDUIT	15.1
0.5956	0.0130				
C47		63	STMH13	CONDUIT	8.2
0.8547	0.0130				
C48		STMH13	STMH12	CONDUIT	18.2
0.9891	0.0130				
C49		STMH12	61	CONDUIT	11.4
0.4371	0.0130				
C5		STMH16	42	CONDUIT	16.8
0.7729	0.0130				
C50		61	STMH11	CONDUIT	22.0
0.4546	0.0130				
C51		STMH11	60	CONDUIT	10.4
0.4794	0.0130				
C52		60	4	CONDUIT	23.5
0.4248	0.0130				
C53		STMH2	59	CONDUIT	7.5
4.8249	0.0130				
C54		59	STMH9	CONDUIT	32.3
7.4752	0.0130				
C55		STMH9	58	CONDUIT	45.7
2.7594	0.0130				
C56		58	57	CONDUIT	23.0
2.7437	0.0130				
C57		57	OGS	CONDUIT	48.8
2.8524	0.0130				
C58		OGS	SWM_Pond	CONDUIT	117.7
0.6457	0.0130				
C59		4	OGS	CONDUIT	14.8
2.6307	0.0130				
C6		42	41	CONDUIT	40.5
0.7406	0.0130				
C60		SWM_Pond	STMH1	CONDUIT	14.9
0.3356	0.0130				
C62		CB33	42	CONDUIT	5.5
8.2093	0.0130				
C63		CB31	41	CONDUIT	5.5
10.0504	0.0130				
C64		CB28	43	CONDUIT	5.5
12.2732	0.0130				
C65		CB44	64	CONDUIT	5.5
13.5780	0.0130				

C66		CB21	46	CONDUIT	5.5
15.6425	0.0130				
C67		CB23	47	CONDUIT	5.5
14.8896	0.0130				
C68		CB25	45	CONDUIT	5.5
15.2657	0.0130				
C69		DCB27	44	CONDUIT	5.5
13.9520	0.0130				
C7		41	STMH23	CONDUIT	18.5
1.1912	0.0130				
C70		DCB26	48	CONDUIT	5.5
17.3461	0.0130				
C71		CB19	52	CONDUIT	5.5
9.1287	0.0130				
C72		CB17	53	CONDUIT	5.5
9.6814	0.0130				
C73		DCB15	54	CONDUIT	5.5
7.4753	0.0130				
C74		CB2	51	CONDUIT	5.5
10.7895	0.0130				
C75		CB5	50	CONDUIT	5.5
15.0776	0.0130				
C76		DCB40	49	CONDUIT	5.5
13.9520	0.0130				
C77		CB39	55	CONDUIT	5.5
17.9172	0.0130				
C78		DCB37	56	CONDUIT	5.5
15.0776	0.0130				
C79		CB14	63	CONDUIT	5.5
9.1287	0.0130				
C8		RYCB2	STMH23	CONDUIT	46.0
1.3045	0.0130				
C80		CB12	61	CONDUIT	5.5
10.9746	0.0130				
C81		CB7	60	CONDUIT	5.5
11.1598	0.0130				
C82		CB42	4	CONDUIT	5.5
10.4197	0.0130				
C83		CB1	59	CONDUIT	5.5
7.8422	0.0130				
C84		CB3	58	CONDUIT	5.5
20.4124	0.0130				
C85		CB43	57	CONDUIT	5.5
12.2732	0.0130				
C9		STMH23	43	CONDUIT	29.6
0.5066	0.0130				
1		RYCB1_Storage	RYCB1	ORIFICE	
100		S27	CB12	ORIFICE	
119		RYCB4_Storage	RYCB5	ORIFICE	
12		StreetB_Storage2	CB42	ORIFICE	
120		RYCB5_Storage	RYCB4	ORIFICE	
13		StreetB_Storage2	CB39	ORIFICE	
14		StreetB_Storage2	CB7	ORIFICE	
151		S26	CB14	ORIFICE	
2		STMH1	O1	ORIFICE	
3		StreetA_Storage	DCB27	ORIFICE	
37		S12	CB33	ORIFICE	
38		RYCB2_Storage	RYCB2	ORIFICE	
39		RYCB3_Storage	RYCB3	ORIFICE	

40	RYCB8_Storage	RYCB8	ORIFICE
41	RYCB9_Storage	RYCB9	ORIFICE
42	RYCB7_Storage	RYCB7	ORIFICE
43	A211_Storage	CBMH8	ORIFICE
5	RYCB6_Storage	RYCB6	ORIFICE
6	StreetA_Storage	CB25	ORIFICE
7	StreetA_Storage	DCB26	ORIFICE
8	StreetA_Storage	CB28	ORIFICE
80	S13	CB31	ORIFICE
85	S9	CB23	ORIFICE
86	S8	CB21	ORIFICE
87	S7	CB44	ORIFICE
88	S19	CB19	ORIFICE
89	S20	CB17	ORIFICE
90	S30	CB1	ORIFICE
91	S31	CB3	ORIFICE
92	S32	CB43	ORIFICE
94	StreetB_Storage2	DCB37	ORIFICE
96	StreetB_Storage1	DCB40	ORIFICE
97	S22	CB2	ORIFICE
98	S23	CB5	ORIFICE
99	S21	DCB15	ORIFICE
10	S13	StreetA_Storage	WEIR
18	S27	StreetB_Storage2	WEIR
19	S32	StreetB_Storage2	WEIR
9	S9	StreetA_Storage	WEIR
A211_Weir	A211_Storage	StreetA_Storage	WEIR
RYCB1_Weir	RYCB1_Storage	RYCB2_Storage	WEIR
RYCB2_Weir	RYCB2_Storage	A211_Storage	WEIR
RYCB3_Weir	RYCB3_Storage	A211_Storage	WEIR
RYCB4_Weir	RYCB4_Storage	StreetB_Storage1	WEIR
RYCB5_Weir	RYCB5_Storage	StreetB_Storage1	WEIR
RYCB6_Weir	RYCB6_Storage	StreetB_Storage2	WEIR
RYCB7_Weir	RYCB7_Storage	RYCB6_Storage	WEIR
RYCB8_Weir	RYCB8_Storage	RYCB3_Storage	WEIR
RYCB9_Weir	RYCB9_Storage	RYCB8_Storage	WEIR
StreetA_Weir	StreetA_Storage	RYCB4_Storage	WEIR
StreetB_Weir1	StreetB_Storage1	StreetB_Storage2	WEIR
StreetB_Weir2	StreetB_Storage2	SWM_Pond	WEIR
SWM_Pond_Weir	SWM_Pond	SWM_Pond_Outfall	WEIR
W17	S19	S20	WEIR
W18	S20	S21	WEIR
W19	S21	S22	WEIR
W20	S22	S23	WEIR
W21	S23	StreetB_Storage1	WEIR
W27	S26	S27	WEIR
W30	S30	S31	WEIR
W31	S31	S32	WEIR
W6	S12	S13	WEIR
W8	S7	S8	WEIR
W9	S8	S9	WEIR

****
Cross Section Summary
****

		Full	Full	Hyd.	Max.	No. of

Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
4	CIRCULAR	0.30	0.07	0.07	0.30	1	0.09
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.83
C10	CIRCULAR	0.45	0.16	0.11	0.45	1	0.26
C11	CIRCULAR	0.45	0.16	0.11	0.45	1	0.39
C12	CIRCULAR	0.45	0.16	0.11	0.45	1	0.29
C13	CIRCULAR	0.30	0.07	0.07	0.30	1	0.24
C14	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C15	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C16	CIRCULAR	0.30	0.07	0.07	0.30	1	0.14
C17	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C18	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C19	CIRCULAR	0.45	0.16	0.11	0.45	1	0.28
C2	CIRCULAR	0.60	0.28	0.15	0.60	1	0.66
C20	CIRCULAR	0.38	0.11	0.09	0.38	1	0.23
C21	CIRCULAR	0.53	0.22	0.13	0.53	1	0.24
C22	CIRCULAR	0.53	0.22	0.13	0.53	1	0.25
C23	CIRCULAR	0.53	0.22	0.13	0.53	1	0.23
C24	CIRCULAR	0.53	0.22	0.13	0.53	1	0.90
C25	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C26	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C27	CIRCULAR	0.25	0.05	0.06	0.25	1	0.22
C28	CIRCULAR	0.25	0.05	0.06	0.25	1	0.21
C29	CIRCULAR	0.68	0.36	0.17	0.68	1	0.53
C3	CIRCULAR	0.68	0.36	0.17	0.68	1	0.69
C30	CIRCULAR	0.30	0.07	0.07	0.30	1	0.08
C31	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C32	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C33	CIRCULAR	0.30	0.07	0.07	0.30	1	0.11

C34	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C35	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C36	CIRCULAR	0.25	0.05	0.06	0.25	1
0.07						
C37	CIRCULAR	0.45	0.16	0.11	0.45	1
0.16						
C38	CIRCULAR	0.45	0.16	0.11	0.45	1
0.13						
C39	CIRCULAR	0.45	0.16	0.11	0.45	1
0.15						
C4	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C40	CIRCULAR	0.45	0.16	0.11	0.45	1
0.48						
C41	CIRCULAR	0.90	0.64	0.23	0.90	1
1.29						
C42	CIRCULAR	0.90	0.64	0.23	0.90	1
0.57						
C43	CIRCULAR	0.90	0.64	0.23	0.90	1
0.82						
C44	CIRCULAR	0.90	0.64	0.23	0.90	1
0.60						
C45	CIRCULAR	0.90	0.64	0.23	0.90	1
0.55						
C46	CIRCULAR	0.30	0.07	0.07	0.30	1
0.07						
C47	CIRCULAR	0.30	0.07	0.07	0.30	1
0.09						
C48	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C49	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C5	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C50	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C51	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C52	CIRCULAR	0.38	0.11	0.09	0.38	1
0.11						
C53	CIRCULAR	0.25	0.05	0.06	0.25	1
0.13						
C54	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C55	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C56	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C57	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C58	CIRCULAR	1.05	0.87	0.26	1.05	1
2.19						
C59	CIRCULAR	0.38	0.11	0.09	0.38	1
0.28						
C6	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C60	CIRCULAR	0.68	0.36	0.17	0.68	1
0.49						

C62	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C63	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C64	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C65	CIRCULAR	0.20	0.03	0.05	0.20	1
0.12						
C66	CIRCULAR	0.25	0.05	0.06	0.25	1
0.24						
C67	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C68	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C69	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C7	CIRCULAR	0.38	0.11	0.09	0.38	1
0.19						
C70	CIRCULAR	0.25	0.05	0.06	0.25	1
0.25						
C71	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C72	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C73	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C74	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C75	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C76	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C77	CIRCULAR	0.20	0.03	0.05	0.20	1
0.14						
C78	CIRCULAR	0.25	0.05	0.06	0.25	1
0.23						
C79	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C8	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C80	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C81	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C82	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C83	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C84	CIRCULAR	0.20	0.03	0.05	0.20	1
0.15						
C85	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C9	CIRCULAR	0.45	0.16	0.11	0.45	1
0.20						

****

NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,

not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 12/11/2020 00:00:00
Ending Date 12/11/2020 03:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:01:00
Routing Time Step ..... 30.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 1
Head Tolerance ..... 0.001500 m

**********	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
**********	---	---
Total Precipitation	0.691	41.849
Evaporation Loss	0.000	0.000
Infiltration Loss	0.266	16.124
Surface Runoff	0.316	19.173
Final Storage	0.109	6.579
Continuity Error (%)	-0.064	

**********	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
**********	---	---
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.316	3.160
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.252	2.522
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.064	0.637
Continuity Error (%)	0.036	

```
  ************************
  Highest Continuity Errors
  ************************
  Node STMH11 (4.12%)
  Node 60 (2.58%)
  Node STMH21 (1.77%)
  Node CB21 (1.76%)
  Node CB39 (1.23%)


  ***************************
  Time-Step Critical Elements
  ***************************
  Link C40 (86.69%)
  Link C24 (3.87%)
  Link C69 (2.65%)
  Link C70 (1.68%)
  Link C78 (1.68%)


  *******************************
  Highest Flow Instability Indexes
  *******************************
  Link C45 (18)
  Link C40 (15)
  Link C58 (13)
  Link C44 (12)
  Link C39 (10)


  ************************
  Routing Time Step Summary
  ************************
  Minimum Time Step           :     0.27 sec
  Average Time Step           :     0.95 sec
  Maximum Time Step           :    30.00 sec
  Percent in Steady State     :    -0.00
  Average Iterations per Step :     2.39
  Percent Not Converging      :     4.08
  Time Step Frequencies       :
     30.000 - 13.228 sec      :     0.04 %
     13.228 -  5.833 sec      :     0.03 %
      5.833 -  2.572 sec      :     0.82 %
      2.572 -  1.134 sec      :    19.82 %
      1.134 -  0.500 sec      :    79.30 %


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ---------------------------------------------------------------------------------------
---------------------------------------------
                             Total      Total      Total      Total     Imperv
Perv      Total       Total     Peak  Runoff
```

Subcatchment	Precip mm	Runon mm	Evap mm	Infil mm	Runoff mm	Runoff mm	Runoff 10^6 ltr	Runoff CMS	Coeff
A201	41.85	9.77	0.00	30.23	0.00	12.29	12.29	0.05	0.02	0.238
A202	41.85	23.94	0.00	9.15	29.07	21.52	50.59	0.11	0.05	0.769
A203	41.85	8.98	0.00	30.23	0.00	11.21	11.21	0.06	0.02	0.220
A204	41.85	71.18	0.00	9.15	50.81	48.37	99.18	0.08	0.02	0.878
A205	41.85	35.59	0.00	9.15	34.65	29.89	64.54	0.03	0.02	0.833
A206	41.85	46.85	0.00	22.67	21.68	29.12	50.80	0.06	0.02	0.573
A207	41.85	201.39	0.00	9.15	110.42	118.94	229.36	0.07	0.03	0.943
A208	41.85	5.02	0.00	22.67	11.32	5.01	16.32	0.25	0.21	0.348
A209	41.85	618.65	0.00	9.15	301.29	345.75	647.05	0.26	0.22	0.980
A210	41.85	8.42	0.00	22.67	12.17	7.77	19.94	0.27	0.20	0.397
A211	41.85	142.40	0.00	9.15	83.29	86.18	169.47	0.32	0.22	0.920
A212	41.85	0.00	0.00	9.15	18.18	8.82	27.00	0.66	0.49	0.645
A213	41.85	0.00	0.00	9.15	18.31	10.17	28.47	0.16	0.13	0.680
A214	41.85	0.00	0.00	9.15	18.23	9.39	27.63	0.27	0.21	0.660
A215	41.85	0.00	0.00	8.98	18.61	9.16	27.78	0.30	0.23	0.664
A216	41.85	0.00	0.00	6.02	25.83	7.26	33.09	0.08	0.09	0.791
A217	41.85	0.00	0.00	8.66	19.31	8.23	27.55	0.51	0.37	0.658
A218	41.85	0.00	0.00	9.15	18.22	9.26	27.48	0.15	0.11	0.657
A219	41.85	0.00	0.00	16.86	0.00	20.40	20.40	0.01	0.01	0.487
A220	41.85	0.00	0.00	22.38	8.64	6.86	15.50	0.09	0.07	0.370
EXT201	41.85	0.00	0.00	1.32	28.77	9.45	38.22	0.04	0.05	0.913
EXT202	41.85	0.00	0.00	1.32	28.77	9.45	38.22	0.05	0.06	0.913
EXT203	41.85	0.00	0.00	30.23	0.00	1.90	1.90	0.02	0.00	0.045
EXT204	41.85	0.00	0.00	1.32	28.77	9.45	38.22	0.05	0.06	0.913
EXT205	41.85	3.64	0.00	30.23	0.00	4.50	4.50	0.06	0.01	0.099
EXT206	41.85	0.00	0.00	1.32	28.77	9.45	38.22	0.08	0.10	0.913
EXT207	41.85	0.00	0.00	1.32	28.77	9.45	38.22	0.11	0.14	0.913

```
  U201                      41.85       0.00       0.00      28.49       0.00
6.23       6.23        0.03     0.01   0.149
  U202                      41.85       0.00       0.00       9.15      18.42
11.18      29.60        0.02     0.03   0.707
```

****
Node Depth Summary
****

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
0	JUNCTION	0.27	1.20	179.34	0 01:12	1.19
4	JUNCTION	0.01	0.19	178.36	0 01:12	0.18
41	JUNCTION	0.05	2.30	181.35	0 01:11	0.64
42	JUNCTION	0.04	0.30	179.65	0 01:13	0.30
43	JUNCTION	0.11	1.25	179.93	0 01:10	1.03
44	JUNCTION	0.14	1.29	179.75	0 01:12	1.27
45	JUNCTION	0.13	1.50	180.08	0 01:10	1.17
46	JUNCTION	0.09	2.28	181.20	0 01:10	0.75
47	JUNCTION	0.08	2.05	180.85	0 01:10	0.91
48	JUNCTION	0.29	1.41	179.69	0 01:12	1.40
49	JUNCTION	0.23	0.95	178.95	0 01:13	0.93
50	JUNCTION	0.20	1.02	179.09	0 01:11	1.00
51	JUNCTION	0.16	1.68	180.27	0 01:09	1.58
52	JUNCTION	0.20	1.77	181.01	0 01:10	1.76
53	JUNCTION	0.20	1.86	180.92	0 01:10	1.86
54	JUNCTION	0.16	1.79	180.66	0 01:10	1.77
55	JUNCTION	0.31	1.50	179.36	0 01:13	0.86
56	JUNCTION	0.29	0.84	178.63	0 01:13	0.81
57	JUNCTION	0.00	0.00	179.17	0 00:00	0.00
58	JUNCTION	0.00	0.00	179.80	0 00:00	0.00
59	JUNCTION	0.00	0.00	183.47	0 00:00	0.00
60	JUNCTION	0.00	0.09	178.36	0 01:12	0.09
61	JUNCTION	0.00	0.00	178.42	0 00:00	0.00
63	JUNCTION	0.00	0.00	178.72	0 00:00	0.00
64	JUNCTION	0.04	1.60	180.72	0 01:12	0.52
CB1	JUNCTION	0.00	0.00	183.90	0 00:00	0.00
CB12	JUNCTION	0.00	0.00	179.02	0 00:00	0.00
CB14	JUNCTION	0.00	0.00	179.22	0 00:00	0.00
CB17	JUNCTION	0.06	1.41	181.00	0 01:10	1.39
CB19	JUNCTION	0.14	1.40	181.14	0 01:10	1.39
CB2	JUNCTION	0.03	1.26	180.44	0 01:09	0.99
CB21	JUNCTION	0.00	0.21	179.98	0 01:12	0.10
CB23	JUNCTION	0.00	0.35	179.96	0 01:12	0.17
CB25	JUNCTION	0.00	0.45	179.86	0 01:12	0.39
CB28	JUNCTION	0.00	0.39	179.74	0 01:12	0.38
CB3	JUNCTION	0.00	0.00	180.90	0 00:00	0.00
CB31	JUNCTION	0.00	0.16	179.76	0 01:11	0.09
CB33	JUNCTION	0.00	0.00	179.80	0 00:00	0.00
CB39	JUNCTION	0.00	0.01	178.84	0 01:13	0.00
CB42	JUNCTION	0.00	0.00	178.74	0 00:00	0.00
CB43	JUNCTION	0.00	0.00	179.84	0 00:00	0.00
CB44	JUNCTION	0.00	0.33	180.19	0 01:12	0.01

CB5	JUNCTION	0.00	0.30	179.19	0	01:10	0.27
CB7	JUNCTION	0.00	0.00	178.88	0	00:00	0.00
CBMH8	JUNCTION	0.15	1.30	180.12	0	01:10	1.15
DCB15	JUNCTION	0.05	1.41	180.69	0	01:10	1.40
DCB26	JUNCTION	0.08	1.08	180.30	0	01:11	1.04
DCB27	JUNCTION	0.09	1.11	180.33	0	01:12	1.09
DCB37	JUNCTION	0.06	0.45	179.06	0	01:11	0.40
DCB40	JUNCTION	0.05	0.27	179.03	0	01:11	0.22
MDMH1	JUNCTION	0.00	0.00	180.92	0	00:00	0.00
MDMH2	JUNCTION	0.00	0.00	179.76	0	00:00	0.00
MDMH3	JUNCTION	0.00	0.00	177.75	0	00:00	0.00
OGS	JUNCTION	0.22	0.58	178.36	0	01:12	0.58
RYCB1	JUNCTION	0.04	0.08	180.11	0	01:10	0.08
RYCB2	JUNCTION	0.08	0.32	179.75	0	01:13	0.23
RYCB3	JUNCTION	0.05	0.15	179.82	0	01:10	0.15
RYCB4	JUNCTION	0.01	0.49	179.35	0	01:13	0.47
RYCB5	JUNCTION	0.01	0.53	179.38	0	01:11	0.52
RYCB6	JUNCTION	0.00	0.00	178.50	0	00:00	0.00
RYCB7	JUNCTION	0.09	1.25	179.76	0	01:10	1.24
RYCB8	JUNCTION	0.05	0.11	180.43	0	01:10	0.10
RYCB9	JUNCTION	0.01	0.03	181.84	0	01:10	0.03
STMH1	JUNCTION	0.69	0.96	177.93	0	01:43	0.96
STMH10	JUNCTION	0.19	1.06	179.18	0	01:10	1.03
STMH11	JUNCTION	0.00	0.04	178.36	0	01:13	0.04
STMH12	JUNCTION	0.00	0.00	178.47	0	00:00	0.00
STMH13	JUNCTION	0.00	0.00	178.65	0	00:00	0.00
STMH14	JUNCTION	0.00	0.00	178.81	0	00:00	0.00
STMH15	JUNCTION	0.22	0.96	178.99	0	01:11	0.93
STMH16	JUNCTION	0.04	0.18	179.66	0	01:13	0.15
STMH17	JUNCTION	0.17	1.74	180.44	0	01:09	1.68
STMH18	JUNCTION	0.18	1.75	181.01	0	01:10	1.74
STMH19	JUNCTION	0.14	1.32	179.84	0	01:10	1.22
STMH2	JUNCTION	0.00	0.00	183.83	0	00:00	0.00
STMH20	JUNCTION	0.13	2.23	180.89	0	01:10	1.07
STMH21	JUNCTION	0.04	2.13	181.29	0	01:12	0.48
STMH22	JUNCTION	0.11	1.14	179.73	0	01:11	1.12
STMH23	JUNCTION	0.11	1.84	180.67	0	01:10	0.86
STMH3	JUNCTION	0.08	1.85	180.89	0	01:12	0.61
STMH4	JUNCTION	0.32	0.89	178.70	0	01:13	0.83
STMH5	JUNCTION	0.34	1.10	178.99	0	01:13	0.97
STMH6	JUNCTION	0.29	1.00	178.94	0	01:13	0.97
STMH7	JUNCTION	0.28	1.42	179.72	0	01:12	1.41
STMH9	JUNCTION	0.00	0.00	181.06	0	00:00	0.00
O1	OUTFALL	0.00	0.00	176.95	0	00:00	0.00
SWM_Pond_Outfall	OUTFALL	0.00	0.00	178.90	0	00:00	0.00
U201_Outfall	OUTFALL	0.00	0.00	177.71	0	00:00	0.00
U202_Outfall	OUTFALL	0.00	0.00	183.25	0	00:00	0.00
A211_Storage	STORAGE	0.05	0.15	180.72	0	01:10	0.15
RYCB1_Storage	STORAGE	0.01	0.02	181.65	0	01:10	0.02
RYCB2_Storage	STORAGE	0.02	0.05	181.13	0	01:10	0.05
RYCB3_Storage	STORAGE	0.02	0.07	181.60	0	01:11	0.07
RYCB4_Storage	STORAGE	0.00	0.08	180.19	0	01:11	0.08
RYCB5_Storage	STORAGE	0.00	0.00	180.11	0	00:00	0.00
RYCB6_Storage	STORAGE	0.00	0.00	180.05	0	00:00	0.00
RYCB7_Storage	STORAGE	0.01	0.07	180.02	0	01:10	0.07
RYCB8_Storage	STORAGE	0.02	0.04	182.48	0	01:10	0.04
RYCB9_Storage	STORAGE	0.00	0.01	183.37	0	01:10	0.01

S12	STORAGE	0.00	0.00	181.05	0	00:00	0.00
S13	STORAGE	0.00	0.00	180.85	0	00:00	0.00
S19	STORAGE	0.04	0.21	181.20	0	01:10	0.21
S20	STORAGE	0.01	0.20	181.04	0	01:10	0.20
S21	STORAGE	0.00	0.22	180.75	0	01:10	0.21
S22	STORAGE	0.00	0.02	180.45	0	01:10	0.02
S23	STORAGE	0.00	0.05	180.19	0	01:10	0.05
S26	STORAGE	0.00	0.00	180.47	0	00:00	0.00
S27	STORAGE	0.00	0.00	180.27	0	00:00	0.00
S30	STORAGE	0.00	0.00	185.15	0	00:00	0.00
S31	STORAGE	0.00	0.00	182.15	0	00:00	0.00
S32	STORAGE	0.00	0.00	181.09	0	00:00	0.00
S7	STORAGE	0.00	0.00	181.11	0	00:00	0.00
S8	STORAGE	0.00	0.00	181.02	0	00:00	0.00
S9	STORAGE	0.00	0.00	180.86	0	00:00	0.00
StreetA_Storage	STORAGE	0.04	0.14	180.61	0	01:11	0.14
StreetB_Storage1	STORAGE	0.02	0.09	180.10	0	01:10	0.09
StreetB_Storage2	STORAGE	0.03	0.12	179.98	0	01:10	0.12
SWM_Pond	STORAGE	0.67	0.94	177.96	0	01:43	0.94

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min		Lateral Inflow Volume 10^6 ltr	Total Inflow 10^6 ltr	Flow Balance Error Percent
0	JUNCTION	0.000	0.797	0	01:12	0	1.53	0.231
4	JUNCTION	0.000	0.018	0	01:16	0	0.0037	-0.475
41	JUNCTION	0.000	0.127	0	01:11	0	0.0424	0.162
42	JUNCTION	0.000	0.065	0	01:11	0	0.0388	0.240
43	JUNCTION	0.000	0.109	0	01:14	0	0.196	0.158
44	JUNCTION	0.000	0.312	0	01:12	0	0.526	0.022
45	JUNCTION	0.000	0.145	0	01:10	0	0.201	0.296
46	JUNCTION	0.000	0.184	0	01:10	0	0.121	0.416
47	JUNCTION	0.000	0.214	0	01:10	0	0.126	0.175
48	JUNCTION	0.000	0.742	0	01:12	0	1.5	0.125
49	JUNCTION	0.000	0.388	0	01:10	0	0.56	-0.673

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  50                    JUNCTION     0.000    0.277     0  01:10           0
0.354       0.104
  51                    JUNCTION     0.000    0.153     0  01:10           0
0.269       0.093
  52                    JUNCTION     0.000    0.127     0  01:08           0
0.235       0.096
  53                    JUNCTION     0.000    0.150     0  01:09           0
0.253       0.163
  54                    JUNCTION     0.000    0.150     0  01:09           0
0.268       0.072
  55                    JUNCTION     0.000    1.090     0  01:11           0
2.02       0.140
  56                    JUNCTION     0.000    1.330     0  01:13           0
2.29       0.047
  57                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  58                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  59                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  60                    JUNCTION     0.000    0.006     0  01:11           0
0.000858       2.650
  61                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  63                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  64                    JUNCTION     0.000    0.121     0  01:12           0
0.0202      -0.408
  CB1                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB12                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB14                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB17                  JUNCTION     0.000    0.072     0  01:09           0
0.0187      -0.109
  CB19                  JUNCTION     0.000    0.130     0  01:08           0
0.235      -0.006
  CB2                   JUNCTION     0.000    0.032     0  01:09           0
0.002      -0.448
  CB21                  JUNCTION     0.000    0.058     0  01:10           0
0.000361       1.795
  CB23                  JUNCTION     0.000    0.040     0  01:10           0
0.000591       0.822
  CB25                  JUNCTION     0.000    0.022     0  01:10           0
0.000833      -0.020
  CB28                  JUNCTION     0.000    0.028     0  01:11           0
0.00118      -0.001
  CB3                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB31                  JUNCTION     0.000    0.042     0  01:11           0
0.000312       0.913
  CB33                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB39                  JUNCTION     0.000    0.008     0  01:13           0
1.68e-05       0.206 ltr
  CB42                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB43                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
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  CB44                  JUNCTION     0.000    0.059     0  01:12           0
0.000374       0.359
  CB5                   JUNCTION     0.000    0.047     0  01:10           0
0.00441        0.010
  CB7                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CBMH8                 JUNCTION     0.000    0.259     0  01:10           0
0.47       0.103
  DCB15                 JUNCTION     0.000    0.060     0  01:12           0
0.0153      -0.188
  DCB26                 JUNCTION     0.000    0.225     0  01:11           0
0.333       0.005
  DCB27                 JUNCTION     0.000    0.225     0  01:11           0
0.333       0.006
  DCB37                 JUNCTION     0.000    0.188     0  01:10           0
0.268       0.014
  DCB40                 JUNCTION     0.000    0.118     0  01:10           0
0.151       0.019
  MDMH1                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH2                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH3                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  OGS                   JUNCTION     0.000    1.553     0  01:13           0
2.29       0.232
  RYCB1                 JUNCTION     0.000    0.016     0  01:10           0
0.0365       0.175
  RYCB2                 JUNCTION     0.000    0.056     0  01:10           0
0.154       0.132
  RYCB3                 JUNCTION     0.000    0.073     0  01:10           0
0.0849       0.146
  RYCB4                 JUNCTION     0.000    0.040     0  01:10           0
0.00113       0.106
  RYCB5                 JUNCTION     0.000    0.094     0  01:11           0
0.023       0.002
  RYCB6                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  RYCB7                 JUNCTION     0.000    0.089     0  01:10           0
0.0827       0.041
  RYCB8                 JUNCTION     0.000    0.037     0  01:10           0
0.0901       0.357
  RYCB9                 JUNCTION     0.000    0.006     0  01:10           0
0.0106       0.215
  STMH1                 JUNCTION     0.000    0.361     0  01:43           0
2.48       0.469
  STMH10                JUNCTION     0.000    0.236     0  01:10           0
0.35       0.135
  STMH11                JUNCTION     0.000    0.002     0  01:12           0
0.000194       4.293
  STMH12                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH13                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH14                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH15                JUNCTION     0.000    0.278     0  01:10           0
0.354      -0.098
  STMH16                JUNCTION     0.000    0.033     0  01:12           0
0.0373       0.303
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STMH17	JUNCTION	0.000	0.149	0	01:12	0	0.267
0.048							
STMH18	JUNCTION	0.000	0.007	0	01:07	0	0.000421
1.831							
STMH19	JUNCTION	0.000	0.145	0	01:10	0	0.203
0.236							
STMH2	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
STMH20	JUNCTION	0.000	0.218	0	01:10	0	0.206
0.584							
STMH21	JUNCTION	0.000	0.110	0	01:12	0	0.0137
1.804							
STMH22	JUNCTION	0.000	0.110	0	01:14	0	0.196
0.074							
STMH23	JUNCTION	0.000	0.126	0	01:10	0	0.197
0.271							
STMH3	JUNCTION	0.000	0.161	0	01:11	0	0.116
0.891							
STMH4	JUNCTION	0.000	1.119	0	01:11	0	2.02
0.131							
STMH5	JUNCTION	0.000	1.095	0	01:11	0	2.03
0.107							
STMH6	JUNCTION	0.000	1.101	0	01:11	0	2.08
0.137							
STMH7	JUNCTION	0.000	0.553	0	01:09	0	1.18
0.145							
STMH9	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
O1	OUTFALL	0.000	0.361	0	01:43	0	2.47
0.000							
SWM_Pond_Outfall	OUTFALL	0.000	0.000	0	00:00	0	0
0.000 ltr							
U201_Outfall	OUTFALL	0.005	0.005	0	01:38	0.0273	0.0273
0.000							
U202_Outfall	OUTFALL	0.026	0.026	0	01:10	0.0237	0.0237
0.000							
A211_Storage	STORAGE	0.216	0.364	0	01:10	0.322	0.495
0.005							
RYCB1_Storage	STORAGE	0.049	0.049	0	01:10	0.111	0.111
0.005							
RYCB2_Storage	STORAGE	0.023	0.056	0	01:10	0.0792	0.154
0.011							
RYCB3_Storage	STORAGE	0.221	0.221	0	01:10	0.259	0.259
0.003							
RYCB4_Storage	STORAGE	0.000	0.094	0	01:11	0	0.023
0.000							
RYCB5_Storage	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
RYCB6_Storage	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
RYCB7_Storage	STORAGE	0.089	0.089	0	01:10	0.0827	0.0827
0.004							
RYCB8_Storage	STORAGE	0.025	0.037	0	01:10	0.0685	0.0901
0.023							
RYCB9_Storage	STORAGE	0.018	0.018	0	01:10	0.0321	0.0321
0.013							
S12	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S13	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							

S19	STORAGE	0.209	0.209	0	01:10	0.273	0.273
-0.000							
S20	STORAGE	0.000	0.155	0	01:10	0	0.0385
0.020							
S21	STORAGE	0.000	0.113	0	01:10	0	0.0201
0.037							
S22	STORAGE	0.000	0.063	0	01:10	0	0.00551
0.118							
S23	STORAGE	0.000	0.047	0	01:10	0	0.00422
0.194							
S26	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S27	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S30	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S31	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S32	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S7	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S8	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S9	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
StreetA_Storage	STORAGE	0.486	0.589	0	01:10	0.664	0.689
0.007							
StreetB_Storage1	STORAGE	0.361	0.361	0	01:10	0.459	0.459
0.001							
StreetB_Storage2	STORAGE	0.373	0.613	0	01:10	0.509	0.817
0.005							
SWM_Pond	STORAGE	0.183	1.738	0	01:12	0.25	3.08
1.241							

****
Node Surcharge Summary
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Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
0	JUNCTION	0.15	0.525	0.790
41	JUNCTION	0.06	1.923	0.000
43	JUNCTION	0.11	0.804	0.716
44	JUNCTION	0.16	0.765	0.770
45	JUNCTION	0.13	0.972	0.653
46	JUNCTION	0.07	1.834	0.000
47	JUNCTION	0.10	1.605	0.055
48	JUNCTION	0.16	0.739	0.786
49	JUNCTION	0.28	0.505	1.115
50	JUNCTION	0.24	0.572	1.098
51	JUNCTION	0.21	1.377	0.213
52	JUNCTION	0.19	1.473	0.027
53	JUNCTION	0.18	1.564	0.000

54	JUNCTION	0.17	1.487	0.000
55	JUNCTION	0.01	0.600	0.760
64	JUNCTION	0.02	1.149	0.411
CB17	JUNCTION	0.11	0.805	0.000
CB19	JUNCTION	0.16	0.803	0.000
CB2	JUNCTION	0.08	0.664	0.000
CBMH8	JUNCTION	0.09	0.700	0.450
DCB15	JUNCTION	0.11	0.813	0.000
DCB26	JUNCTION	0.07	0.477	0.173
DCB27	JUNCTION	0.07	0.510	0.140
RYCB7	JUNCTION	0.09	0.647	0.193
STMH1	JUNCTION	1.79	0.285	1.530
STMH10	JUNCTION	0.22	0.612	1.098
STMH15	JUNCTION	0.25	0.510	1.100
STMH17	JUNCTION	0.20	1.436	0.214
STMH18	JUNCTION	0.19	1.447	0.053
STMH19	JUNCTION	0.14	0.795	0.750
STMH20	JUNCTION	0.11	1.705	0.000
STMH21	JUNCTION	0.02	1.684	0.000
STMH22	JUNCTION	0.14	0.687	0.843
STMH23	JUNCTION	0.08	1.393	0.107
STMH3	JUNCTION	0.04	1.400	0.330
STMH5	JUNCTION	0.03	0.204	1.106
STMH6	JUNCTION	0.02	0.097	1.133
STMH7	JUNCTION	0.16	0.746	0.809

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
A211_Storage	0.000	0	0	0	0.000	4	0 01:10	0.363
RYCB1_Storage	0.000	0	0	0	0.000	0	0 01:10	0.049
RYCB2_Storage	0.000	0	0	0	0.000	0	0 01:10	0.056
RYCB3_Storage	0.000	0	0	0	0.000	0	0 01:11	0.222
RYCB4_Storage	0.000	0	0	0	0.000	1	0 01:11	0.094

RYCB5_Storage	0.000	0	0	0	0.000	0	0
00:00 0.000							
RYCB6_Storage	0.000	0	0	0	0.000	0	0
00:00 0.000							
RYCB7_Storage	0.000	0	0	0	0.000	1	0
01:10 0.089							
RYCB8_Storage	0.000	0	0	0	0.000	0	0
01:10 0.037							
RYCB9_Storage	0.000	0	0	0	0.000	0	0
01:10 0.018							
S12	0.000	0	0	0	0.000	0	0
00:00 0.000							
S13	0.000	0	0	0	0.000	0	0
00:00 0.000							
S19	0.000	11	0	0	0.002	69	0
01:10 0.209							
S20	0.000	2	0	0	0.002	66	0
01:10 0.153							
S21	0.000	2	0	0	0.002	72	0
01:10 0.113							
S22	0.000	0	0	0	0.000	6	0
01:10 0.062							
S23	0.000	0	0	0	0.000	0	0
01:10 0.047							
S26	0.000	0	0	0	0.000	0	0
00:00 0.000							
S27	0.000	0	0	0	0.000	0	0
00:00 0.000							
S30	0.000	0	0	0	0.000	0	0
00:00 0.000							
S31	0.000	0	0	0	0.000	0	0
00:00 0.000							
S32	0.000	0	0	0	0.000	0	0
00:00 0.000							
S7	0.000	0	0	0	0.000	0	0
00:00 0.000							
S8	0.000	0	0	0	0.000	0	0
00:00 0.000							
S9	0.000	0	0	0	0.000	0	0
00:00 0.000							
StreetA_Storage	0.001	1	0	0	0.019	10	0
01:11 0.547							
StreetB_Storage1	0.000	0	0	0	0.001	3	0
01:10 0.359							
StreetB_Storage2	0.001	0	0	0	0.016	7	0
01:10 0.571							
SWM_Pond	0.680	16	0	0	1.152	27	0
01:43 0.361							

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr

O1	99.82	0.267	0.361	2.471
SWM_Pond_Outfall	0.00	0.000	0.000	0.000
U201_Outfall	71.29	0.004	0.005	0.027
U202_Outfall	99.95	0.003	0.026	0.024
System	67.76	0.273	0.368	2.522

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
4	CONDUIT	0.000	0	00:00	0.00	0.00	0.07
C1	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C10	CONDUIT	0.110	0	01:14	1.41	0.43	1.00
C11	CONDUIT	0.110	0	01:14	0.72	0.28	1.00
C12	CONDUIT	0.285	0	01:10	1.79	0.98	1.00
C13	CONDUIT	0.006	0	01:10	0.89	0.02	0.54
C14	CONDUIT	0.107	0	01:12	0.98	0.72	1.00
C15	CONDUIT	0.121	0	01:12	0.82	0.78	1.00
C16	CONDUIT	0.036	0	01:10	1.36	0.27	0.66
C17	CONDUIT	0.125	0	01:11	1.02	0.70	1.00
C18	CONDUIT	0.147	0	01:10	1.12	0.81	1.00
C19	CONDUIT	0.186	0	01:10	1.20	0.66	1.00
C2	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C20	CONDUIT	0.075	0	01:10	1.23	0.33	0.70
C21	CONDUIT	0.147	0	01:10	0.82	0.62	1.00
C22	CONDUIT	0.145	0	01:10	0.73	0.59	1.00
C23	CONDUIT	0.145	0	01:10	0.87	0.63	1.00
C24	CONDUIT	0.314	0	01:09	1.58	0.35	1.00
C25	CONDUIT	0.548	0	01:12	1.53	1.16	1.00
C26	CONDUIT	0.741	0	01:12	2.07	1.59	1.00
C27	CONDUIT	0.040	0	01:10	0.83	0.18	1.00
C28	CONDUIT	0.100	0	01:11	2.03	0.47	1.00
C29	CONDUIT	0.797	0	01:13	2.23	1.50	1.00
C3	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C30	CONDUIT	0.007	0	01:07	0.09	0.08	1.00
C31	CONDUIT	0.127	0	01:08	1.79	1.70	1.00
C32	CONDUIT	0.150	0	01:09	2.13	2.05	1.00
C33	CONDUIT	0.149	0	01:12	2.10	1.33	1.00
C34	CONDUIT	0.149	0	01:12	2.11	1.52	1.00
C35	CONDUIT	0.153	0	01:10	2.16	1.50	1.00
C36	CONDUIT	0.089	0	01:10	1.81	1.36	1.00
C37	CONDUIT	0.236	0	01:10	1.49	1.52	1.00
C38	CONDUIT	0.278	0	01:10	1.74	2.07	1.00
C39	CONDUIT	0.277	0	01:10	1.74	1.80	1.00
C4	CONDUIT	0.016	0	01:10	1.07	0.15	0.41
C40	CONDUIT	0.388	0	01:10	2.44	0.81	1.00
C41	CONDUIT	1.095	0	01:11	1.72	0.85	1.00
C42	CONDUIT	1.090	0	01:11	1.74	1.93	1.00
C43	CONDUIT	1.119	0	01:11	1.87	1.36	1.00
C44	CONDUIT	1.175	0	01:13	2.03	1.97	0.94

C45	CONDUIT	1.549	0	01:13	3.10	2.80	0.77
C46	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C47	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C48	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C49	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C5	CONDUIT	0.041	0	01:14	0.89	0.26	0.57
C50	CONDUIT	0.000	0	00:00	0.00	0.00	0.06
C51	CONDUIT	0.003	0	01:13	0.29	0.02	0.17
C52	CONDUIT	0.007	0	01:13	0.40	0.06	0.37
C53	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C54	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C55	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C56	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C57	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C58	CONDUIT	1.252	0	01:12	2.47	0.57	0.61
C59	CONDUIT	0.028	0	01:14	0.36	0.10	0.76
C6	CONDUIT	0.058	0	01:14	0.96	0.38	0.91
C60	CONDUIT	0.361	0	01:43	1.01	0.74	1.00
C62	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C63	CONDUIT	0.042	0	01:11	2.46	0.40	0.89
C64	CONDUIT	0.025	0	01:11	0.84	0.22	1.00
C65	CONDUIT	0.059	0	01:12	2.46	0.49	1.00
C66	CONDUIT	0.058	0	01:10	2.23	0.25	0.91
C67	CONDUIT	0.040	0	01:10	2.04	0.31	1.00
C68	CONDUIT	0.024	0	01:13	1.17	0.18	1.00
C69	CONDUIT	0.227	0	01:10	4.62	1.02	1.00
C7	CONDUIT	0.111	0	01:11	1.16	0.58	1.00
C70	CONDUIT	0.226	0	01:10	4.61	0.91	1.00
C71	CONDUIT	0.127	0	01:08	4.04	1.28	1.00
C72	CONDUIT	0.070	0	01:09	2.22	0.68	1.00
C73	CONDUIT	0.058	0	01:12	1.18	0.36	1.00
C74	CONDUIT	0.032	0	01:09	1.02	0.30	1.00
C75	CONDUIT	0.049	0	01:10	1.57	0.39	1.00
C76	CONDUIT	0.117	0	01:10	2.57	0.53	1.00
C77	CONDUIT	0.008	0	01:13	0.49	0.06	0.54
C78	CONDUIT	0.190	0	01:11	3.87	0.82	1.00
C79	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C8	CONDUIT	0.055	0	01:10	1.45	0.50	1.00
C80	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C81	CONDUIT	0.000	0	00:00	0.00	0.00	0.23
C82	CONDUIT	0.000	0	00:00	0.00	0.00	0.48
C83	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C84	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C85	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C9	CONDUIT	0.106	0	01:14	1.12	0.52	1.00
1	ORIFICE	0.016	0	01:10			
100	ORIFICE	0.000	0	00:00			
119	ORIFICE	0.094	0	01:11			
12	ORIFICE	0.000	0	00:00			
120	ORIFICE	0.000	0	00:00			
13	ORIFICE	0.000	0	00:00			
14	ORIFICE	0.000	0	00:00			
151	ORIFICE	0.000	0	00:00			
2	ORIFICE	0.361	0	01:43			1.00
3	ORIFICE	0.225	0	01:11			
37	ORIFICE	0.000	0	00:00			
38	ORIFICE	0.056	0	01:10			

39	ORIFICE	0.073	0	01:10	
40	ORIFICE	0.037	0	01:10	
41	ORIFICE	0.006	0	01:10	
42	ORIFICE	0.089	0	01:10	
43	ORIFICE	0.259	0	01:10	
5	ORIFICE	0.000	0	00:00	
6	ORIFICE	0.000	0	00:00	
7	ORIFICE	0.225	0	01:11	
8	ORIFICE	0.003	0	01:11	
80	ORIFICE	0.000	0	00:00	
85	ORIFICE	0.000	0	00:00	
86	ORIFICE	0.000	0	00:00	
87	ORIFICE	0.000	0	00:00	
88	ORIFICE	0.130	0	01:08	
89	ORIFICE	0.072	0	01:09	
90	ORIFICE	0.000	0	00:00	
91	ORIFICE	0.000	0	00:00	
92	ORIFICE	0.000	0	00:00	
94	ORIFICE	0.188	0	01:10	
96	ORIFICE	0.118	0	01:10	
97	ORIFICE	0.014	0	01:10	
98	ORIFICE	0.047	0	01:10	
99	ORIFICE	0.060	0	01:12	
10	WEIR	0.000	0	00:00	0.00
18	WEIR	0.000	0	00:00	0.00
19	WEIR	0.000	0	00:00	0.00
9	WEIR	0.000	0	00:00	0.00
A211_Weir	WEIR	0.105	0	01:11	0.35
RYCB1_Weir	WEIR	0.033	0	01:10	0.16
RYCB2_Weir	WEIR	0.000	0	00:00	0.00
RYCB3_Weir	WEIR	0.149	0	01:10	0.43
RYCB4_Weir	WEIR	0.000	0	00:00	0.00
RYCB5_Weir	WEIR	0.000	0	00:00	0.00
RYCB6_Weir	WEIR	0.000	0	00:00	0.00
RYCB7_Weir	WEIR	0.000	0	00:00	0.00
RYCB8_Weir	WEIR	0.000	0	00:00	0.00
RYCB9_Weir	WEIR	0.012	0	01:10	0.08
StreetA_Weir	WEIR	0.094	0	01:11	0.32
StreetB_Weir1	WEIR	0.241	0	01:10	0.60
StreetB_Weir2	WEIR	0.383	0	01:10	0.81
SWM_Pond_Weir	WEIR	0.000	0	00:00	0.00
W17	WEIR	0.155	0	01:10	1.40
W18	WEIR	0.113	0	01:10	1.13
W19	WEIR	0.063	0	01:10	0.77
W20	WEIR	0.047	0	01:10	0.63
W21	WEIR	0.000	0	00:00	0.00
W27	WEIR	0.000	0	00:00	0.00
W30	WEIR	0.000	0	00:00	0.00
W31	WEIR	0.000	0	00:00	0.00
W6	WEIR	0.000	0	00:00	0.00
W8	WEIR	0.000	0	00:00	0.00
W9	WEIR	0.000	0	00:00	0.00

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Flow Classification Summary
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Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
4	1.00	0.30	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C10	1.00	0.00	0.00	0.00	0.11	0.89	0.00	0.00	0.37	0.00
C11	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.87	0.00
C12	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.91	0.00
C13	1.00	0.00	0.00	0.00	0.08	0.91	0.00	0.00	0.97	0.00
C14	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.06	0.00
C15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.93	0.00
C16	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.95	0.00
C17	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.21	0.00
C18	1.00	0.00	0.00	0.00	0.28	0.71	0.00	0.00	0.01	0.00
C19	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.91	0.00
C2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C20	1.00	0.00	0.00	0.00	0.77	0.23	0.00	0.00	0.94	0.00
C21	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.03	0.00
C22	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.17	0.00
C23	1.00	0.00	0.01	0.00	0.63	0.36	0.00	0.00	0.19	0.00
C24	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.82	0.00
C25	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.11	0.00
C26	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.00
C27	1.00	0.00	0.85	0.00	0.15	0.00	0.00	0.00	0.57	0.00
C28	1.00	0.00	0.83	0.00	0.16	0.00	0.00	0.00	0.58	0.00
C29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.43	0.00
C3	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C30	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.00	0.

C31	1.00	0.00	0.00	0.00	0.78	0.22	0.00	0.00	0.58
0.00									
C32	1.00	0.00	0.00	0.00	0.09	0.91	0.00	0.00	0.00
0.00									
C33	1.00	0.00	0.00	0.00	0.08	0.91	0.00	0.00	0.73
0.00									
C34	1.00	0.01	0.00	0.00	0.09	0.90	0.00	0.00	0.44
0.00									
C35	1.00	0.00	0.01	0.00	0.62	0.37	0.00	0.00	0.88
0.00									
C36	1.00	0.00	0.00	0.00	0.98	0.01	0.00	0.00	0.88
0.00									
C37	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.36
0.00									
C38	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.03
0.00									
C39	1.00	0.00	0.00	0.00	0.95	0.04	0.00	0.00	0.05
0.00									
C4	1.00	0.00	0.00	0.00	0.02	0.98	0.00	0.00	0.83
0.00									
C40	1.00	0.00	0.00	0.00	0.93	0.07	0.00	0.00	0.18
0.00									
C41	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.13
0.00									
C42	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C43	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.09
0.00									
C44	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.03
0.00									
C45	1.00	0.00	0.00	0.00	0.34	0.66	0.00	0.00	0.03
0.00									
C46	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C47	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C48	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C49	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C5	1.00	0.00	0.00	0.00	0.14	0.86	0.00	0.00	0.73
0.00									
C50	1.00	0.30	0.70	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C51	1.00	0.29	0.01	0.00	0.70	0.00	0.00	0.00	0.59
0.00									
C52	1.00	0.29	0.01	0.00	0.71	0.00	0.00	0.00	0.08
0.00									
C53	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C54	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C55	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C56	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C57	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C58	1.00	0.00	0.00	0.00	0.97	0.03	0.00	0.00	0.94
0.00									

C59	1.00	0.00	0.63	0.00	0.37	0.00	0.00	0.00	0.55
0.00									
C6	1.00	0.01	0.00	0.00	0.09	0.91	0.00	0.00	0.02
0.00									
C60	1.00	0.00	0.00	0.00	0.95	0.05	0.00	0.00	0.00
0.00									
C62	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C63	1.00	0.01	0.82	0.00	0.17	0.00	0.00	0.00	0.60
0.00									
C64	1.00	0.00	0.82	0.00	0.17	0.00	0.00	0.00	0.59
0.00									
C65	1.00	0.00	0.86	0.00	0.13	0.00	0.00	0.00	0.60
0.00									
C66	1.00	0.00	0.91	0.00	0.09	0.00	0.00	0.00	0.60
0.00									
C67	1.00	0.01	0.85	0.00	0.14	0.00	0.00	0.00	0.60
0.00									
C68	1.00	0.00	0.84	0.00	0.15	0.00	0.00	0.00	0.59
0.00									
C69	1.00	0.00	0.00	0.00	0.04	0.96	0.00	0.00	0.91
0.00									
C7	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.92
0.00									
C70	1.00	0.00	0.00	0.00	0.70	0.29	0.00	0.00	0.91
0.00									
C71	1.00	0.00	0.00	0.00	0.07	0.93	0.00	0.00	0.90
0.00									
C72	1.00	0.00	0.76	0.00	0.24	0.00	0.00	0.00	0.57
0.00									
C73	1.00	0.00	0.79	0.00	0.20	0.00	0.00	0.00	0.57
0.00									
C74	1.00	0.01	0.77	0.00	0.22	0.00	0.00	0.00	0.57
0.00									
C75	1.00	0.00	0.84	0.00	0.15	0.00	0.00	0.00	0.59
0.00									
C76	1.00	0.00	0.00	0.00	0.68	0.32	0.00	0.00	0.91
0.00									
C77	1.00	0.00	0.88	0.00	0.11	0.00	0.00	0.00	0.59
0.00									
C78	1.00	0.00	0.00	0.00	0.77	0.23	0.00	0.00	0.90
0.00									
C79	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C8	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.91
0.00									
C80	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C81	1.00	0.29	0.71	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C82	1.00	0.63	0.37	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C83	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C84	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C85	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C9	1.00	0.00	0.00	0.00	0.22	0.78	0.00	0.00	0.21
0.00									

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Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C10	0.11	0.11	0.14	0.01	0.01
C11	0.14	0.14	0.24	0.01	0.01
C12	0.11	0.11	0.24	0.01	0.01
C13	0.01	0.01	0.05	0.01	0.01
C14	0.01	0.02	0.02	0.01	0.01
C15	0.02	0.02	0.04	0.01	0.01
C16	0.01	0.01	0.08	0.01	0.01
C17	0.04	0.04	0.07	0.01	0.01
C18	0.07	0.07	0.10	0.01	0.01
C19	0.10	0.10	0.13	0.01	0.01
C20	0.01	0.01	0.14	0.01	0.01
C21	0.11	0.11	0.13	0.01	0.01
C22	0.13	0.13	0.14	0.01	0.01
C23	0.14	0.14	0.16	0.01	0.01
C24	0.16	0.16	0.20	0.01	0.01
C25	0.16	0.16	0.16	0.07	0.07
C26	0.15	0.16	0.15	0.20	0.15
C27	0.06	0.06	1.84	0.01	0.01
C28	0.07	0.07	1.87	0.01	0.01
C29	0.15	0.15	0.15	0.16	0.14
C30	0.19	0.19	0.19	0.01	0.01
C31	0.18	0.19	0.18	0.11	0.08
C32	0.17	0.18	0.17	0.22	0.17
C33	0.17	0.17	0.20	0.13	0.12
C34	0.20	0.20	0.21	0.15	0.15
C35	0.21	0.21	0.31	0.14	0.14
C36	0.16	0.16	0.37	0.04	0.04
C37	0.22	0.22	0.24	0.12	0.12
C38	0.24	0.24	0.25	0.15	0.14
C39	0.25	0.25	0.27	0.12	0.12
C40	0.26	0.27	0.31	0.01	0.01
C41	0.02	0.02	0.03	0.01	0.01
C42	0.01	0.03	0.01	0.22	0.01
C43	0.01	0.01	0.01	0.11	0.01
C44	0.01	0.01	0.01	0.21	0.01
C45	0.01	0.01	0.01	0.25	0.01
C59	0.01	0.01	0.25	0.01	0.01
C6	0.01	0.01	0.06	0.01	0.01
C60	1.78	1.78	1.79	0.01	0.01
C63	0.01	0.01	0.08	0.01	0.01
C64	0.03	0.03	0.17	0.01	0.01
C65	0.01	0.01	0.07	0.01	0.01
C66	0.01	0.01	0.11	0.01	0.01
C67	0.01	0.01	0.14	0.01	0.01
C68	0.01	0.01	0.19	0.01	0.01
C69	0.11	0.11	0.26	0.01	0.02

C7	0.06	0.06	0.10	0.01	0.01
C70	0.10	0.10	0.98	0.01	0.01
C71	0.18	0.18	0.29	0.04	0.04
C72	0.14	0.14	0.25	0.01	0.01
C73	0.14	0.14	0.19	0.01	0.01
C74	0.12	0.12	0.22	0.01	0.01
C75	0.03	0.03	1.84	0.01	0.01
C76	0.01	0.01	0.71	0.01	0.01
C77	0.01	0.01	1.77	0.01	0.01
C78	0.05	0.05	1.23	0.01	0.01
C8	0.01	0.01	0.12	0.01	0.01
C9	0.08	0.08	0.11	0.01	0.01

Analysis begun on: Wed Jul 20 15:31:58 2022
Analysis ended on: Wed Jul 20 15:31:59 2022
Total elapsed time: 00:00:01

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

SBM-18-0530 Kettle Creek

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Element Count
****
Number of rain gages 1
Number of subcatchments ... 29
Number of nodes 118
Number of links 149
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
St.ThomasRainGage	St.Thomas25Yr	INTENSITY	1 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A201	0.43	95.56	0.00	30.0000	St.ThomasRainGage	A202
A202	0.22	24.44	45.71	2.0000	St.ThomasRainGage	RYCB1_Storage
A203	0.51	87.93	0.00	30.0000	St.ThomasRainGage	A204
A204	0.08	42.11	45.71	2.0000	St.ThomasRainGage	RYCB2_Storage
A205	0.05	100.00	45.71	2.0000	St.ThomasRainGage	RYCB9_Storage
A206	0.12	7.50	25.00	30.0000	St.ThomasRainGage	A207
A207	0.03	60.00	45.71	2.0000	St.ThomasRainGage	RYCB8_Storage
A208	1.52	119.68	25.00	30.0000	St.ThomasRainGage	A209
A209	0.04	80.00	45.71	2.0000	St.ThomasRainGage	RYCB3_Storage
A210	1.36	143.16	25.00	30.0000	St.ThomasRainGage	A211
A211	0.19	63.33	45.71	2.0000	St.ThomasRainGage	A211_Storage
A212	2.46	144.71	45.71	2.0000	St.ThomasRainGage	StreetA_Storage

A213	0.55	78.57	45.71	2.0000	St.ThomasRainGage StreetB_Storage1
A214	0.99	79.20	45.71	2.0000	St.ThomasRainGage S19
A215	1.09	82.58	46.70	2.0000	St.ThomasRainGage StreetB_Storage1
A216	0.25	100.00	64.29	2.0000	St.ThomasRainGage RYCB7_Storage
A217	1.85	97.37	48.65	2.0000	St.ThomasRainGage StreetB_Storage2
A218	0.54	40.00	45.71	2.0000	St.ThomasRainGage SWM_Pond
A219	0.06	75.00	0.00	2.0000	St.ThomasRainGage SWM_Pond
A220	0.58	193.33	21.43	8.0000	St.ThomasRainGage SWM_Pond
EXT201	0.11	137.50	71.43	2.0000	St.ThomasRainGage A201
EXT202	0.12	150.00	71.43	2.0000	St.ThomasRainGage A203
EXT203	0.95	73.08	0.00	30.0000	St.ThomasRainGage A205
EXT204	0.12	150.00	71.43	2.0000	St.ThomasRainGage EXT205
EXT205	1.26	78.75	0.00	30.0000	St.ThomasRainGage A206
EXT206	0.20	250.00	71.43	2.0000	St.ThomasRainGage A208
EXT207	0.30	375.00	71.43	2.0000	St.ThomasRainGage A210
U201	0.44	44.00	0.00	3.0000	St.ThomasRainGage U201_Outfall
U202	0.08	47.06	45.71	6.0000	St.ThomasRainGage U202_Outfall

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
0	JUNCTION	178.14	1.99	0.0	
4	JUNCTION	178.17	1.87	0.0	
41	JUNCTION	179.05	1.85	0.0	
42	JUNCTION	179.35	1.75	0.0	
43	JUNCTION	178.68	1.97	0.0	
44	JUNCTION	178.46	2.06	0.0	
45	JUNCTION	178.58	2.15	0.0	
46	JUNCTION	178.92	2.15	0.0	
47	JUNCTION	178.80	2.11	0.0	
48	JUNCTION	178.28	2.20	0.0	
49	JUNCTION	178.00	2.07	0.0	
50	JUNCTION	178.07	2.12	0.0	
51	JUNCTION	178.59	1.89	0.0	
52	JUNCTION	179.24	1.80	0.0	
53	JUNCTION	179.06	1.83	0.0	
54	JUNCTION	178.87	1.71	0.0	
55	JUNCTION	177.86	2.26	0.0	

56	JUNCTION	177.79	2.12	0.0
57	JUNCTION	179.17	1.97	0.0
58	JUNCTION	179.80	2.40	0.0
59	JUNCTION	183.47	1.73	0.0
60	JUNCTION	178.27	1.90	0.0
61	JUNCTION	178.42	1.90	0.0
63	JUNCTION	178.72	1.76	0.0
64	JUNCTION	179.12	2.01	0.0
CB1	JUNCTION	183.90	1.25	0.0
CB12	JUNCTION	179.02	1.25	0.0
CB14	JUNCTION	179.22	1.25	0.0
CB17	JUNCTION	179.59	1.25	0.0
CB19	JUNCTION	179.74	1.25	0.0
CB2	JUNCTION	179.18	1.25	0.0
CB21	JUNCTION	179.77	1.25	0.0
CB23	JUNCTION	179.61	1.25	0.0
CB25	JUNCTION	179.41	1.25	0.0
CB28	JUNCTION	179.35	1.25	0.0
CB3	JUNCTION	180.90	1.25	0.0
CB31	JUNCTION	179.60	1.25	0.0
CB33	JUNCTION	179.80	1.25	0.0
CB39	JUNCTION	178.83	1.25	0.0
CB42	JUNCTION	178.74	1.25	0.0
CB43	JUNCTION	179.84	1.25	0.0
CB44	JUNCTION	179.86	1.25	0.0
CB5	JUNCTION	178.89	1.25	0.0
CB7	JUNCTION	178.88	1.25	0.0
CBMH8	JUNCTION	178.82	1.75	0.0
DCB15	JUNCTION	179.28	1.25	0.0
DCB26	JUNCTION	179.22	1.25	0.0
DCB27	JUNCTION	179.22	1.25	0.0
DCB37	JUNCTION	178.61	1.25	0.0
DCB40	JUNCTION	178.76	1.25	0.0
MDMH1	JUNCTION	180.92	5.84	0.0
MDMH2	JUNCTION	179.76	5.54	0.0
MDMH3	JUNCTION	177.75	1.86	0.0
OGS	JUNCTION	177.78	2.22	0.0
RYCB1	JUNCTION	180.03	1.60	0.0
RYCB2	JUNCTION	179.43	1.65	0.0
RYCB3	JUNCTION	179.67	1.86	0.0
RYCB4	JUNCTION	178.86	1.25	0.0
RYCB5	JUNCTION	178.85	1.26	0.0
RYCB6	JUNCTION	178.50	1.55	0.0
RYCB7	JUNCTION	178.51	1.44	0.0
RYCB8	JUNCTION	180.32	2.12	0.0
RYCB9	JUNCTION	181.81	1.55	0.0
STMH1	JUNCTION	176.97	2.49	0.0
STMH10	JUNCTION	178.12	2.16	0.0
STMH11	JUNCTION	178.32	1.89	0.0
STMH12	JUNCTION	178.47	1.91	0.0
STMH13	JUNCTION	178.65	1.82	0.0
STMH14	JUNCTION	178.81	1.80	0.0
STMH15	JUNCTION	178.03	2.06	0.0
STMH16	JUNCTION	179.48	1.88	0.0
STMH17	JUNCTION	178.70	1.95	0.0
STMH18	JUNCTION	179.26	1.80	0.0
STMH19	JUNCTION	178.52	2.07	0.0

STMH2	JUNCTION	183.83	1.75	0.0
STMH20	JUNCTION	178.66	2.17	0.0
STMH21	JUNCTION	179.16	2.07	0.0
STMH22	JUNCTION	178.59	1.98	0.0
STMH23	JUNCTION	178.83	1.95	0.0
STMH3	JUNCTION	179.04	2.18	0.0
STMH4	JUNCTION	177.81	2.17	0.0
STMH5	JUNCTION	177.89	2.21	0.0
STMH6	JUNCTION	177.94	2.13	0.0
STMH7	JUNCTION	178.30	2.23	0.0
STMH9	JUNCTION	181.06	2.61	0.0
O1	OUTFALL	176.95	0.00	0.0
SWM_Pond_Outfall	OUTFALL	178.90	0.00	0.0
U201_Outfall	OUTFALL	177.71	0.68	0.0
U202_Outfall	OUTFALL	183.25	0.00	0.0
A211_Storage	STORAGE	180.57	0.45	0.0
RYCB1_Storage	STORAGE	181.63	0.45	0.0
RYCB2_Storage	STORAGE	181.08	0.38	0.0
RYCB3_Storage	STORAGE	181.53	0.45	0.0
RYCB4_Storage	STORAGE	180.11	0.45	0.0
RYCB5_Storage	STORAGE	180.11	0.45	0.0
RYCB6_Storage	STORAGE	180.05	0.27	0.0
RYCB7_Storage	STORAGE	179.95	0.39	0.0
RYCB8_Storage	STORAGE	182.44	0.45	0.0
RYCB9_Storage	STORAGE	183.36	0.13	0.0
S12	STORAGE	181.05	0.30	0.0
S13	STORAGE	180.85	0.30	0.0
S19	STORAGE	180.99	0.30	0.0
S20	STORAGE	180.84	0.30	0.0
S21	STORAGE	180.53	0.30	0.0
S22	STORAGE	180.43	0.29	0.0
S23	STORAGE	180.14	0.29	0.0
S26	STORAGE	180.47	0.30	0.0
S27	STORAGE	180.27	0.30	0.0
S30	STORAGE	185.15	0.30	0.0
S31	STORAGE	182.15	0.30	0.0
S32	STORAGE	181.09	0.30	0.0
S7	STORAGE	181.11	0.30	0.0
S8	STORAGE	181.02	0.30	0.0
S9	STORAGE	180.86	0.30	0.0
StreetA_Storage	STORAGE	180.47	0.30	0.0
StreetB_Storage1	STORAGE	180.01	0.29	0.0
StreetB_Storage2	STORAGE	179.86	0.29	0.0
SWM_Pond	STORAGE	177.02	1.89	0.0

****
Link Summary
****

Name	From Node	To Node	Type	Length	% Slope	Roughness
4	RYCB6	STMH11	CONDUIT	22.4	0.8036	0.0130
C1	MDMH1	MDMH2	CONDUIT	13.7	8.4977	0.0130

C10	43	STMH22	CONDUIT	11.1	0.8116	0.0130
C11	STMH22	STMH7	CONDUIT	15.2	1.9082	0.0130
C12	CBMH8	STMH7	CONDUIT	50.5	1.0298	0.0130
C13	RYCB9	STMH21	CONDUIT	43.8	6.0613	0.0130
C14	STMH21	64	CONDUIT	14.9	0.2676	0.0130
C15	64	STMH3	CONDUIT	27.2	0.2947	0.0130
C16	RYCB8	STMH3	CONDUIT	65.0	1.9696	0.0130
C17	STMH3	46	CONDUIT	30.6	0.3919	0.0130
C18	46	47	CONDUIT	29.7	0.4040	0.0130
C19	47	STMH20	CONDUIT	14.4	0.9736	0.0130
C2	MDMH2	MDMH3	CONDUIT	172.8	1.1633	0.0130
C20	RYCB3	STMH20	CONDUIT	59.7	1.6920	0.0130
C21	STMH20	45	CONDUIT	26.4	0.3029	0.0130
C22	45	STMH19	CONDUIT	18.5	0.3245	0.0130
C23	STMH19	44	CONDUIT	21.1	0.2848	0.0130
C24	44	STMH7	CONDUIT	3.6	4.4120	0.0130
C25	STMH7	48	CONDUIT	6.3	0.3180	0.0130
C26	48	0	CONDUIT	45.5	0.3076	0.0130
C27	RYCB4	0	CONDUIT	5.5	13.2045	0.0130
C28	RYCB5	0	CONDUIT	5.5	13.0180	0.0130
C29	0	STMH6	CONDUIT	50.4	0.3968	0.0130
C3	MDMH3	U201_Outfall	CONDUIT	6.0	0.6667	0.0130
C30	STMH18	52	CONDUIT	2.8	0.7169	0.0130
C31	52	53	CONDUIT	30.5	0.5909	0.0130
C32	53	54	CONDUIT	32.9	0.5772	0.0130
C33	54	STMH17	CONDUIT	12.7	1.3355	0.0130
C34	STMH17	51	CONDUIT	10.7	1.0243	0.0130
C35	51	STMH10	CONDUIT	42.3	1.1122	0.0130
C36	RYCB7	STMH10	CONDUIT	32.5	1.2001	0.0130
C37	STMH10	50	CONDUIT	16.8	0.2971	0.0130

C38		50	STMH15	CONDUIT	18.1
0.2214	0.0130				
C39		STMH15	49	CONDUIT	10.3
0.2921	0.0130				
C4		RYCB1	STMH16	CONDUIT	44.9
1.2250	0.0130				
C40		49	STMH6	CONDUIT	2.1
2.8180	0.0130				
C41		STMH6	STMH5	CONDUIT	9.8
0.5102	0.0130				
C42		STMH5	55	CONDUIT	30.7
0.0978	0.0130				
C43		55	STMH4	CONDUIT	24.2
0.2063	0.0130				
C44		STMH4	56	CONDUIT	18.5
0.1082	0.0130				
C45		56	OGS	CONDUIT	10.7
0.0933	0.0130				
C46		STMH14	63	CONDUIT	15.1
0.5956	0.0130				
C47		63	STMH13	CONDUIT	8.2
0.8547	0.0130				
C48		STMH13	STMH12	CONDUIT	18.2
0.9891	0.0130				
C49		STMH12	61	CONDUIT	11.4
0.4371	0.0130				
C5		STMH16	42	CONDUIT	16.8
0.7729	0.0130				
C50		61	STMH11	CONDUIT	22.0
0.4546	0.0130				
C51		STMH11	60	CONDUIT	10.4
0.4794	0.0130				
C52		60	4	CONDUIT	23.5
0.4248	0.0130				
C53		STMH2	59	CONDUIT	7.5
4.8249	0.0130				
C54		59	STMH9	CONDUIT	32.3
7.4752	0.0130				
C55		STMH9	58	CONDUIT	45.7
2.7594	0.0130				
C56		58	57	CONDUIT	23.0
2.7437	0.0130				
C57		57	OGS	CONDUIT	48.8
2.8524	0.0130				
C58		OGS	SWM_Pond	CONDUIT	117.7
0.6457	0.0130				
C59		4	OGS	CONDUIT	14.8
2.6307	0.0130				
C6		42	41	CONDUIT	40.5
0.7406	0.0130				
C60		SWM_Pond	STMH1	CONDUIT	14.9
0.3356	0.0130				
C62		CB33	42	CONDUIT	5.5
8.2093	0.0130				
C63		CB31	41	CONDUIT	5.5
10.0504	0.0130				
C64		CB28	43	CONDUIT	5.5
12.2732	0.0130				
C65		CB44	64	CONDUIT	5.5
13.5780	0.0130				

C66		CB21	46	CONDUIT	5.5
15.6425	0.0130				
C67		CB23	47	CONDUIT	5.5
14.8896	0.0130				
C68		CB25	45	CONDUIT	5.5
15.2657	0.0130				
C69		DCB27	44	CONDUIT	5.5
13.9520	0.0130				
C7		41	STMH23	CONDUIT	18.5
1.1912	0.0130				
C70		DCB26	48	CONDUIT	5.5
17.3461	0.0130				
C71		CB19	52	CONDUIT	5.5
9.1287	0.0130				
C72		CB17	53	CONDUIT	5.5
9.6814	0.0130				
C73		DCB15	54	CONDUIT	5.5
7.4753	0.0130				
C74		CB2	51	CONDUIT	5.5
10.7895	0.0130				
C75		CB5	50	CONDUIT	5.5
15.0776	0.0130				
C76		DCB40	49	CONDUIT	5.5
13.9520	0.0130				
C77		CB39	55	CONDUIT	5.5
17.9172	0.0130				
C78		DCB37	56	CONDUIT	5.5
15.0776	0.0130				
C79		CB14	63	CONDUIT	5.5
9.1287	0.0130				
C8		RYCB2	STMH23	CONDUIT	46.0
1.3045	0.0130				
C80		CB12	61	CONDUIT	5.5
10.9746	0.0130				
C81		CB7	60	CONDUIT	5.5
11.1598	0.0130				
C82		CB42	4	CONDUIT	5.5
10.4197	0.0130				
C83		CB1	59	CONDUIT	5.5
7.8422	0.0130				
C84		CB3	58	CONDUIT	5.5
20.4124	0.0130				
C85		CB43	57	CONDUIT	5.5
12.2732	0.0130				
C9		STMH23	43	CONDUIT	29.6
0.5066	0.0130				
1		RYCB1_Storage	RYCB1	ORIFICE	
100		S27	CB12	ORIFICE	
119		RYCB4_Storage	RYCB5	ORIFICE	
12		StreetB_Storage2	CB42	ORIFICE	
120		RYCB5_Storage	RYCB4	ORIFICE	
13		StreetB_Storage2	CB39	ORIFICE	
14		StreetB_Storage2	CB7	ORIFICE	
151		S26	CB14	ORIFICE	
2		STMH1	O1	ORIFICE	
3		StreetA_Storage	DCB27	ORIFICE	
37		S12	CB33	ORIFICE	
38		RYCB2_Storage	RYCB2	ORIFICE	
39		RYCB3_Storage	RYCB3	ORIFICE	

40	RYCB8_Storage	RYCB8	ORIFICE
41	RYCB9_Storage	RYCB9	ORIFICE
42	RYCB7_Storage	RYCB7	ORIFICE
43	A211_Storage	CBMH8	ORIFICE
5	RYCB6_Storage	RYCB6	ORIFICE
6	StreetA_Storage	CB25	ORIFICE
7	StreetA_Storage	DCB26	ORIFICE
8	StreetA_Storage	CB28	ORIFICE
80	S13	CB31	ORIFICE
85	S9	CB23	ORIFICE
86	S8	CB21	ORIFICE
87	S7	CB44	ORIFICE
88	S19	CB19	ORIFICE
89	S20	CB17	ORIFICE
90	S30	CB1	ORIFICE
91	S31	CB3	ORIFICE
92	S32	CB43	ORIFICE
94	StreetB_Storage2	DCB37	ORIFICE
96	StreetB_Storage1	DCB40	ORIFICE
97	S22	CB2	ORIFICE
98	S23	CB5	ORIFICE
99	S21	DCB15	ORIFICE
10	S13	StreetA_Storage	WEIR
18	S27	StreetB_Storage2	WEIR
19	S32	StreetB_Storage2	WEIR
9	S9	StreetA_Storage	WEIR
A211_Weir	A211_Storage	StreetA_Storage	WEIR
RYCB1_Weir	RYCB1_Storage	RYCB2_Storage	WEIR
RYCB2_Weir	RYCB2_Storage	A211_Storage	WEIR
RYCB3_Weir	RYCB3_Storage	A211_Storage	WEIR
RYCB4_Weir	RYCB4_Storage	StreetB_Storage1	WEIR
RYCB5_Weir	RYCB5_Storage	StreetB_Storage1	WEIR
RYCB6_Weir	RYCB6_Storage	StreetB_Storage2	WEIR
RYCB7_Weir	RYCB7_Storage	RYCB6_Storage	WEIR
RYCB8_Weir	RYCB8_Storage	RYCB3_Storage	WEIR
RYCB9_Weir	RYCB9_Storage	RYCB8_Storage	WEIR
StreetA_Weir	StreetA_Storage	RYCB4_Storage	WEIR
StreetB_Weir1	StreetB_Storage1	StreetB_Storage2	WEIR
StreetB_Weir2	StreetB_Storage2	SWM_Pond	WEIR
SWM_Pond_Weir	SWM_Pond	SWM_Pond_Outfall	WEIR
W17	S19	S20	WEIR
W18	S20	S21	WEIR
W19	S21	S22	WEIR
W20	S22	S23	WEIR
W21	S23	StreetB_Storage1	WEIR
W27	S26	S27	WEIR
W30	S30	S31	WEIR
W31	S31	S32	WEIR
W6	S12	S13	WEIR
W8	S7	S8	WEIR
W9	S8	S9	WEIR

****
Cross Section Summary
****

		Full	Full	Hyd.	Max.	No. of

Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
4	CIRCULAR	0.30	0.07	0.07	0.30	1	0.09
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.83
C10	CIRCULAR	0.45	0.16	0.11	0.45	1	0.26
C11	CIRCULAR	0.45	0.16	0.11	0.45	1	0.39
C12	CIRCULAR	0.45	0.16	0.11	0.45	1	0.29
C13	CIRCULAR	0.30	0.07	0.07	0.30	1	0.24
C14	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C15	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C16	CIRCULAR	0.30	0.07	0.07	0.30	1	0.14
C17	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C18	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C19	CIRCULAR	0.45	0.16	0.11	0.45	1	0.28
C2	CIRCULAR	0.60	0.28	0.15	0.60	1	0.66
C20	CIRCULAR	0.38	0.11	0.09	0.38	1	0.23
C21	CIRCULAR	0.53	0.22	0.13	0.53	1	0.24
C22	CIRCULAR	0.53	0.22	0.13	0.53	1	0.25
C23	CIRCULAR	0.53	0.22	0.13	0.53	1	0.23
C24	CIRCULAR	0.53	0.22	0.13	0.53	1	0.90
C25	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C26	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C27	CIRCULAR	0.25	0.05	0.06	0.25	1	0.22
C28	CIRCULAR	0.25	0.05	0.06	0.25	1	0.21
C29	CIRCULAR	0.68	0.36	0.17	0.68	1	0.53
C3	CIRCULAR	0.68	0.36	0.17	0.68	1	0.69
C30	CIRCULAR	0.30	0.07	0.07	0.30	1	0.08
C31	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C32	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C33	CIRCULAR	0.30	0.07	0.07	0.30	1	0.11

C34	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C35	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C36	CIRCULAR	0.25	0.05	0.06	0.25	1
0.07						
C37	CIRCULAR	0.45	0.16	0.11	0.45	1
0.16						
C38	CIRCULAR	0.45	0.16	0.11	0.45	1
0.13						
C39	CIRCULAR	0.45	0.16	0.11	0.45	1
0.15						
C4	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C40	CIRCULAR	0.45	0.16	0.11	0.45	1
0.48						
C41	CIRCULAR	0.90	0.64	0.23	0.90	1
1.29						
C42	CIRCULAR	0.90	0.64	0.23	0.90	1
0.57						
C43	CIRCULAR	0.90	0.64	0.23	0.90	1
0.82						
C44	CIRCULAR	0.90	0.64	0.23	0.90	1
0.60						
C45	CIRCULAR	0.90	0.64	0.23	0.90	1
0.55						
C46	CIRCULAR	0.30	0.07	0.07	0.30	1
0.07						
C47	CIRCULAR	0.30	0.07	0.07	0.30	1
0.09						
C48	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C49	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C5	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C50	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C51	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C52	CIRCULAR	0.38	0.11	0.09	0.38	1
0.11						
C53	CIRCULAR	0.25	0.05	0.06	0.25	1
0.13						
C54	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C55	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C56	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C57	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C58	CIRCULAR	1.05	0.87	0.26	1.05	1
2.19						
C59	CIRCULAR	0.38	0.11	0.09	0.38	1
0.28						
C6	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C60	CIRCULAR	0.68	0.36	0.17	0.68	1
0.49						

C62	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C63	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C64	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C65	CIRCULAR	0.20	0.03	0.05	0.20	1
0.12						
C66	CIRCULAR	0.25	0.05	0.06	0.25	1
0.24						
C67	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C68	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C69	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C7	CIRCULAR	0.38	0.11	0.09	0.38	1
0.19						
C70	CIRCULAR	0.25	0.05	0.06	0.25	1
0.25						
C71	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C72	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C73	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C74	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C75	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C76	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C77	CIRCULAR	0.20	0.03	0.05	0.20	1
0.14						
C78	CIRCULAR	0.25	0.05	0.06	0.25	1
0.23						
C79	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C8	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C80	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C81	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C82	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C83	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C84	CIRCULAR	0.20	0.03	0.05	0.20	1
0.15						
C85	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C9	CIRCULAR	0.45	0.16	0.11	0.45	1
0.20						

****

NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,

not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 12/11/2020 00:00:00
Ending Date 12/11/2020 03:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:01:00
Routing Time Step ..... 30.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 1
Head Tolerance ..... 0.001500 m

**********	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
**********	---	---
Total Precipitation	0.820	49.695
Evaporation Loss	0.000	0.000
Infiltration Loss	0.295	17.898
Surface Runoff	0.411	24.895
Final Storage	0.114	6.933
Continuity Error (%)	-0.064	

**********	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
**********	---	---
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.410	4.104
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.289	2.891
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.121	1.215
Continuity Error (%)	-0.049	

```
  ************************
  Highest Continuity Errors
  ************************
  Node S9 (-234.43%)
  Node S8 (23.61%)
  Node 61 (9.81%)
  Node CB44 (-8.75%)
  Node CB25 (-5.04%)


  ***************************
  Time-Step Critical Elements
  ***************************
  Link C40 (84.21%)
  Link C24 (5.79%)
  Link C70 (1.74%)
  Link C78 (1.72%)
  Link C69 (1.59%)


  *******************************
  Highest Flow Instability Indexes
  *******************************
  Link C40 (14)
  Link C39 (11)
  Link C41 (10)
  Link C45 (9)
  Link 88 (8)


  ************************
  Routing Time Step Summary
  ************************
  Minimum Time Step           :     0.42 sec
  Average Time Step           :     0.89 sec
  Maximum Time Step           :    30.00 sec
  Percent in Steady State     :    -0.00
  Average Iterations per Step :     2.46
  Percent Not Converging      :     4.80
  Time Step Frequencies       :
     30.000 - 13.228 sec      :     0.04 %
     13.228 -  5.833 sec      :     0.01 %
      5.833 -  2.572 sec      :     0.44 %
      2.572 -  1.134 sec      :    16.33 %
      1.134 -  0.500 sec      :    83.18 %


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ---------------------------------------------------------------------------------------
-----------------------------------------
                             Total      Total      Total      Total     Imperv
Perv      Total       Total     Peak  Runoff
```

Subcatchment	Precip mm	Runon mm	Evap mm	Infil mm	Runoff mm	Runoff mm	Runoff 10^6 ltr	Runoff CMS	Coeff
A201	49.69	11.76	0.00	34.12	0.00	18.03	18.03	0.08	0.03	0.293
A202	49.69	35.15	0.00	9.77	37.74	30.89	68.63	0.15	0.06	0.809
A203	49.69	10.82	0.00	34.12	0.00	16.75	16.75	0.09	0.03	0.277
A204	49.69	106.46	0.00	9.77	70.51	70.94	141.45	0.11	0.04	0.906
A205	49.69	95.92	0.00	9.77	65.81	66.00	131.81	0.07	0.02	0.905
A206	49.69	88.37	0.00	25.59	34.00	61.02	95.02	0.11	0.02	0.688
A207	49.69	377.49	0.00	9.77	194.50	217.81	412.31	0.12	0.03	0.965
A208	49.69	6.05	0.00	25.59	13.53	8.45	21.98	0.33	0.25	0.394
A209	49.69	833.18	0.00	9.77	402.81	465.64	868.46	0.35	0.27	0.984
A210	49.69	10.14	0.00	25.59	14.56	11.81	26.37	0.36	0.24	0.441
A211	49.69	188.34	0.00	9.77	107.85	114.45	222.29	0.42	0.27	0.934
A212	49.69	0.00	0.00	9.77	21.74	12.15	33.89	0.83	0.61	0.682
A213	49.69	0.00	0.00	9.77	21.88	13.66	35.54	0.20	0.16	0.715
A214	49.69	0.00	0.00	9.77	21.80	12.80	34.60	0.34	0.26	0.696
A215	49.69	0.00	0.00	9.59	22.26	12.50	34.76	0.38	0.29	0.699
A216	49.69	0.00	0.00	6.43	30.86	9.62	40.48	0.10	0.11	0.815
A217	49.69	0.00	0.00	9.24	23.10	11.36	34.46	0.64	0.46	0.693
A218	49.69	0.00	0.00	9.77	21.79	12.65	34.44	0.19	0.14	0.693
A219	49.69	0.00	0.00	18.00	0.00	27.00	27.00	0.02	0.01	0.543
A220	49.69	0.00	0.00	25.08	10.32	10.23	20.55	0.12	0.08	0.414
EXT201	49.69	0.00	0.00	1.34	34.37	11.66	46.03	0.05	0.06	0.926
EXT202	49.69	0.00	0.00	1.34	34.37	11.66	46.03	0.06	0.07	0.926
EXT203	49.69	0.00	0.00	34.12	0.00	5.09	5.09	0.05	0.01	0.102
EXT204	49.69	0.00	0.00	1.34	34.37	11.66	46.03	0.06	0.07	0.926
EXT205	49.69	4.38	0.00	34.12	0.00	8.47	8.47	0.11	0.02	0.157
EXT206	49.69	0.00	0.00	1.34	34.37	11.66	46.03	0.09	0.12	0.926
EXT207	49.69	0.00	0.00	1.34	34.37	11.66	46.03	0.14	0.17	0.926

```
  U201                    49.69       0.00       0.00      31.92       0.00
10.03      10.03        0.04     0.01   0.202
  U202                    49.69       0.00       0.00       9.77      22.00
14.78      36.78        0.03     0.03   0.740
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****
Node Depth Summary
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Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
0	JUNCTION	0.31	1.61	179.75	0 01:11	1.58
4	JUNCTION	0.01	0.29	178.46	0 01:12	0.27
41	JUNCTION	0.07	2.45	181.50	0 01:10	1.15
42	JUNCTION	0.06	1.39	180.74	0 01:11	0.87
43	JUNCTION	0.14	1.60	180.28	0 01:11	1.50
44	JUNCTION	0.18	1.77	180.23	0 01:11	1.70
45	JUNCTION	0.18	1.92	180.50	0 01:11	1.62
46	JUNCTION	0.13	2.03	180.95	0 01:10	1.38
47	JUNCTION	0.12	1.90	180.70	0 01:09	1.45
48	JUNCTION	0.34	1.88	180.16	0 01:11	1.83
49	JUNCTION	0.27	1.14	179.14	0 01:11	1.12
50	JUNCTION	0.24	1.40	179.47	0 01:10	1.34
51	JUNCTION	0.18	1.85	180.44	0 01:09	1.81
52	JUNCTION	0.22	1.80	181.04	0 01:10	1.78
53	JUNCTION	0.21	1.89	180.95	0 01:10	1.89
54	JUNCTION	0.18	1.84	180.71	0 01:10	1.84
55	JUNCTION	0.35	1.46	179.32	0 01:16	0.99
56	JUNCTION	0.34	0.95	178.74	0 01:13	0.81
57	JUNCTION	0.00	0.00	179.17	0 00:00	0.00
58	JUNCTION	0.00	0.00	179.80	0 00:00	0.00
59	JUNCTION	0.00	0.00	183.47	0 00:00	0.00
60	JUNCTION	0.01	0.19	178.46	0 01:12	0.18
61	JUNCTION	0.00	0.04	178.46	0 01:12	0.04
63	JUNCTION	0.00	0.00	178.72	0 00:00	0.00
64	JUNCTION	0.06	2.70	181.82	0 01:11	1.10
CB1	JUNCTION	0.00	0.00	183.90	0 00:00	0.00
CB12	JUNCTION	0.00	0.00	179.02	0 00:00	0.00
CB14	JUNCTION	0.00	0.00	179.22	0 00:00	0.00
CB17	JUNCTION	0.07	1.42	181.01	0 01:09	1.41
CB19	JUNCTION	0.15	1.41	181.15	0 01:10	1.41
CB2	JUNCTION	0.04	1.28	180.46	0 01:09	1.26
CB21	JUNCTION	0.01	1.27	181.04	0 01:11	0.59
CB23	JUNCTION	0.01	1.28	180.89	0 01:11	0.63
CB25	JUNCTION	0.02	1.81	181.22	0 01:11	0.78
CB28	JUNCTION	0.02	1.01	180.36	0 01:11	0.91
CB3	JUNCTION	0.00	0.00	180.90	0 00:00	0.00
CB31	JUNCTION	0.01	0.91	180.51	0 01:11	0.60
CB33	JUNCTION	0.01	0.50	180.30	0 01:12	0.42
CB39	JUNCTION	0.00	0.04	178.87	0 01:14	0.01
CB42	JUNCTION	0.00	0.03	178.77	0 01:11	0.03
CB43	JUNCTION	0.00	0.00	179.84	0 00:00	0.00
CB44	JUNCTION	0.00	1.27	181.13	0 01:11	0.29

CB5	JUNCTION	0.02	1.22	180.11	0	01:10	1.11
CB7	JUNCTION	0.00	0.00	178.88	0	00:00	0.00
CBMH8	JUNCTION	0.18	1.76	180.58	0	01:11	1.75
DCB15	JUNCTION	0.06	1.45	180.73	0	01:10	1.43
DCB26	JUNCTION	0.10	1.31	180.53	0	01:12	1.30
DCB27	JUNCTION	0.11	1.32	180.54	0	01:12	1.31
DCB37	JUNCTION	0.07	0.80	179.41	0	01:11	0.76
DCB40	JUNCTION	0.06	0.67	179.43	0	01:10	0.59
MDMH1	JUNCTION	0.00	0.00	180.92	0	00:00	0.00
MDMH2	JUNCTION	0.00	0.00	179.76	0	00:00	0.00
MDMH3	JUNCTION	0.00	0.00	177.75	0	00:00	0.00
OGS	JUNCTION	0.29	0.67	178.45	0	01:12	0.66
RYCB1	JUNCTION	0.04	0.28	180.31	0	01:12	0.25
RYCB2	JUNCTION	0.10	1.10	180.53	0	01:11	0.98
RYCB3	JUNCTION	0.06	1.91	181.58	0	01:11	0.57
RYCB4	JUNCTION	0.02	0.89	179.75	0	01:11	0.86
RYCB5	JUNCTION	0.03	1.36	180.21	0	01:12	1.34
RYCB6	JUNCTION	0.00	0.00	178.50	0	01:11	0.00
RYCB7	JUNCTION	0.11	1.71	180.22	0	01:11	1.69
RYCB8	JUNCTION	0.07	0.14	180.46	0	01:11	0.12
RYCB9	JUNCTION	0.02	0.04	181.85	0	01:10	0.04
STMH1	JUNCTION	0.83	1.15	178.12	0	01:49	1.15
STMH10	JUNCTION	0.22	1.45	179.57	0	01:10	1.41
STMH11	JUNCTION	0.00	0.14	178.46	0	01:11	0.13
STMH12	JUNCTION	0.00	0.00	178.47	0	00:00	0.00
STMH13	JUNCTION	0.00	0.00	178.65	0	00:00	0.00
STMH14	JUNCTION	0.00	0.00	178.81	0	00:00	0.00
STMH15	JUNCTION	0.26	1.23	179.26	0	01:11	1.20
STMH16	JUNCTION	0.06	1.80	181.28	0	01:11	0.75
STMH17	JUNCTION	0.18	1.85	180.55	0	01:10	1.84
STMH18	JUNCTION	0.20	1.77	181.03	0	01:10	1.76
STMH19	JUNCTION	0.19	1.85	180.37	0	01:11	1.66
STMH2	JUNCTION	0.00	0.00	183.83	0	00:00	0.00
STMH20	JUNCTION	0.17	1.87	180.53	0	01:11	1.56
STMH21	JUNCTION	0.06	2.52	181.68	0	01:11	1.06
STMH22	JUNCTION	0.14	1.64	180.23	0	01:11	1.57
STMH23	JUNCTION	0.14	1.97	180.80	0	01:10	1.37
STMH3	JUNCTION	0.12	1.96	181.00	0	01:11	1.22
STMH4	JUNCTION	0.36	1.22	179.03	0	01:14	0.90
STMH5	JUNCTION	0.38	1.15	179.04	0	01:11	1.13
STMH6	JUNCTION	0.34	1.15	179.09	0	01:11	1.13
STMH7	JUNCTION	0.33	1.90	180.20	0	01:11	1.85
STMH9	JUNCTION	0.00	0.00	181.06	0	00:00	0.00
O1	OUTFALL	0.00	0.00	176.95	0	00:00	0.00
SWM_Pond_Outfall	OUTFALL	0.00	0.00	178.90	0	00:00	0.00
U201_Outfall	OUTFALL	0.00	0.00	177.71	0	00:00	0.00
U202_Outfall	OUTFALL	0.00	0.00	183.25	0	00:00	0.00
A211_Storage	STORAGE	0.06	0.17	180.74	0	01:11	0.17
RYCB1_Storage	STORAGE	0.01	0.03	181.66	0	01:10	0.03
RYCB2_Storage	STORAGE	0.03	0.07	181.15	0	01:10	0.07
RYCB3_Storage	STORAGE	0.02	0.08	181.61	0	01:10	0.07
RYCB4_Storage	STORAGE	0.00	0.21	180.32	0	01:12	0.21
RYCB5_Storage	STORAGE	0.00	0.00	180.11	0	00:00	0.00
RYCB6_Storage	STORAGE	0.00	0.00	180.05	0	01:11	0.00
RYCB7_Storage	STORAGE	0.02	0.35	180.30	0	01:11	0.35
RYCB8_Storage	STORAGE	0.02	0.05	182.49	0	01:10	0.05
RYCB9_Storage	STORAGE	0.01	0.01	183.37	0	01:10	0.01

S12	STORAGE	0.00	0.00	181.05	0	00:00	0.00
S13	STORAGE	0.00	0.00	180.85	0	00:00	0.00
S19	STORAGE	0.04	0.22	181.21	0	01:10	0.22
S20	STORAGE	0.01	0.21	181.05	0	01:10	0.21
S21	STORAGE	0.01	0.24	180.77	0	01:10	0.24
S22	STORAGE	0.00	0.04	180.47	0	01:10	0.04
S23	STORAGE	0.00	0.09	180.23	0	01:10	0.08
S26	STORAGE	0.00	0.00	180.47	0	00:00	0.00
S27	STORAGE	0.00	0.00	180.27	0	00:00	0.00
S30	STORAGE	0.00	0.00	185.15	0	00:00	0.00
S31	STORAGE	0.00	0.00	182.15	0	00:00	0.00
S32	STORAGE	0.00	0.00	181.09	0	00:00	0.00
S7	STORAGE	0.00	0.01	181.12	0	01:11	0.00
S8	STORAGE	0.00	0.01	181.03	0	01:11	0.00
S9	STORAGE	0.00	0.01	180.87	0	01:11	0.00
StreetA_Storage	STORAGE	0.04	0.17	180.64	0	01:12	0.17
StreetB_Storage1	STORAGE	0.02	0.10	180.11	0	01:10	0.10
StreetB_Storage2	STORAGE	0.04	0.14	180.00	0	01:11	0.14
SWM_Pond	STORAGE	0.81	1.13	178.15	0	01:49	1.13

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Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
0	JUNCTION	0.000	0.962	0 01:13	0	2.04	0.198
4	JUNCTION	0.000	0.047	0 01:10	0	0.00744	-0.263
41	JUNCTION	0.000	0.180	0 01:10	0	0.0622	0.177
42	JUNCTION	0.000	0.123	0 01:10	0	0.0562	-0.111
43	JUNCTION	0.000	0.135	0 01:17	0	0.279	0.119
44	JUNCTION	0.000	0.283	0 01:15	0	0.716	0.009
45	JUNCTION	0.000	0.177	0 01:09	0	0.323	0.267
46	JUNCTION	0.000	0.251	0 01:10	0	0.21	0.380
47	JUNCTION	0.000	0.265	0 01:09	0	0.216	0.160
48	JUNCTION	0.000	0.791	0 01:14	0	1.98	0.116
49	JUNCTION	0.000	0.480	0 01:10	0	0.703	-0.822

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  50                  JUNCTION     0.000    0.337     0  01:10           0
0.442       0.097
  51                  JUNCTION     0.000    0.154     0  01:09           0
0.322       0.089
  52                  JUNCTION     0.000    0.127     0  01:07           0
0.275       0.089
  53                  JUNCTION     0.000    0.150     0  01:08           0
0.299       0.150
  54                  JUNCTION     0.000    0.150     0  01:08           0
0.317       0.071
  55                  JUNCTION     0.000    1.370     0  01:11           0
2.67       0.125
  56                  JUNCTION     0.000    1.599     0  01:11           0
3      -0.020
  57                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  58                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  59                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  60                  JUNCTION     0.000    0.033     0  01:10           0
0.00316       0.519
  61                  JUNCTION     0.000    0.003     0  01:11           0
0.00013      10.874
  63                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  64                  JUNCTION     0.000    0.213     0  01:11           0
0.0325       0.712
  CB1                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB12                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB14                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB17                JUNCTION     0.000    0.071     0  01:08           0
0.0246       0.105
  CB19                JUNCTION     0.000    0.128     0  01:07           0
0.274      -0.001
  CB2                 JUNCTION     0.000    0.033     0  01:08           0
0.00631      -0.421
  CB21                JUNCTION     0.000    0.083     0  01:10           0
0.00149      -4.252
  CB23                JUNCTION     0.000    0.051     0  01:11           0
0.0014       0.447
  CB25                JUNCTION     0.000    0.041     0  01:11           0
0.00139      -4.799
  CB28                JUNCTION     0.000    0.036     0  01:12           0
0.00786      -0.019
  CB3                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB31                JUNCTION     0.000    0.063     0  01:10           0
0.00105       0.164
  CB33                JUNCTION     0.000    0.042     0  01:11           0
0.000774       0.549
  CB39                JUNCTION     0.000    0.007     0  01:16           0
0.000168       1.665
  CB42                JUNCTION     0.000    0.004     0  01:11           0
0.000397       0.009
  CB43                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
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  CB44                JUNCTION     0.000    0.102     0  01:11           0
0.00115      -8.045
  CB5                 JUNCTION     0.000    0.115     0  01:10           0
0.0201       0.207
  CB7                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CBMH8               JUNCTION     0.000    0.297     0  01:10           0
0.608        0.099
  DCB15               JUNCTION     0.000    0.057     0  01:14           0
0.0189      -0.121
  DCB26               JUNCTION     0.000    0.246     0  01:10           0
0.404        0.026
  DCB27               JUNCTION     0.000    0.244     0  01:09           0
0.402        0.030
  DCB37               JUNCTION     0.000    0.229     0  01:11           0
0.336        0.012
  DCB40               JUNCTION     0.000    0.147     0  01:10           0
0.189        0.015
  MDMH1               JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH2               JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH3               JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  OGS                 JUNCTION     0.000    1.807     0  01:13           0
3       0.246
  RYCB1               JUNCTION     0.000    0.021     0  01:11           0
0.0496       0.134
  RYCB2               JUNCTION     0.000    0.072     0  01:10           0
0.214        0.099
  RYCB3               JUNCTION     0.000    0.111     0  01:11           0
0.114        0.028
  RYCB4               JUNCTION     0.000    0.039     0  01:10           0
0.00111        0.078
  RYCB5               JUNCTION     0.000    0.186     0  01:13           0
0.0638      -0.014
  RYCB6               JUNCTION     0.000    0.000     0  01:11           0
3.23e-06      -0.002 ltr
  RYCB7               JUNCTION     0.000    0.104     0  01:09           0
0.101      -0.010
  RYCB8               JUNCTION     0.000    0.046     0  01:10           0
0.167        0.268
  RYCB9               JUNCTION     0.000    0.007     0  01:10           0
0.0216       0.162
  STMH1               JUNCTION     0.000    0.403     0  01:49           0
2.83       0.413
  STMH10              JUNCTION     0.000    0.251     0  01:09           0
0.422        0.136
  STMH11              JUNCTION     0.000    0.023     0  01:11           0
0.00125       1.241
  STMH12              JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH13              JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH14              JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH15              JUNCTION     0.000    0.337     0  01:10           0
0.441      -0.067
  STMH16              JUNCTION     0.000    0.103     0  01:10           0
0.0514       0.201
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STMH17	JUNCTION	0.000	0.147	0	01:09	0	0.316
0.041							
STMH18	JUNCTION	0.000	0.009	0	01:06	0	0.000454
-0.056							
STMH19	JUNCTION	0.000	0.177	0	01:09	0	0.324
0.208							
STMH2	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
STMH20	JUNCTION	0.000	0.250	0	01:09	0	0.326
0.443							
STMH21	JUNCTION	0.000	0.213	0	01:11	0	0.0245
0.381							
STMH22	JUNCTION	0.000	0.135	0	01:17	0	0.278
0.017							
STMH23	JUNCTION	0.000	0.162	0	01:10	0	0.275
0.232							
STMH3	JUNCTION	0.000	0.233	0	01:10	0	0.204
0.578							
STMH4	JUNCTION	0.000	1.370	0	01:11	0	2.66
0.080							
STMH5	JUNCTION	0.000	1.370	0	01:11	0	2.67
0.098							
STMH6	JUNCTION	0.000	1.369	0	01:11	0	2.74
0.106							
STMH7	JUNCTION	0.000	0.622	0	01:12	0	1.58
0.128							
STMH9	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
O1	OUTFALL	0.000	0.403	0	01:50	0	2.82
0.000							
SWM_Pond_Outfall	OUTFALL	0.000	0.000	0	00:00	0	0
0.000 ltr							
U201_Outfall	OUTFALL	0.010	0.010	0	01:29	0.044	0.044
0.000							
U202_Outfall	OUTFALL	0.033	0.033	0	01:10	0.0294	0.0294
0.000							
A211_Storage	STORAGE	0.268	0.450	0	01:10	0.422	0.655
0.007							
RYCB1_Storage	STORAGE	0.062	0.062	0	01:10	0.151	0.151
0.006							
RYCB2_Storage	STORAGE	0.036	0.073	0	01:10	0.113	0.214
0.009							
RYCB3_Storage	STORAGE	0.265	0.265	0	01:10	0.347	0.347
0.002							
RYCB4_Storage	STORAGE	0.000	0.205	0	01:12	0	0.0662
0.036							
RYCB5_Storage	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
RYCB6_Storage	STORAGE	0.000	0.000	0	01:11	0	3.27e-06
0.036 ltr							
RYCB7_Storage	STORAGE	0.111	0.111	0	01:10	0.101	0.101
0.050							
RYCB8_Storage	STORAGE	0.031	0.046	0	01:10	0.123	0.167
0.016							
RYCB9_Storage	STORAGE	0.023	0.023	0	01:10	0.0657	0.0657
0.009							
S12	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S13	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							

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  S19                   STORAGE      0.261    0.261      0  01:10        0.342
0.342      -0.002
  S20                   STORAGE      0.000    0.213      0  01:10            0
0.0677       0.009
  S21                   STORAGE      0.000    0.178      0  01:10            0
0.0436       0.030
  S22                   STORAGE      0.000    0.149      0  01:10            0
0.0254       0.060
  S23                   STORAGE      0.000    0.121      0  01:10            0
0.0198       0.156
  S26                   STORAGE      0.000    0.000      0  00:00            0
0       0.000 ltr
  S27                   STORAGE      0.000    0.000      0  00:00            0
0       0.000 ltr
  S30                   STORAGE      0.000    0.000      0  00:00            0
0       0.000 ltr
  S31                   STORAGE      0.000    0.000      0  00:00            0
0       0.000 ltr
  S32                   STORAGE      0.000    0.000      0  00:00            0
0       0.000 ltr
  S7                    STORAGE      0.000    0.023      0  01:11            0
3.27e-05       6.416 ltr
  S8                    STORAGE      0.000    0.020      0  01:11            0
2.89e-05       6.829 ltr
  S9                    STORAGE      0.000    0.006      0  01:11            0
1.03e-05     -70.099
  StreetA_Storage       STORAGE      0.605    0.753      0  01:10        0.833
0.88       0.011
  StreetB_Storage1      STORAGE      0.450    0.450      0  01:10        0.574
0.576       0.001
  StreetB_Storage2      STORAGE      0.464    0.763      0  01:10        0.637
1.02       0.008
  SWM_Pond              STORAGE      0.237    2.203      0  01:11        0.321
4       1.296


  **********************
  Node Surcharge Summary
  **********************

  Surcharging occurs when water rises above the top of the highest conduit.
  -------------------------------------------------------------------------

                                          Max. Height   Min. Depth
                                Hours     Above Crown    Below Rim
  Node                  Type  Surcharged       Meters       Meters
  -------------------------------------------------------------------------
  0                     JUNCTION      0.23        0.932        0.383
  41                    JUNCTION      0.14        2.075        0.000
  42                    JUNCTION      0.10        1.017        0.358
  43                    JUNCTION      0.20        1.154        0.366
  44                    JUNCTION      0.24        1.241        0.294
  45                    JUNCTION      0.21        1.397        0.228
  46                    JUNCTION      0.14        1.578        0.122
  47                    JUNCTION      0.17        1.449        0.211
  48                    JUNCTION      0.24        1.209        0.316
  49                    JUNCTION      0.41        0.685        0.935
  50                    JUNCTION      0.35        0.953        0.717
  51                    JUNCTION      0.29        1.550        0.040
  52                    JUNCTION      0.27        1.496        0.004
```

53	JUNCTION	0.26	1.594	0.000
54	JUNCTION	0.24	1.542	0.000
55	JUNCTION	0.09	0.561	0.799
56	JUNCTION	0.01	0.046	1.174
64	JUNCTION	0.10	2.253	0.000
CB17	JUNCTION	0.17	0.818	0.000
CB19	JUNCTION	0.22	0.814	0.000
CB2	JUNCTION	0.13	0.677	0.000
CB21	JUNCTION	0.01	0.672	0.000
CB23	JUNCTION	0.01	0.681	0.000
CB25	JUNCTION	0.01	1.025	0.000
CB28	JUNCTION	0.04	0.282	0.238
CB31	JUNCTION	0.02	0.308	0.342
CB44	JUNCTION	0.01	0.666	0.000
CB5	JUNCTION	0.05	0.619	0.031
CBMH8	JUNCTION	0.16	1.163	0.000
DCB15	JUNCTION	0.16	0.847	0.000
DCB26	JUNCTION	0.13	0.712	0.000
DCB27	JUNCTION	0.13	0.716	0.000
DCB37	JUNCTION	0.05	0.200	0.450
DCB40	JUNCTION	0.01	0.072	0.578
RYCB2	JUNCTION	0.09	0.505	0.545
RYCB3	JUNCTION	0.01	1.312	0.000
RYCB4	JUNCTION	0.08	0.291	0.359
RYCB5	JUNCTION	0.09	0.756	0.000
RYCB7	JUNCTION	0.14	1.107	0.000
STMH1	JUNCTION	1.81	0.470	1.345
STMH10	JUNCTION	0.32	1.001	0.709
STMH15	JUNCTION	0.37	0.776	0.834
STMH16	JUNCTION	0.08	1.421	0.084
STMH17	JUNCTION	0.28	1.553	0.097
STMH18	JUNCTION	0.26	1.474	0.026
STMH19	JUNCTION	0.22	1.326	0.219
STMH20	JUNCTION	0.18	1.349	0.296
STMH21	JUNCTION	0.09	2.068	0.000
STMH22	JUNCTION	0.23	1.195	0.335
STMH23	JUNCTION	0.16	1.518	0.000
STMH3	JUNCTION	0.11	1.509	0.221
STMH4	JUNCTION	0.01	0.319	0.951
STMH5	JUNCTION	0.12	0.247	1.063
STMH6	JUNCTION	0.11	0.249	0.981
STMH7	JUNCTION	0.24	1.230	0.325

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
****

	Average	Avg	Evap	Exfil	Maximum	Max	Time of Max	Maximum
	Volume	Pcnt	Pcnt	Pcnt	Volume	Pcnt	Occurrence	Outflow
Storage Unit	1000 m3	Full	Loss	Loss	1000 m3	Full	days hr:min	CMS
A211_Storage	0.000	0	0	0	0.000	5	0 01:11	0.448
RYCB1_Storage	0.000	0	0	0	0.000	0	0 01:10	0.064
RYCB2_Storage	0.000	0	0	0	0.000	1	0 01:10	0.072
RYCB3_Storage	0.000	0	0	0	0.000	1	0 01:10	0.275
RYCB4_Storage	0.000	0	0	0	0.000	11	0 01:12	0.211
RYCB5_Storage	0.000	0	0	0	0.000	0	0 00:00	0.000
RYCB6_Storage	0.000	0	0	0	0.000	0	0 01:11	0.000
RYCB7_Storage	0.000	1	0	0	0.002	73	0 01:11	0.104
RYCB8_Storage	0.000	0	0	0	0.000	0	0 01:10	0.046
RYCB9_Storage	0.000	0	0	0	0.000	0	0 01:10	0.023
S12	0.000	0	0	0	0.000	0	0 00:00	0.000
S13	0.000	0	0	0	0.000	0	0 00:00	0.000
S19	0.000	12	0	0	0.002	73	0 01:10	0.262
S20	0.000	3	0	0	0.002	71	0 01:10	0.211
S21	0.000	2	0	0	0.002	79	0 01:10	0.177
S22	0.000	0	0	0	0.000	13	0 01:10	0.149
S23	0.000	0	0	0	0.001	3	0 01:10	0.115
S26	0.000	0	0	0	0.000	0	0 00:00	0.000
S27	0.000	0	0	0	0.000	0	0 00:00	0.000
S30	0.000	0	0	0	0.000	0	0 00:00	0.000
S31	0.000	0	0	0	0.000	0	0 00:00	0.000
S32	0.000	0	0	0	0.000	0	0 00:00	0.000
S7	0.000	0	0	0	0.000	1	0 01:11	0.003
S8	0.000	0	0	0	0.000	1	0 01:11	0.002
S9	0.000	0	0	0	0.000	1	0 01:11	0.003
StreetA_Storage	0.002	1	0	0	0.035	18	0 01:12	0.627

StreetB_Storage1	0.000	0	0	0	0.001	5	0
01:10	0.447						
StreetB_Storage2	0.001	1	0	0	0.023	11	0
01:11	0.701						
SWM_Pond	1.050	25	0	0	1.682	40	0
01:49	0.403						

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
O1	99.82	0.302	0.403	2.818
SWM_Pond_Outfall	0.00	0.000	0.000	0.000
U201_Outfall	71.76	0.007	0.010	0.044
U202_Outfall	99.97	0.003	0.033	0.029
System	67.89	0.312	0.413	2.891

****
Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
4	CONDUIT	0.000	0 01:11	0.01	0.00	0.23
C1	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C10	CONDUIT	0.135	0 01:17	1.55	0.53	1.00
C11	CONDUIT	0.135	0 01:17	0.87	0.34	1.00
C12	CONDUIT	0.308	0 01:09	1.94	1.06	1.00
C13	CONDUIT	0.007	0 01:10	0.95	0.03	0.56
C14	CONDUIT	0.207	0 01:11	1.53	1.40	1.00
C15	CONDUIT	0.200	0 01:10	1.45	1.29	1.00
C16	CONDUIT	0.046	0 01:11	1.45	0.34	0.74
C17	CONDUIT	0.189	0 01:10	1.39	1.06	1.00
C18	CONDUIT	0.209	0 01:10	1.38	1.16	1.00
C19	CONDUIT	0.231	0 01:09	1.49	0.82	1.00
C2	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C20	CONDUIT	0.109	0 01:11	1.18	0.48	1.00
C21	CONDUIT	0.178	0 01:09	0.85	0.75	1.00
C22	CONDUIT	0.177	0 01:09	0.88	0.72	1.00
C23	CONDUIT	0.177	0 01:09	1.11	0.77	1.00
C24	CONDUIT	0.324	0 01:08	1.70	0.36	1.00
C25	CONDUIT	0.622	0 01:12	1.74	1.31	1.00
C26	CONDUIT	0.791	0 01:14	2.21	1.70	1.00
C27	CONDUIT	0.039	0 01:10	0.79	0.18	1.00
C28	CONDUIT	0.184	0 01:13	3.74	0.86	1.00
C29	CONDUIT	0.962	0 01:13	2.69	1.82	1.00

C3	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C30	CONDUIT	0.009	0	01:06	0.12	0.10	1.00
C31	CONDUIT	0.126	0	01:07	1.79	1.70	1.00
C32	CONDUIT	0.150	0	01:08	2.12	2.04	1.00
C33	CONDUIT	0.147	0	01:09	2.08	1.31	1.00
C34	CONDUIT	0.147	0	01:09	2.07	1.50	1.00
C35	CONDUIT	0.154	0	01:09	2.18	1.51	1.00
C36	CONDUIT	0.101	0	01:09	2.06	1.55	1.00
C37	CONDUIT	0.251	0	01:09	1.58	1.62	1.00
C38	CONDUIT	0.337	0	01:10	2.12	2.51	1.00
C39	CONDUIT	0.337	0	01:10	2.12	2.18	1.00
C4	CONDUIT	0.028	0	01:13	1.14	0.26	0.97
C40	CONDUIT	0.480	0	01:10	3.02	1.00	1.00
C41	CONDUIT	1.370	0	01:11	2.15	1.06	1.00
C42	CONDUIT	1.369	0	01:12	2.15	2.42	1.00
C43	CONDUIT	1.370	0	01:11	2.16	1.67	1.00
C44	CONDUIT	1.378	0	01:12	2.22	2.31	1.00
C45	CONDUIT	1.789	0	01:13	3.27	3.24	0.86
C46	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C47	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C48	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C49	CONDUIT	0.000	0	00:00	0.00	0.00	0.05
C5	CONDUIT	0.083	0	01:10	0.96	0.54	1.00
C50	CONDUIT	0.003	0	01:11	0.20	0.03	0.23
C51	CONDUIT	0.023	0	01:11	0.65	0.19	0.41
C52	CONDUIT	0.033	0	01:10	0.52	0.29	0.64
C53	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C54	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C55	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C56	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C57	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C58	CONDUIT	1.582	0	01:12	2.76	0.72	0.69
C59	CONDUIT	0.044	0	01:10	0.47	0.16	0.89
C6	CONDUIT	0.104	0	01:10	1.04	0.69	1.00
C60	CONDUIT	0.403	0	01:49	1.13	0.83	1.00
C62	CONDUIT	0.042	0	01:11	1.79	0.45	1.00
C63	CONDUIT	0.063	0	01:10	3.33	0.60	1.00
C64	CONDUIT	0.037	0	01:12	1.17	0.32	1.00
C65	CONDUIT	0.102	0	01:11	3.91	0.85	1.00
C66	CONDUIT	0.083	0	01:10	2.71	0.35	1.00
C67	CONDUIT	0.051	0	01:11	2.12	0.40	1.00
C68	CONDUIT	0.041	0	01:11	1.34	0.32	1.00
C69	CONDUIT	0.237	0	01:09	4.82	1.06	1.00
C7	CONDUIT	0.162	0	01:10	1.47	0.84	1.00
C70	CONDUIT	0.237	0	01:09	4.82	0.95	1.00
C71	CONDUIT	0.127	0	01:07	4.03	1.28	1.00
C72	CONDUIT	0.069	0	01:08	2.21	0.68	1.00
C73	CONDUIT	0.055	0	01:14	1.13	0.34	1.00
C74	CONDUIT	0.033	0	01:08	1.04	0.30	1.00
C75	CONDUIT	0.115	0	01:10	3.66	0.90	1.00
C76	CONDUIT	0.149	0	01:10	3.03	0.67	1.00
C77	CONDUIT	0.007	0	01:16	0.42	0.05	0.60
C78	CONDUIT	0.232	0	01:11	4.73	1.01	1.00
C79	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C8	CONDUIT	0.078	0	01:18	1.56	0.71	1.00
C80	CONDUIT	0.000	0	00:00	0.00	0.00	0.09
C81	CONDUIT	0.000	0	00:00	0.00	0.00	0.47

C82	CONDUIT	0.004	0	01:11	0.22	0.04	0.57
C83	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C84	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C85	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C9	CONDUIT	0.134	0	01:17	1.25	0.66	1.00
1	ORIFICE	0.021	0	01:10			
100	ORIFICE	0.000	0	00:00			
119	ORIFICE	0.186	0	01:13			
12	ORIFICE	0.004	0	01:11			
120	ORIFICE	0.000	0	00:00			
13	ORIFICE	0.000	0	00:00			
14	ORIFICE	0.000	0	00:00			
151	ORIFICE	0.000	0	00:00			
2	ORIFICE	0.403	0	01:50			1.00
3	ORIFICE	0.244	0	01:09			
37	ORIFICE	0.000	0	00:00			
38	ORIFICE	0.072	0	01:10			
39	ORIFICE	0.090	0	01:10			
40	ORIFICE	0.046	0	01:10			
41	ORIFICE	0.007	0	01:10			
42	ORIFICE	0.104	0	01:09			
43	ORIFICE	0.297	0	01:10			
5	ORIFICE	0.000	0	01:11			
6	ORIFICE	0.106	0	01:11			
7	ORIFICE	0.246	0	01:10			
8	ORIFICE	0.036	0	01:12			
80	ORIFICE	0.000	0	00:00			
85	ORIFICE	0.006	0	01:11			
86	ORIFICE	0.020	0	01:11			
87	ORIFICE	0.023	0	01:11			
88	ORIFICE	0.128	0	01:07			
89	ORIFICE	0.071	0	01:08			
90	ORIFICE	0.000	0	00:00			
91	ORIFICE	0.000	0	00:00			
92	ORIFICE	0.000	0	00:00			
94	ORIFICE	0.229	0	01:11			
96	ORIFICE	0.147	0	01:10			
97	ORIFICE	0.032	0	01:09			
98	ORIFICE	0.115	0	01:10			
99	ORIFICE	0.057	0	01:14			
10	WEIR	0.000	0	00:00			0.00
18	WEIR	0.000	0	00:00			0.00
19	WEIR	0.000	0	00:00			0.00
9	WEIR	0.000	0	00:00			0.00
A211_Weir	WEIR	0.152	0	01:11			0.44
RYCB1_Weir	WEIR	0.043	0	01:10			0.19
RYCB2_Weir	WEIR	0.000	0	00:00			0.00
RYCB3_Weir	WEIR	0.190	0	01:11			0.52
RYCB4_Weir	WEIR	0.032	0	01:12			0.16
RYCB5_Weir	WEIR	0.000	0	00:00			0.00
RYCB6_Weir	WEIR	0.000	0	00:00			0.00
RYCB7_Weir	WEIR	0.000	0	01:11			0.03
RYCB8_Weir	WEIR	0.000	0	00:00			0.00
RYCB9_Weir	WEIR	0.015	0	01:10			0.09
StreetA_Weir	WEIR	0.205	0	01:12			0.54
StreetB_Weir1	WEIR	0.300	0	01:10			0.69
StreetB_Weir2	WEIR	0.468	0	01:11			0.93

SWM_Pond_Weir	WEIR	0.000	0	00:00	0.00
W17	WEIR	0.213	0	01:10	1.73
W18	WEIR	0.178	0	01:10	1.53
W19	WEIR	0.149	0	01:10	1.37
W20	WEIR	0.121	0	01:10	1.19
W21	WEIR	0.000	0	00:00	0.00
W27	WEIR	0.000	0	00:00	0.00
W30	WEIR	0.000	0	00:00	0.00
W31	WEIR	0.000	0	00:00	0.00
W6	WEIR	0.000	0	00:00	0.00
W8	WEIR	0.000	0	00:00	0.00
W9	WEIR	0.000	0	00:00	0.00

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Flow Classification Summary
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Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
4	1.00	0.30	0.00	0.00	0.70	0.00	0.00	0.00	0.61	0.00
C1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C10	1.00	0.00	0.00	0.00	0.12	0.88	0.00	0.00	0.41	0.00
C11	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.81	0.00
C12	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.87	0.00
C13	1.00	0.00	0.00	0.00	0.09	0.91	0.00	0.00	0.97	0.00
C14	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.22	0.00
C15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.69	0.00
C16	1.00	0.00	0.00	0.00	0.07	0.93	0.00	0.00	0.95	0.00
C17	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.14	0.00
C18	1.00	0.00	0.00	0.00	0.29	0.71	0.00	0.00	0.01	0.00
C19	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.88	0.00
C2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C20	1.00	0.00	0.00	0.00	0.76	0.24	0.00	0.00	0.91	0.00
C21	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	0.00
C22	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.11	0.00

C23	1.00	0.00	0.01	0.00	0.54	0.46	0.00	0.00	0.15
0.00									
C24	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.67
0.00									
C25	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.09
0.00									
C26	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.01
0.00									
C27	1.00	0.00	0.85	0.00	0.15	0.00	0.00	0.00	0.55
0.00									
C28	1.00	0.00	0.83	0.00	0.17	0.00	0.00	0.00	0.55
0.00									
C29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.36
0.00									
C3	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C30	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.00
0.00									
C31	1.00	0.00	0.00	0.00	0.70	0.30	0.00	0.00	0.52
0.00									
C32	1.00	0.00	0.00	0.00	0.10	0.90	0.00	0.00	0.00
0.00									
C33	1.00	0.00	0.00	0.00	0.10	0.90	0.00	0.00	0.67
0.00									
C34	1.00	0.01	0.00	0.00	0.10	0.89	0.00	0.00	0.49
0.00									
C35	1.00	0.00	0.01	0.00	0.76	0.24	0.00	0.00	0.85
0.00									
C36	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.85
0.00									
C37	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.25
0.00									
C38	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C39	1.00	0.00	0.00	0.00	0.96	0.03	0.00	0.00	0.03
0.00									
C4	1.00	0.00	0.00	0.00	0.04	0.96	0.00	0.00	0.82
0.00									
C40	1.00	0.00	0.00	0.00	0.96	0.04	0.00	0.00	0.15
0.00									
C41	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.12
0.00									
C42	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C43	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.08
0.00									
C44	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.02
0.00									
C45	1.00	0.00	0.00	0.00	0.65	0.35	0.00	0.00	0.02
0.00									
C46	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C47	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C48	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C49	1.00	0.30	0.70	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C5	1.00	0.00	0.00	0.00	0.13	0.87	0.00	0.00	0.71
0.00									

C50	1.00	0.30	0.00	0.00	0.70	0.00	0.00	0.00	0.59
0.00									
C51	1.00	0.29	0.00	0.00	0.70	0.00	0.00	0.00	0.58
0.00									
C52	1.00	0.28	0.01	0.00	0.71	0.00	0.00	0.00	0.09
0.00									
C53	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C54	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C55	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C56	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C57	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C58	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.45
0.00									
C59	1.00	0.00	0.58	0.00	0.42	0.00	0.00	0.00	0.52
0.00									
C6	1.00	0.01	0.00	0.00	0.08	0.91	0.00	0.00	0.02
0.00									
C60	1.00	0.00	0.00	0.00	0.95	0.05	0.00	0.00	0.00
0.00									
C62	1.00	0.01	0.81	0.00	0.18	0.00	0.00	0.00	0.58
0.00									
C63	1.00	0.01	0.82	0.00	0.17	0.00	0.00	0.00	0.57
0.00									
C64	1.00	0.00	0.82	0.00	0.17	0.00	0.00	0.00	0.57
0.00									
C65	1.00	0.00	0.87	0.00	0.13	0.00	0.00	0.00	0.58
0.00									
C66	1.00	0.00	0.91	0.00	0.09	0.00	0.00	0.00	0.58
0.00									
C67	1.00	0.01	0.86	0.00	0.13	0.00	0.00	0.00	0.58
0.00									
C68	1.00	0.00	0.84	0.00	0.15	0.00	0.00	0.00	0.57
0.00									
C69	1.00	0.00	0.00	0.00	0.05	0.95	0.00	0.00	0.88
0.00									
C7	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.89
0.00									
C70	1.00	0.00	0.00	0.00	0.65	0.35	0.00	0.00	0.88
0.00									
C71	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.88
0.00									
C72	1.00	0.00	0.77	0.00	0.23	0.00	0.00	0.00	0.55
0.00									
C73	1.00	0.00	0.80	0.00	0.20	0.00	0.00	0.00	0.55
0.00									
C74	1.00	0.01	0.78	0.00	0.21	0.00	0.00	0.00	0.55
0.00									
C75	1.00	0.00	0.84	0.00	0.15	0.00	0.00	0.00	0.57
0.00									
C76	1.00	0.00	0.00	0.00	0.74	0.26	0.00	0.00	0.88
0.00									
C77	1.00	0.00	0.88	0.00	0.12	0.00	0.00	0.00	0.60
0.00									
C78	1.00	0.00	0.00	0.00	0.73	0.27	0.00	0.00	0.86
0.00									

C79	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C8	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.88
0.00									
C80	1.00	0.30	0.70	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C81	1.00	0.29	0.71	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C82	1.00	0.58	0.30	0.00	0.13	0.00	0.00	0.00	0.61
0.00									
C83	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C84	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C85	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C9	1.00	0.00	0.00	0.00	0.22	0.78	0.00	0.00	0.23
0.00									

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Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C10	0.20	0.20	0.23	0.01	0.01
C11	0.23	0.23	0.38	0.01	0.01
C12	0.20	0.20	0.38	0.02	0.02
C13	0.01	0.01	0.11	0.01	0.01
C14	0.09	0.09	0.10	0.01	0.01
C15	0.10	0.10	0.11	0.01	0.01
C16	0.01	0.01	0.15	0.01	0.01
C17	0.11	0.11	0.14	0.01	0.01
C18	0.14	0.14	0.17	0.01	0.01
C19	0.17	0.17	0.20	0.01	0.01
C20	0.05	0.05	0.22	0.01	0.01
C21	0.18	0.18	0.21	0.01	0.01
C22	0.21	0.21	0.22	0.01	0.01
C23	0.22	0.22	0.24	0.01	0.01
C24	0.24	0.24	0.31	0.01	0.01
C25	0.24	0.24	0.24	0.17	0.16
C26	0.23	0.24	0.23	0.30	0.23
C27	0.14	0.14	1.85	0.01	0.01
C28	0.14	0.14	1.88	0.01	0.01
C29	0.23	0.23	0.23	0.25	0.22
C30	0.26	0.26	0.27	0.01	0.01
C31	0.26	0.27	0.26	0.15	0.11
C32	0.24	0.26	0.24	0.31	0.24
C33	0.24	0.24	0.28	0.14	0.15
C34	0.28	0.28	0.29	0.21	0.21
C35	0.29	0.29	0.47	0.20	0.20
C36	0.23	0.23	0.59	0.08	0.08
C37	0.32	0.32	0.35	0.16	0.17
C38	0.35	0.35	0.37	0.21	0.19

C39	0.37	0.37	0.40	0.16	0.16
C4	0.01	0.01	0.09	0.01	0.01
C40	0.39	0.40	0.49	0.01	0.01
C41	0.11	0.11	0.12	0.04	0.03
C42	0.09	0.12	0.09	0.33	0.08
C43	0.01	0.09	0.01	0.18	0.01
C44	0.01	0.01	0.01	0.30	0.01
C45	0.01	0.01	0.01	0.38	0.01
C5	0.08	0.08	0.10	0.01	0.01
C58	0.01	0.01	1.02	0.01	0.01
C59	0.01	0.01	0.34	0.01	0.01
C6	0.10	0.10	0.14	0.01	0.01
C60	1.80	1.80	1.81	0.01	0.01
C62	0.06	0.06	0.12	0.01	0.01
C63	0.09	0.09	0.16	0.01	0.01
C64	0.11	0.11	0.27	0.01	0.01
C65	0.05	0.05	0.15	0.01	0.01
C66	0.05	0.05	0.18	0.01	0.01
C67	0.08	0.08	0.23	0.01	0.01
C68	0.11	0.11	0.30	0.01	0.01
C69	0.17	0.17	0.42	0.01	0.01
C7	0.14	0.14	0.18	0.01	0.01
C70	0.17	0.17	1.38	0.01	0.01
C71	0.26	0.26	0.41	0.04	0.04
C72	0.20	0.20	0.36	0.01	0.01
C73	0.20	0.20	0.26	0.01	0.01
C74	0.17	0.17	0.31	0.01	0.01
C75	0.08	0.08	1.85	0.01	0.01
C76	0.10	0.10	1.02	0.01	0.01
C77	0.01	0.01	1.84	0.01	0.01
C78	0.10	0.10	1.81	0.01	0.01
C8	0.13	0.13	0.20	0.01	0.01
C82	0.01	0.01	0.08	0.01	0.01
C9	0.16	0.16	0.20	0.01	0.01

Analysis begun on: Wed Jul 20 15:32:57 2022
Analysis ended on: Wed Jul 20 15:32:57 2022
Total elapsed time: < 1 sec

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

SBM-18-0530 Kettle Creek

****
Element Count
****
Number of rain gages 1
Number of subcatchments ... 29
Number of nodes 118
Number of links 149
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
St.ThomasRainGage	St.Thomas50Yr	INTENSITY	1 min.

****
Subcatchment Summary
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Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A201	0.43	95.56	0.00	30.0000	St.ThomasRainGage	A202
A202	0.22	24.44	45.71	2.0000	St.ThomasRainGage	RYCB1_Storage
A203	0.51	87.93	0.00	30.0000	St.ThomasRainGage	A204
A204	0.08	42.11	45.71	2.0000	St.ThomasRainGage	RYCB2_Storage
A205	0.05	100.00	45.71	2.0000	St.ThomasRainGage	RYCB9_Storage
A206	0.12	7.50	25.00	30.0000	St.ThomasRainGage	A207
A207	0.03	60.00	45.71	2.0000	St.ThomasRainGage	RYCB8_Storage
A208	1.52	119.68	25.00	30.0000	St.ThomasRainGage	A209
A209	0.04	80.00	45.71	2.0000	St.ThomasRainGage	RYCB3_Storage
A210	1.36	143.16	25.00	30.0000	St.ThomasRainGage	A211
A211	0.19	63.33	45.71	2.0000	St.ThomasRainGage	A211_Storage
A212	2.46	144.71	45.71	2.0000	St.ThomasRainGage	StreetA_Storage

A213	0.55	78.57	45.71	2.0000	St.ThomasRainGage StreetB_Storage1
A214	0.99	79.20	45.71	2.0000	St.ThomasRainGage S19
A215	1.09	82.58	46.70	2.0000	St.ThomasRainGage StreetB_Storage1
A216	0.25	100.00	64.29	2.0000	St.ThomasRainGage RYCB7_Storage
A217	1.85	97.37	48.65	2.0000	St.ThomasRainGage StreetB_Storage2
A218	0.54	40.00	45.71	2.0000	St.ThomasRainGage SWM_Pond
A219	0.06	75.00	0.00	2.0000	St.ThomasRainGage SWM_Pond
A220	0.58	193.33	21.43	8.0000	St.ThomasRainGage SWM_Pond
EXT201	0.11	137.50	71.43	2.0000	St.ThomasRainGage A201
EXT202	0.12	150.00	71.43	2.0000	St.ThomasRainGage A203
EXT203	0.95	73.08	0.00	30.0000	St.ThomasRainGage A205
EXT204	0.12	150.00	71.43	2.0000	St.ThomasRainGage EXT205
EXT205	1.26	78.75	0.00	30.0000	St.ThomasRainGage A206
EXT206	0.20	250.00	71.43	2.0000	St.ThomasRainGage A208
EXT207	0.30	375.00	71.43	2.0000	St.ThomasRainGage A210
U201	0.44	44.00	0.00	3.0000	St.ThomasRainGage U201_Outfall
U202	0.08	47.06	45.71	6.0000	St.ThomasRainGage U202_Outfall

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
0	JUNCTION	178.14	1.99	0.0	
4	JUNCTION	178.17	1.87	0.0	
41	JUNCTION	179.05	1.85	0.0	
42	JUNCTION	179.35	1.75	0.0	
43	JUNCTION	178.68	1.97	0.0	
44	JUNCTION	178.46	2.06	0.0	
45	JUNCTION	178.58	2.15	0.0	
46	JUNCTION	178.92	2.15	0.0	
47	JUNCTION	178.80	2.11	0.0	
48	JUNCTION	178.28	2.20	0.0	
49	JUNCTION	178.00	2.07	0.0	
50	JUNCTION	178.07	2.12	0.0	
51	JUNCTION	178.59	1.89	0.0	
52	JUNCTION	179.24	1.80	0.0	
53	JUNCTION	179.06	1.83	0.0	
54	JUNCTION	178.87	1.71	0.0	
55	JUNCTION	177.86	2.26	0.0	

56	JUNCTION	177.79	2.12	0.0
57	JUNCTION	179.17	1.97	0.0
58	JUNCTION	179.80	2.40	0.0
59	JUNCTION	183.47	1.73	0.0
60	JUNCTION	178.27	1.90	0.0
61	JUNCTION	178.42	1.90	0.0
63	JUNCTION	178.72	1.76	0.0
64	JUNCTION	179.12	2.01	0.0
CB1	JUNCTION	183.90	1.25	0.0
CB12	JUNCTION	179.02	1.25	0.0
CB14	JUNCTION	179.22	1.25	0.0
CB17	JUNCTION	179.59	1.25	0.0
CB19	JUNCTION	179.74	1.25	0.0
CB2	JUNCTION	179.18	1.25	0.0
CB21	JUNCTION	179.77	1.25	0.0
CB23	JUNCTION	179.61	1.25	0.0
CB25	JUNCTION	179.41	1.25	0.0
CB28	JUNCTION	179.35	1.25	0.0
CB3	JUNCTION	180.90	1.25	0.0
CB31	JUNCTION	179.60	1.25	0.0
CB33	JUNCTION	179.80	1.25	0.0
CB39	JUNCTION	178.83	1.25	0.0
CB42	JUNCTION	178.74	1.25	0.0
CB43	JUNCTION	179.84	1.25	0.0
CB44	JUNCTION	179.86	1.25	0.0
CB5	JUNCTION	178.89	1.25	0.0
CB7	JUNCTION	178.88	1.25	0.0
CBMH8	JUNCTION	178.82	1.75	0.0
DCB15	JUNCTION	179.28	1.25	0.0
DCB26	JUNCTION	179.22	1.25	0.0
DCB27	JUNCTION	179.22	1.25	0.0
DCB37	JUNCTION	178.61	1.25	0.0
DCB40	JUNCTION	178.76	1.25	0.0
MDMH1	JUNCTION	180.92	5.84	0.0
MDMH2	JUNCTION	179.76	5.54	0.0
MDMH3	JUNCTION	177.75	1.86	0.0
OGS	JUNCTION	177.78	2.22	0.0
RYCB1	JUNCTION	180.03	1.60	0.0
RYCB2	JUNCTION	179.43	1.65	0.0
RYCB3	JUNCTION	179.67	1.86	0.0
RYCB4	JUNCTION	178.86	1.25	0.0
RYCB5	JUNCTION	178.85	1.26	0.0
RYCB6	JUNCTION	178.50	1.55	0.0
RYCB7	JUNCTION	178.51	1.44	0.0
RYCB8	JUNCTION	180.32	2.12	0.0
RYCB9	JUNCTION	181.81	1.55	0.0
STMH1	JUNCTION	176.97	2.49	0.0
STMH10	JUNCTION	178.12	2.16	0.0
STMH11	JUNCTION	178.32	1.89	0.0
STMH12	JUNCTION	178.47	1.91	0.0
STMH13	JUNCTION	178.65	1.82	0.0
STMH14	JUNCTION	178.81	1.80	0.0
STMH15	JUNCTION	178.03	2.06	0.0
STMH16	JUNCTION	179.48	1.88	0.0
STMH17	JUNCTION	178.70	1.95	0.0
STMH18	JUNCTION	179.26	1.80	0.0
STMH19	JUNCTION	178.52	2.07	0.0

STMH2	JUNCTION	183.83	1.75	0.0
STMH20	JUNCTION	178.66	2.17	0.0
STMH21	JUNCTION	179.16	2.07	0.0
STMH22	JUNCTION	178.59	1.98	0.0
STMH23	JUNCTION	178.83	1.95	0.0
STMH3	JUNCTION	179.04	2.18	0.0
STMH4	JUNCTION	177.81	2.17	0.0
STMH5	JUNCTION	177.89	2.21	0.0
STMH6	JUNCTION	177.94	2.13	0.0
STMH7	JUNCTION	178.30	2.23	0.0
STMH9	JUNCTION	181.06	2.61	0.0
O1	OUTFALL	176.95	0.00	0.0
SWM_Pond_Outfall	OUTFALL	178.90	0.00	0.0
U201_Outfall	OUTFALL	177.71	0.68	0.0
U202_Outfall	OUTFALL	183.25	0.00	0.0
A211_Storage	STORAGE	180.57	0.45	0.0
RYCB1_Storage	STORAGE	181.63	0.45	0.0
RYCB2_Storage	STORAGE	181.08	0.38	0.0
RYCB3_Storage	STORAGE	181.53	0.45	0.0
RYCB4_Storage	STORAGE	180.11	0.45	0.0
RYCB5_Storage	STORAGE	180.11	0.45	0.0
RYCB6_Storage	STORAGE	180.05	0.27	0.0
RYCB7_Storage	STORAGE	179.95	0.39	0.0
RYCB8_Storage	STORAGE	182.44	0.45	0.0
RYCB9_Storage	STORAGE	183.36	0.13	0.0
S12	STORAGE	181.05	0.30	0.0
S13	STORAGE	180.85	0.30	0.0
S19	STORAGE	180.99	0.30	0.0
S20	STORAGE	180.84	0.30	0.0
S21	STORAGE	180.53	0.30	0.0
S22	STORAGE	180.43	0.29	0.0
S23	STORAGE	180.14	0.29	0.0
S26	STORAGE	180.47	0.30	0.0
S27	STORAGE	180.27	0.30	0.0
S30	STORAGE	185.15	0.30	0.0
S31	STORAGE	182.15	0.30	0.0
S32	STORAGE	181.09	0.30	0.0
S7	STORAGE	181.11	0.30	0.0
S8	STORAGE	181.02	0.30	0.0
S9	STORAGE	180.86	0.30	0.0
StreetA_Storage	STORAGE	180.47	0.30	0.0
StreetB_Storage1	STORAGE	180.01	0.29	0.0
StreetB_Storage2	STORAGE	179.86	0.29	0.0
SWM_Pond	STORAGE	177.02	1.89	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	% Slope	Roughness
4	RYCB6	STMH11	CONDUIT	22.4	0.8036	0.0130
C1	MDMH1	MDMH2	CONDUIT	13.7	8.4977	0.0130

C10	43	STMH22	CONDUIT	11.1	0.8116	0.0130
C11	STMH22	STMH7	CONDUIT	15.2	1.9082	0.0130
C12	CBMH8	STMH7	CONDUIT	50.5	1.0298	0.0130
C13	RYCB9	STMH21	CONDUIT	43.8	6.0613	0.0130
C14	STMH21	64	CONDUIT	14.9	0.2676	0.0130
C15	64	STMH3	CONDUIT	27.2	0.2947	0.0130
C16	RYCB8	STMH3	CONDUIT	65.0	1.9696	0.0130
C17	STMH3	46	CONDUIT	30.6	0.3919	0.0130
C18	46	47	CONDUIT	29.7	0.4040	0.0130
C19	47	STMH20	CONDUIT	14.4	0.9736	0.0130
C2	MDMH2	MDMH3	CONDUIT	172.8	1.1633	0.0130
C20	RYCB3	STMH20	CONDUIT	59.7	1.6920	0.0130
C21	STMH20	45	CONDUIT	26.4	0.3029	0.0130
C22	45	STMH19	CONDUIT	18.5	0.3245	0.0130
C23	STMH19	44	CONDUIT	21.1	0.2848	0.0130
C24	44	STMH7	CONDUIT	3.6	4.4120	0.0130
C25	STMH7	48	CONDUIT	6.3	0.3180	0.0130
C26	48	0	CONDUIT	45.5	0.3076	0.0130
C27	RYCB4	0	CONDUIT	5.5	13.2045	0.0130
C28	RYCB5	0	CONDUIT	5.5	13.0180	0.0130
C29	0	STMH6	CONDUIT	50.4	0.3968	0.0130
C3	MDMH3	U201_Outfall	CONDUIT	6.0	0.6667	0.0130
C30	STMH18	52	CONDUIT	2.8	0.7169	0.0130
C31	52	53	CONDUIT	30.5	0.5909	0.0130
C32	53	54	CONDUIT	32.9	0.5772	0.0130
C33	54	STMH17	CONDUIT	12.7	1.3355	0.0130
C34	STMH17	51	CONDUIT	10.7	1.0243	0.0130
C35	51	STMH10	CONDUIT	42.3	1.1122	0.0130
C36	RYCB7	STMH10	CONDUIT	32.5	1.2001	0.0130
C37	STMH10	50	CONDUIT	16.8	0.2971	0.0130

C38		50	STMH15	CONDUIT	18.1
0.2214	0.0130				
C39		STMH15	49	CONDUIT	10.3
0.2921	0.0130				
C4		RYCB1	STMH16	CONDUIT	44.9
1.2250	0.0130				
C40		49	STMH6	CONDUIT	2.1
2.8180	0.0130				
C41		STMH6	STMH5	CONDUIT	9.8
0.5102	0.0130				
C42		STMH5	55	CONDUIT	30.7
0.0978	0.0130				
C43		55	STMH4	CONDUIT	24.2
0.2063	0.0130				
C44		STMH4	56	CONDUIT	18.5
0.1082	0.0130				
C45		56	OGS	CONDUIT	10.7
0.0933	0.0130				
C46		STMH14	63	CONDUIT	15.1
0.5956	0.0130				
C47		63	STMH13	CONDUIT	8.2
0.8547	0.0130				
C48		STMH13	STMH12	CONDUIT	18.2
0.9891	0.0130				
C49		STMH12	61	CONDUIT	11.4
0.4371	0.0130				
C5		STMH16	42	CONDUIT	16.8
0.7729	0.0130				
C50		61	STMH11	CONDUIT	22.0
0.4546	0.0130				
C51		STMH11	60	CONDUIT	10.4
0.4794	0.0130				
C52		60	4	CONDUIT	23.5
0.4248	0.0130				
C53		STMH2	59	CONDUIT	7.5
4.8249	0.0130				
C54		59	STMH9	CONDUIT	32.3
7.4752	0.0130				
C55		STMH9	58	CONDUIT	45.7
2.7594	0.0130				
C56		58	57	CONDUIT	23.0
2.7437	0.0130				
C57		57	OGS	CONDUIT	48.8
2.8524	0.0130				
C58		OGS	SWM_Pond	CONDUIT	117.7
0.6457	0.0130				
C59		4	OGS	CONDUIT	14.8
2.6307	0.0130				
C6		42	41	CONDUIT	40.5
0.7406	0.0130				
C60		SWM_Pond	STMH1	CONDUIT	14.9
0.3356	0.0130				
C62		CB33	42	CONDUIT	5.5
8.2093	0.0130				
C63		CB31	41	CONDUIT	5.5
10.0504	0.0130				
C64		CB28	43	CONDUIT	5.5
12.2732	0.0130				
C65		CB44	64	CONDUIT	5.5
13.5780	0.0130				

C66		CB21	46	CONDUIT	5.5
15.6425	0.0130				
C67		CB23	47	CONDUIT	5.5
14.8896	0.0130				
C68		CB25	45	CONDUIT	5.5
15.2657	0.0130				
C69		DCB27	44	CONDUIT	5.5
13.9520	0.0130				
C7		41	STMH23	CONDUIT	18.5
1.1912	0.0130				
C70		DCB26	48	CONDUIT	5.5
17.3461	0.0130				
C71		CB19	52	CONDUIT	5.5
9.1287	0.0130				
C72		CB17	53	CONDUIT	5.5
9.6814	0.0130				
C73		DCB15	54	CONDUIT	5.5
7.4753	0.0130				
C74		CB2	51	CONDUIT	5.5
10.7895	0.0130				
C75		CB5	50	CONDUIT	5.5
15.0776	0.0130				
C76		DCB40	49	CONDUIT	5.5
13.9520	0.0130				
C77		CB39	55	CONDUIT	5.5
17.9172	0.0130				
C78		DCB37	56	CONDUIT	5.5
15.0776	0.0130				
C79		CB14	63	CONDUIT	5.5
9.1287	0.0130				
C8		RYCB2	STMH23	CONDUIT	46.0
1.3045	0.0130				
C80		CB12	61	CONDUIT	5.5
10.9746	0.0130				
C81		CB7	60	CONDUIT	5.5
11.1598	0.0130				
C82		CB42	4	CONDUIT	5.5
10.4197	0.0130				
C83		CB1	59	CONDUIT	5.5
7.8422	0.0130				
C84		CB3	58	CONDUIT	5.5
20.4124	0.0130				
C85		CB43	57	CONDUIT	5.5
12.2732	0.0130				
C9		STMH23	43	CONDUIT	29.6
0.5066	0.0130				
1		RYCB1_Storage	RYCB1	ORIFICE	
100		S27	CB12	ORIFICE	
119		RYCB4_Storage	RYCB5	ORIFICE	
12		StreetB_Storage2	CB42	ORIFICE	
120		RYCB5_Storage	RYCB4	ORIFICE	
13		StreetB_Storage2	CB39	ORIFICE	
14		StreetB_Storage2	CB7	ORIFICE	
151		S26	CB14	ORIFICE	
2		STMH1	O1	ORIFICE	
3		StreetA_Storage	DCB27	ORIFICE	
37		S12	CB33	ORIFICE	
38		RYCB2_Storage	RYCB2	ORIFICE	
39		RYCB3_Storage	RYCB3	ORIFICE	

40	RYCB8_Storage	RYCB8	ORIFICE
41	RYCB9_Storage	RYCB9	ORIFICE
42	RYCB7_Storage	RYCB7	ORIFICE
43	A211_Storage	CBMH8	ORIFICE
5	RYCB6_Storage	RYCB6	ORIFICE
6	StreetA_Storage	CB25	ORIFICE
7	StreetA_Storage	DCB26	ORIFICE
8	StreetA_Storage	CB28	ORIFICE
80	S13	CB31	ORIFICE
85	S9	CB23	ORIFICE
86	S8	CB21	ORIFICE
87	S7	CB44	ORIFICE
88	S19	CB19	ORIFICE
89	S20	CB17	ORIFICE
90	S30	CB1	ORIFICE
91	S31	CB3	ORIFICE
92	S32	CB43	ORIFICE
94	StreetB_Storage2	DCB37	ORIFICE
96	StreetB_Storage1	DCB40	ORIFICE
97	S22	CB2	ORIFICE
98	S23	CB5	ORIFICE
99	S21	DCB15	ORIFICE
10	S13	StreetA_Storage	WEIR
18	S27	StreetB_Storage2	WEIR
19	S32	StreetB_Storage2	WEIR
9	S9	StreetA_Storage	WEIR
A211_Weir	A211_Storage	StreetA_Storage	WEIR
RYCB1_Weir	RYCB1_Storage	RYCB2_Storage	WEIR
RYCB2_Weir	RYCB2_Storage	A211_Storage	WEIR
RYCB3_Weir	RYCB3_Storage	A211_Storage	WEIR
RYCB4_Weir	RYCB4_Storage	StreetB_Storage1	WEIR
RYCB5_Weir	RYCB5_Storage	StreetB_Storage1	WEIR
RYCB6_Weir	RYCB6_Storage	StreetB_Storage2	WEIR
RYCB7_Weir	RYCB7_Storage	RYCB6_Storage	WEIR
RYCB8_Weir	RYCB8_Storage	RYCB3_Storage	WEIR
RYCB9_Weir	RYCB9_Storage	RYCB8_Storage	WEIR
StreetA_Weir	StreetA_Storage	RYCB4_Storage	WEIR
StreetB_Weir1	StreetB_Storage1	StreetB_Storage2	WEIR
StreetB_Weir2	StreetB_Storage2	SWM_Pond	WEIR
SWM_Pond_Weir	SWM_Pond	SWM_Pond_Outfall	WEIR
W17	S19	S20	WEIR
W18	S20	S21	WEIR
W19	S21	S22	WEIR
W20	S22	S23	WEIR
W21	S23	StreetB_Storage1	WEIR
W27	S26	S27	WEIR
W30	S30	S31	WEIR
W31	S31	S32	WEIR
W6	S12	S13	WEIR
W8	S7	S8	WEIR
W9	S8	S9	WEIR

****
Cross Section Summary
****

		Full	Full	Hyd.	Max.	No. of

Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
4	CIRCULAR	0.30	0.07	0.07	0.30	1	0.09
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.83
C10	CIRCULAR	0.45	0.16	0.11	0.45	1	0.26
C11	CIRCULAR	0.45	0.16	0.11	0.45	1	0.39
C12	CIRCULAR	0.45	0.16	0.11	0.45	1	0.29
C13	CIRCULAR	0.30	0.07	0.07	0.30	1	0.24
C14	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C15	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C16	CIRCULAR	0.30	0.07	0.07	0.30	1	0.14
C17	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C18	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C19	CIRCULAR	0.45	0.16	0.11	0.45	1	0.28
C2	CIRCULAR	0.60	0.28	0.15	0.60	1	0.66
C20	CIRCULAR	0.38	0.11	0.09	0.38	1	0.23
C21	CIRCULAR	0.53	0.22	0.13	0.53	1	0.24
C22	CIRCULAR	0.53	0.22	0.13	0.53	1	0.25
C23	CIRCULAR	0.53	0.22	0.13	0.53	1	0.23
C24	CIRCULAR	0.53	0.22	0.13	0.53	1	0.90
C25	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C26	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C27	CIRCULAR	0.25	0.05	0.06	0.25	1	0.22
C28	CIRCULAR	0.25	0.05	0.06	0.25	1	0.21
C29	CIRCULAR	0.68	0.36	0.17	0.68	1	0.53
C3	CIRCULAR	0.68	0.36	0.17	0.68	1	0.69
C30	CIRCULAR	0.30	0.07	0.07	0.30	1	0.08
C31	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C32	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C33	CIRCULAR	0.30	0.07	0.07	0.30	1	0.11

C34	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C35	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C36	CIRCULAR	0.25	0.05	0.06	0.25	1
0.07						
C37	CIRCULAR	0.45	0.16	0.11	0.45	1
0.16						
C38	CIRCULAR	0.45	0.16	0.11	0.45	1
0.13						
C39	CIRCULAR	0.45	0.16	0.11	0.45	1
0.15						
C4	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C40	CIRCULAR	0.45	0.16	0.11	0.45	1
0.48						
C41	CIRCULAR	0.90	0.64	0.23	0.90	1
1.29						
C42	CIRCULAR	0.90	0.64	0.23	0.90	1
0.57						
C43	CIRCULAR	0.90	0.64	0.23	0.90	1
0.82						
C44	CIRCULAR	0.90	0.64	0.23	0.90	1
0.60						
C45	CIRCULAR	0.90	0.64	0.23	0.90	1
0.55						
C46	CIRCULAR	0.30	0.07	0.07	0.30	1
0.07						
C47	CIRCULAR	0.30	0.07	0.07	0.30	1
0.09						
C48	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C49	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C5	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C50	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C51	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C52	CIRCULAR	0.38	0.11	0.09	0.38	1
0.11						
C53	CIRCULAR	0.25	0.05	0.06	0.25	1
0.13						
C54	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C55	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C56	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C57	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C58	CIRCULAR	1.05	0.87	0.26	1.05	1
2.19						
C59	CIRCULAR	0.38	0.11	0.09	0.38	1
0.28						
C6	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C60	CIRCULAR	0.68	0.36	0.17	0.68	1
0.49						

C62	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C63	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C64	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C65	CIRCULAR	0.20	0.03	0.05	0.20	1
0.12						
C66	CIRCULAR	0.25	0.05	0.06	0.25	1
0.24						
C67	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C68	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C69	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C7	CIRCULAR	0.38	0.11	0.09	0.38	1
0.19						
C70	CIRCULAR	0.25	0.05	0.06	0.25	1
0.25						
C71	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C72	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C73	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C74	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C75	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C76	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C77	CIRCULAR	0.20	0.03	0.05	0.20	1
0.14						
C78	CIRCULAR	0.25	0.05	0.06	0.25	1
0.23						
C79	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C8	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C80	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C81	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C82	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C83	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C84	CIRCULAR	0.20	0.03	0.05	0.20	1
0.15						
C85	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C9	CIRCULAR	0.45	0.16	0.11	0.45	1
0.20						

****

NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,

not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 12/11/2020 00:00:00
Ending Date 12/11/2020 03:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:01:00
Routing Time Step ..... 30.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 1
Head Tolerance ..... 0.001500 m

**********	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
**********	---	---
Total Precipitation	0.913	55.362
Evaporation Loss	0.000	0.000
Infiltration Loss	0.314	19.055
Surface Runoff	0.481	29.167
Final Storage	0.118	7.177
Continuity Error (%)	-0.067	

**********	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
**********	---	---
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.481	4.808
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.313	3.133
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.168	1.679
Continuity Error (%)	-0.096	

```
  *************************
  Highest Continuity Errors
  *************************
  Node S9 (-147.65%)
  Node CB25 (-22.53%)
  Node S8 (-17.19%)
  Node CB44 (-8.29%)
  Node CB23 (-8.04%)


  ***************************
  Time-Step Critical Elements
  ***************************
  Link C40 (83.43%)
  Link C24 (5.45%)
  Link C78 (2.07%)
  Link C45 (1.97%)
  Link C70 (1.89%)


  *******************************
  Highest Flow Instability Indexes
  *******************************
  Link C40 (14)
  Link C39 (10)
  Link C41 (9)
  Link 88 (9)
  Link C45 (7)


  *************************
  Routing Time Step Summary
  *************************
  Minimum Time Step           :     0.50 sec
  Average Time Step           :     0.83 sec
  Maximum Time Step           :    30.00 sec
  Percent in Steady State     :     0.00
  Average Iterations per Step :     2.55
  Percent Not Converging      :     6.23
  Time Step Frequencies       :
     30.000 - 13.228 sec      :     0.04 %
     13.228 -  5.833 sec      :     0.00 %
      5.833 -  2.572 sec      :     0.31 %
      2.572 -  1.134 sec      :    13.14 %
      1.134 -  0.500 sec      :    86.52 %


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ---------------------------------------------------------------------------------------
-----------------------------------------
                             Total      Total      Total      Total     Imperv
Perv      Total       Total     Peak  Runoff
```

Subcatchment	Precip mm	Runon mm	Evap mm	Infil mm	Runoff mm	Runoff mm	Runoff 10^6 ltr	Runoff CMS	Coeff
A201	55.36	13.20	0.00	36.70	0.00	22.40	22.40	0.10	0.05	0.327
A202	55.36	43.66	0.00	10.15	44.19	37.95	82.14	0.18	0.07	0.829
A203	55.36	12.14	0.00	36.70	0.00	20.97	20.97	0.11	0.04	0.311
A204	55.36	133.31	0.00	10.15	85.36	88.05	173.41	0.14	0.05	0.919
A205	55.36	146.36	0.00	10.15	91.46	95.92	187.38	0.09	0.03	0.929
A206	55.36	121.49	0.00	27.52	43.68	86.87	130.55	0.16	0.03	0.738
A207	55.36	519.10	0.00	10.15	261.82	297.17	558.99	0.17	0.04	0.973
A208	55.36	6.79	0.00	27.52	15.13	11.11	26.24	0.40	0.29	0.422
A209	55.36	994.95	0.00	10.15	479.35	556.04	1035.39	0.41	0.30	0.986
A210	55.36	11.38	0.00	27.52	16.29	14.89	31.18	0.42	0.29	0.467
A211	55.36	222.70	0.00	10.15	126.12	135.56	261.68	0.50	0.31	0.941
A212	55.36	0.00	0.00	10.15	24.31	14.63	38.94	0.96	0.70	0.703
A213	55.36	0.00	0.00	10.15	24.46	16.24	40.71	0.22	0.19	0.735
A214	55.36	0.00	0.00	10.15	24.37	15.33	39.70	0.39	0.30	0.717
A215	55.36	0.00	0.00	9.96	24.89	14.98	39.86	0.43	0.34	0.720
A216	55.36	0.00	0.00	6.68	34.50	11.36	45.86	0.11	0.13	0.828
A217	55.36	0.00	0.00	9.60	25.83	13.70	39.53	0.73	0.54	0.714
A218	55.36	0.00	0.00	10.15	24.36	15.17	39.53	0.21	0.16	0.714
A219	55.36	0.00	0.00	18.69	0.00	31.89	31.89	0.02	0.02	0.576
A220	55.36	0.00	0.00	26.84	11.53	12.84	24.38	0.14	0.10	0.440
EXT201	55.36	0.00	0.00	1.35	38.41	13.26	51.67	0.06	0.07	0.933
EXT202	55.36	0.00	0.00	1.35	38.41	13.26	51.67	0.06	0.08	0.933
EXT203	55.36	0.00	0.00	36.70	0.00	7.75	7.75	0.07	0.01	0.140
EXT204	55.36	0.00	0.00	1.35	38.41	13.26	51.67	0.06	0.08	0.933
EXT205	55.36	4.92	0.00	36.70	0.00	11.63	11.63	0.15	0.03	0.193
EXT206	55.36	0.00	0.00	1.35	38.41	13.26	51.67	0.10	0.13	0.933
EXT207	55.36	0.00	0.00	1.35	38.41	13.26	51.67	0.16	0.20	0.933

```
  U201                       55.36       0.00       0.00      34.17       0.00
13.04      13.04        0.06     0.01    0.236
  U202                       55.36       0.00       0.00      10.15      24.59
17.45      42.04        0.03     0.04    0.759
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****
Node Depth Summary
****

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
0	JUNCTION	0.34	1.72	179.86	0 01:11	1.71
4	JUNCTION	0.06	0.35	178.52	0 01:11	0.33
41	JUNCTION	0.09	2.26	181.31	0 01:09	1.41
42	JUNCTION	0.08	1.94	181.29	0 01:10	1.13
43	JUNCTION	0.16	1.75	180.43	0 01:11	1.73
44	JUNCTION	0.21	1.88	180.34	0 01:11	1.85
45	JUNCTION	0.21	2.06	180.64	0 01:10	1.74
46	JUNCTION	0.16	2.06	180.98	0 01:10	1.44
47	JUNCTION	0.15	2.06	180.86	0 01:09	1.54
48	JUNCTION	0.37	2.01	180.29	0 01:11	1.99
49	JUNCTION	0.32	1.29	179.29	0 01:11	1.27
50	JUNCTION	0.28	1.55	179.62	0 01:11	1.53
51	JUNCTION	0.19	1.84	180.43	0 01:11	1.84
52	JUNCTION	0.23	1.81	181.05	0 01:09	1.79
53	JUNCTION	0.23	1.90	180.96	0 01:10	1.90
54	JUNCTION	0.19	1.85	180.72	0 01:10	1.85
55	JUNCTION	0.41	1.13	178.99	0 01:11	1.07
56	JUNCTION	0.42	1.02	178.81	0 01:15	0.88
57	JUNCTION	0.00	0.00	179.17	0 00:00	0.00
58	JUNCTION	0.00	0.00	179.80	0 00:00	0.00
59	JUNCTION	0.00	0.00	183.47	0 00:00	0.00
60	JUNCTION	0.01	0.27	178.54	0 01:10	0.25
61	JUNCTION	0.00	0.13	178.55	0 01:11	0.09
63	JUNCTION	0.00	0.00	178.72	0 00:00	0.00
64	JUNCTION	0.09	3.12	182.24	0 01:10	1.31
CB1	JUNCTION	0.00	0.00	183.90	0 00:00	0.00
CB12	JUNCTION	0.00	0.00	179.02	0 00:00	0.00
CB14	JUNCTION	0.00	0.00	179.22	0 00:00	0.00
CB17	JUNCTION	0.08	1.43	181.02	0 01:09	1.42
CB19	JUNCTION	0.16	1.42	181.16	0 01:09	1.41
CB2	JUNCTION	0.05	1.30	180.48	0 01:08	1.27
CB21	JUNCTION	0.01	1.32	181.09	0 01:10	0.59
CB23	JUNCTION	0.02	1.29	180.90	0 01:10	0.73
CB25	JUNCTION	0.03	1.49	180.90	0 01:10	0.91
CB28	JUNCTION	0.03	1.27	180.62	0 01:11	1.27
CB3	JUNCTION	0.00	0.00	180.90	0 00:00	0.00
CB31	JUNCTION	0.02	1.12	180.72	0 01:11	0.87
CB33	JUNCTION	0.01	1.08	180.88	0 01:11	0.68
CB39	JUNCTION	0.00	0.12	178.95	0 01:11	0.10
CB42	JUNCTION	0.00	0.05	178.79	0 01:11	0.05
CB43	JUNCTION	0.00	0.00	179.84	0 00:00	0.00
CB44	JUNCTION	0.01	1.29	181.15	0 01:10	0.60

CB5	JUNCTION	0.03	1.32	180.21	0	01:12	1.31
CB7	JUNCTION	0.00	0.00	178.88	0	00:00	0.00
CBMH8	JUNCTION	0.20	1.80	180.62	0	01:11	1.79
DCB15	JUNCTION	0.07	1.46	180.74	0	01:10	1.45
DCB26	JUNCTION	0.12	1.35	180.57	0	01:12	1.34
DCB27	JUNCTION	0.12	1.35	180.57	0	01:12	1.34
DCB37	JUNCTION	0.08	1.18	179.79	0	01:11	1.15
DCB40	JUNCTION	0.07	1.04	179.80	0	01:12	1.04
MDMH1	JUNCTION	0.00	0.00	180.92	0	00:00	0.00
MDMH2	JUNCTION	0.00	0.00	179.76	0	00:00	0.00
MDMH3	JUNCTION	0.00	0.00	177.75	0	00:00	0.00
OGS	JUNCTION	0.39	0.73	178.51	0	01:12	0.73
RYCB1	JUNCTION	0.05	0.78	180.81	0	01:11	0.52
RYCB2	JUNCTION	0.13	1.38	180.81	0	01:11	1.36
RYCB3	JUNCTION	0.07	1.91	181.58	0	01:11	1.03
RYCB4	JUNCTION	0.03	1.01	179.87	0	01:11	0.99
RYCB5	JUNCTION	0.05	1.40	180.25	0	01:12	1.39
RYCB6	JUNCTION	0.00	0.17	178.67	0	01:10	0.12
RYCB7	JUNCTION	0.12	1.73	180.24	0	01:10	1.72
RYCB8	JUNCTION	0.08	0.29	180.61	0	01:11	0.24
RYCB9	JUNCTION	0.02	0.04	181.85	0	01:10	0.04
STMH1	JUNCTION	0.94	1.28	178.25	0	01:55	1.28
STMH10	JUNCTION	0.25	1.58	179.70	0	01:11	1.57
STMH11	JUNCTION	0.00	0.23	178.55	0	01:11	0.23
STMH12	JUNCTION	0.00	0.09	178.56	0	01:11	0.08
STMH13	JUNCTION	0.00	0.00	178.65	0	00:00	0.00
STMH14	JUNCTION	0.00	0.00	178.81	0	00:00	0.00
STMH15	JUNCTION	0.30	1.38	179.41	0	01:11	1.36
STMH16	JUNCTION	0.07	2.79	182.27	0	01:10	1.01
STMH17	JUNCTION	0.20	1.86	180.56	0	01:11	1.85
STMH18	JUNCTION	0.21	1.78	181.04	0	01:09	1.77
STMH19	JUNCTION	0.22	1.92	180.44	0	01:11	1.80
STMH2	JUNCTION	0.00	0.00	183.83	0	00:00	0.00
STMH20	JUNCTION	0.21	2.02	180.68	0	01:11	1.67
STMH21	JUNCTION	0.08	2.73	181.89	0	01:10	1.26
STMH22	JUNCTION	0.16	1.79	180.38	0	01:11	1.77
STMH23	JUNCTION	0.16	1.83	180.66	0	01:09	1.63
STMH3	JUNCTION	0.15	2.12	181.16	0	01:10	1.36
STMH4	JUNCTION	0.43	1.09	178.90	0	01:15	0.95
STMH5	JUNCTION	0.43	1.27	179.16	0	01:11	1.24
STMH6	JUNCTION	0.38	1.29	179.23	0	01:11	1.26
STMH7	JUNCTION	0.37	2.03	180.33	0	01:11	2.00
STMH9	JUNCTION	0.00	0.00	181.06	0	00:00	0.00
O1	OUTFALL	0.00	0.00	176.95	0	00:00	0.00
SWM_Pond_Outfall	OUTFALL	0.00	0.00	178.90	0	00:00	0.00
U201_Outfall	OUTFALL	0.00	0.00	177.71	0	00:00	0.00
U202_Outfall	OUTFALL	0.00	0.00	183.25	0	00:00	0.00
A211_Storage	STORAGE	0.06	0.20	180.77	0	01:11	0.19
RYCB1_Storage	STORAGE	0.01	0.03	181.66	0	01:10	0.03
RYCB2_Storage	STORAGE	0.03	0.08	181.16	0	01:10	0.07
RYCB3_Storage	STORAGE	0.02	0.09	181.62	0	01:11	0.08
RYCB4_Storage	STORAGE	0.01	0.26	180.37	0	01:12	0.26
RYCB5_Storage	STORAGE	0.00	0.00	180.11	0	00:00	0.00
RYCB6_Storage	STORAGE	0.00	0.04	180.09	0	01:10	0.04
RYCB7_Storage	STORAGE	0.02	0.38	180.33	0	01:10	0.38
RYCB8_Storage	STORAGE	0.03	0.05	182.49	0	01:10	0.05
RYCB9_Storage	STORAGE	0.01	0.02	183.38	0	01:10	0.02

S12	STORAGE	0.00	0.00	181.05	0	00:00	0.00
S13	STORAGE	0.00	0.00	180.85	0	00:00	0.00
S19	STORAGE	0.04	0.23	181.22	0	01:10	0.23
S20	STORAGE	0.01	0.22	181.06	0	01:10	0.22
S21	STORAGE	0.01	0.25	180.78	0	01:10	0.25
S22	STORAGE	0.00	0.05	180.48	0	01:10	0.05
S23	STORAGE	0.00	0.16	180.30	0	01:11	0.16
S26	STORAGE	0.00	0.00	180.47	0	00:00	0.00
S27	STORAGE	0.00	0.00	180.27	0	00:00	0.00
S30	STORAGE	0.00	0.00	185.15	0	00:00	0.00
S31	STORAGE	0.00	0.00	182.15	0	00:00	0.00
S32	STORAGE	0.00	0.00	181.09	0	00:00	0.00
S7	STORAGE	0.00	0.01	181.12	0	01:10	0.01
S8	STORAGE	0.00	0.01	181.03	0	01:10	0.01
S9	STORAGE	0.00	0.02	180.88	0	01:10	0.01
StreetA_Storage	STORAGE	0.04	0.20	180.67	0	01:12	0.20
StreetB_Storage1	STORAGE	0.03	0.12	180.13	0	01:11	0.12
StreetB_Storage2	STORAGE	0.04	0.15	180.01	0	01:11	0.15
SWM_Pond	STORAGE	0.93	1.27	178.29	0	01:55	1.27

****
Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow 10^6 ltr	Flow Balance Error Percent
0	JUNCTION	0.000	0.985	0 01:14	0	2.4	0.190
4	JUNCTION	0.000	0.054	0 01:11	0	0.0158	-0.194
41	JUNCTION	0.000	0.182	0 01:09	0	0.0734	0.122
42	JUNCTION	0.000	0.133	0 01:10	0	0.0674	0.214
43	JUNCTION	0.000	0.181	0 01:12	0	0.347	0.101
44	JUNCTION	0.000	0.290	0 01:17	0	0.85	-0.003
45	JUNCTION	0.000	0.182	0 01:09	0	0.417	0.222
46	JUNCTION	0.000	0.261	0 01:09	0	0.281	0.333
47	JUNCTION	0.000	0.275	0 01:09	0	0.287	0.136
48	JUNCTION	0.000	0.811	0 01:17	0	2.31	0.105
49	JUNCTION	0.000	0.504	0 01:11	0	0.818	-1.485

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  50                    JUNCTION     0.000    0.341     0  01:09           0
0.502       0.105
  51                    JUNCTION     0.000    0.154     0  01:09           0
0.357       0.091
  52                    JUNCTION     0.000    0.127     0  01:07           0
0.3       0.092
  53                    JUNCTION     0.000    0.149     0  01:08           0
0.329       0.150
  54                    JUNCTION     0.000    0.149     0  01:08           0
0.35       0.066
  55                    JUNCTION     0.000    1.475     0  01:11           0
3.13       0.155
  56                    JUNCTION     0.000    1.754     0  01:11           0
3.51      -0.011
  57                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  58                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  59                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  60                    JUNCTION     0.000    0.039     0  01:10           0
0.00577       0.519
  61                    JUNCTION     0.000    0.022     0  01:11           0
0.00113       2.331
  63                    JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  64                    JUNCTION     0.000    0.269     0  01:10           0
0.0413       0.522
  CB1                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB12                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB14                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB17                  JUNCTION     0.000    0.070     0  01:08           0
0.0293       0.005
  CB19                  JUNCTION     0.000    0.129     0  01:07           0
0.3      -0.019
  CB2                   JUNCTION     0.000    0.034     0  01:09           0
0.00813      -0.230
  CB21                  JUNCTION     0.000    0.086     0  01:09           0
0.00137      -1.212
  CB23                  JUNCTION     0.000    0.047     0  01:09           0
0.00128      -7.444
  CB25                  JUNCTION     0.000    0.041     0  01:10           0
0.00168     -18.384
  CB28                  JUNCTION     0.000    0.073     0  01:13           0
0.0218       0.012
  CB3                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB31                  JUNCTION     0.000    0.062     0  01:09           0
0.000966      -0.378
  CB33                  JUNCTION     0.000    0.052     0  01:10           0
0.000924      -0.920
  CB39                  JUNCTION     0.000    0.006     0  01:11           0
0.000342       0.539
  CB42                  JUNCTION     0.000    0.017     0  01:11           0
0.00332       0.001
  CB43                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
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  CB44                  JUNCTION     0.000    0.115     0  01:10           0
0.00123      -7.654
  CB5                   JUNCTION     0.000    0.124     0  01:09           0
0.0358        0.024
  CB7                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CBMH8                 JUNCTION     0.000    0.325     0  01:10           0
0.693        0.125
  DCB15                 JUNCTION     0.000    0.055     0  01:15           0
0.0215      -0.131
  DCB26                 JUNCTION     0.000    0.249     0  01:09           0
0.448        0.022
  DCB27                 JUNCTION     0.000    0.248     0  01:09           0
0.443        0.037
  DCB37                 JUNCTION     0.000    0.267     0  01:11           0
0.392        0.010
  DCB40                 JUNCTION     0.000    0.184     0  01:11           0
0.228        0.031
  MDMH1                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH2                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH3                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  OGS                   JUNCTION     0.000    1.908     0  01:12           0
3.53        0.553
  RYCB1                 JUNCTION     0.000    0.047     0  01:11           0
0.0598        0.119
  RYCB2                 JUNCTION     0.000    0.090     0  01:16           0
0.26        0.111
  RYCB3                 JUNCTION     0.000    0.136     0  01:10           0
0.136        0.064
  RYCB4                 JUNCTION     0.000    0.025     0  01:09           0
0.000836        0.611
  RYCB5                 JUNCTION     0.000    0.195     0  01:10           0
0.0902      -0.023
  RYCB6                 JUNCTION     0.000    0.042     0  01:10           0
0.00361      -1.752
  RYCB7                 JUNCTION     0.000    0.103     0  01:08           0
0.111      -0.022
  RYCB8                 JUNCTION     0.000    0.053     0  01:10           0
0.23        0.219
  RYCB9                 JUNCTION     0.000    0.009     0  01:10           0
0.0307        0.159
  STMH1                 JUNCTION     0.000    0.431     0  01:55           0
3.05        0.383
  STMH10                JUNCTION     0.000    0.251     0  01:09           0
0.467        0.142
  STMH11                JUNCTION     0.000    0.047     0  01:10           0
0.00479        1.627
  STMH12                JUNCTION     0.000    0.008     0  01:11           0
0.000267        6.322
  STMH13                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH14                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH15                JUNCTION     0.000    0.341     0  01:09           0
0.501      -0.023
  STMH16                JUNCTION     0.000    0.117     0  01:10           0
0.062        0.058
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STMH17	JUNCTION	0.000	0.146	0	01:08	0	0.349
0.037							
STMH18	JUNCTION	0.000	0.006	0	01:06	0	0.000462
-1.074							
STMH19	JUNCTION	0.000	0.182	0	01:09	0	0.419
0.179							
STMH2	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
STMH20	JUNCTION	0.000	0.252	0	01:09	0	0.42
0.376							
STMH21	JUNCTION	0.000	0.234	0	01:10	0	0.0334
-0.212							
STMH22	JUNCTION	0.000	0.181	0	01:12	0	0.346
0.070							
STMH23	JUNCTION	0.000	0.166	0	01:09	0	0.33
0.120							
STMH3	JUNCTION	0.000	0.251	0	01:10	0	0.275
0.561							
STMH4	JUNCTION	0.000	1.475	0	01:11	0	3.12
0.111							
STMH5	JUNCTION	0.000	1.467	0	01:12	0	3.13
0.099							
STMH6	JUNCTION	0.000	1.468	0	01:11	0	3.22
0.093							
STMH7	JUNCTION	0.000	0.668	0	01:11	0	1.87
0.127							
STMH9	JUNCTION	0.000	0.000	0	00:00	0	0
0.000 ltr							
O1	OUTFALL	0.000	0.431	0	01:55	0	3.04
0.000							
SWM_Pond_Outfall	OUTFALL	0.000	0.000	0	00:00	0	0
0.000 ltr							
U201_Outfall	OUTFALL	0.013	0.013	0	01:26	0.0572	0.0572
0.000							
U202_Outfall	OUTFALL	0.039	0.039	0	01:10	0.0336	0.0336
0.000							
A211_Storage	STORAGE	0.314	0.564	0	01:11	0.497	0.775
0.005							
RYCB1_Storage	STORAGE	0.074	0.074	0	01:10	0.18	0.18
0.005							
RYCB2_Storage	STORAGE	0.050	0.090	0	01:16	0.139	0.26
0.009							
RYCB3_Storage	STORAGE	0.302	0.302	0	01:10	0.414	0.414
0.003							
RYCB4_Storage	STORAGE	0.000	0.334	0	01:12	0	0.125
0.020							
RYCB5_Storage	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
RYCB6_Storage	STORAGE	0.000	0.042	0	01:10	0	0.00361
0.001							
RYCB7_Storage	STORAGE	0.129	0.129	0	01:10	0.115	0.115
0.063							
RYCB8_Storage	STORAGE	0.035	0.053	0	01:10	0.167	0.23
0.014							
RYCB9_Storage	STORAGE	0.026	0.026	0	01:10	0.0934	0.0934
0.008							
S12	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S13	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							

S19	STORAGE	0.304	0.304	0	01:10	0.393	0.393
0.003							
S20	STORAGE	0.000	0.256	0	01:10	0	0.0927
0.009							
S21	STORAGE	0.000	0.223	0	01:10	0	0.0639
0.018							
S22	STORAGE	0.000	0.193	0	01:10	0	0.0431
0.035							
S23	STORAGE	0.000	0.168	0	01:10	0	0.0357
0.403							
S26	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S27	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S30	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S31	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S32	STORAGE	0.000	0.000	0	00:00	0	0
0.000 ltr							
S7	STORAGE	0.000	0.025	0	01:10	0	9.64e-05
20.338							
S8	STORAGE	0.000	0.020	0	01:10	0	4.94e-05
-14.668							
S9	STORAGE	0.000	0.018	0	01:10	0	4.6e-05
-59.621							
StreetA_Storage	STORAGE	0.704	1.246	0	01:10	0.957	1.04
0.024							
StreetB_Storage1	STORAGE	0.525	0.561	0	01:11	0.658	0.693
0.002							
StreetB_Storage2	STORAGE	0.539	0.887	0	01:10	0.731	1.2
0.011							
SWM_Pond	STORAGE	0.285	2.540	0	01:12	0.374	4.67
1.261							

****
Node Surcharge Summary
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Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
0	JUNCTION	0.31	1.046	0.269
41	JUNCTION	0.18	1.880	0.000
42	JUNCTION	0.14	1.563	0.000
43	JUNCTION	0.28	1.299	0.221
44	JUNCTION	0.32	1.358	0.177
45	JUNCTION	0.28	1.533	0.092
46	JUNCTION	0.20	1.607	0.093
47	JUNCTION	0.23	1.615	0.045
48	JUNCTION	0.32	1.333	0.192
49	JUNCTION	0.51	0.839	0.781
50	JUNCTION	0.43	1.099	0.571
51	JUNCTION	0.36	1.541	0.049
52	JUNCTION	0.33	1.505	0.000

53	JUNCTION	0.32	1.604	0.000
54	JUNCTION	0.30	1.555	0.000
55	JUNCTION	0.12	0.230	1.130
56	JUNCTION	0.01	0.118	1.102
64	JUNCTION	0.14	2.675	0.000
CB17	JUNCTION	0.20	0.828	0.000
CB19	JUNCTION	0.27	0.822	0.000
CB2	JUNCTION	0.16	0.702	0.000
CB21	JUNCTION	0.02	0.716	0.000
CB23	JUNCTION	0.06	0.686	0.000
CB25	JUNCTION	0.06	0.703	0.000
CB28	JUNCTION	0.10	0.540	0.000
CB31	JUNCTION	0.08	0.520	0.130
CB33	JUNCTION	0.02	0.478	0.172
CB44	JUNCTION	0.01	0.693	0.000
CB5	JUNCTION	0.08	0.725	0.000
CBMH8	JUNCTION	0.22	1.204	0.000
DCB15	JUNCTION	0.19	0.856	0.000
DCB26	JUNCTION	0.17	0.751	0.000
DCB27	JUNCTION	0.17	0.755	0.000
DCB37	JUNCTION	0.09	0.585	0.065
DCB40	JUNCTION	0.08	0.443	0.207
RYCB1	JUNCTION	0.01	0.180	0.820
RYCB2	JUNCTION	0.15	0.784	0.266
RYCB3	JUNCTION	0.05	1.305	0.000
RYCB4	JUNCTION	0.13	0.407	0.243
RYCB5	JUNCTION	0.14	0.805	0.000
RYCB7	JUNCTION	0.17	1.134	0.000
STMH1	JUNCTION	1.82	0.603	1.212
STMH10	JUNCTION	0.41	1.133	0.577
STMH15	JUNCTION	0.46	0.929	0.681
STMH16	JUNCTION	0.13	2.418	0.000
STMH17	JUNCTION	0.35	1.565	0.085
STMH18	JUNCTION	0.33	1.478	0.022
STMH19	JUNCTION	0.30	1.399	0.146
STMH20	JUNCTION	0.25	1.496	0.149
STMH21	JUNCTION	0.14	2.284	0.000
STMH22	JUNCTION	0.31	1.343	0.187
STMH23	JUNCTION	0.23	1.383	0.117
STMH3	JUNCTION	0.16	1.672	0.058
STMH4	JUNCTION	0.07	0.194	1.076
STMH5	JUNCTION	0.14	0.373	0.937
STMH6	JUNCTION	0.14	0.385	0.845
STMH7	JUNCTION	0.32	1.357	0.198

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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	Average Volume	Avg Pcnt	Evap Pcnt	Exfil Pcnt	Maximum Volume	Max Pcnt	Time of Max Occurrence	Maximum Outflow
Storage Unit	1000 m3	Full	Loss	Loss	1000 m3	Full	days hr:min	CMS
A211_Storage	0.000	0	0	0	0.000	9	0 01:11	0.562
RYCB1_Storage	0.000	0	0	0	0.000	0	0 01:10	0.074
RYCB2_Storage	0.000	0	0	0	0.000	1	0 01:10	0.090
RYCB3_Storage	0.000	0	0	0	0.000	1	0 01:11	0.317
RYCB4_Storage	0.000	0	0	0	0.001	20	0 01:12	0.337
RYCB5_Storage	0.000	0	0	0	0.000	0	0 00:00	0.000
RYCB6_Storage	0.000	0	0	0	0.000	0	0 01:10	0.042
RYCB7_Storage	0.000	1	0	0	0.002	91	0 01:10	0.128
RYCB8_Storage	0.000	0	0	0	0.000	0	0 01:10	0.053
RYCB9_Storage	0.000	0	0	0	0.000	0	0 01:10	0.026
S12	0.000	0	0	0	0.000	0	0 00:00	0.000
S13	0.000	0	0	0	0.000	0	0 00:00	0.000
S19	0.000	13	0	0	0.002	76	0 01:10	0.304
S20	0.000	3	0	0	0.002	73	0 01:10	0.256
S21	0.000	2	0	0	0.002	82	0 01:10	0.221
S22	0.000	0	0	0	0.000	16	0 01:10	0.193
S23	0.000	0	0	0	0.005	18	0 01:11	0.124
S26	0.000	0	0	0	0.000	0	0 00:00	0.000
S27	0.000	0	0	0	0.000	0	0 00:00	0.000
S30	0.000	0	0	0	0.000	0	0 00:00	0.000
S31	0.000	0	0	0	0.000	0	0 00:00	0.000
S32	0.000	0	0	0	0.000	0	0 00:00	0.000
S7	0.000	0	0	0	0.000	3	0 01:10	0.006
S8	0.000	0	0	0	0.000	2	0 01:10	0.005
S9	0.000	0	0	0	0.000	4	0 01:10	0.008

StreetA_Storage	0.002	1	0	0	0.058	30	0
01:12 0.691							
StreetB_Storage1	0.000	0	0	0	0.002	7	0
01:11 0.558							
StreetB_Storage2	0.001	1	0	0	0.032	15	0
01:11 0.822							
SWM_Pond	1.357	32	0	0	2.088	50	0
01:55 0.431							

****
Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
O1	99.87	0.329	0.431	3.042
SWM_Pond_Outfall	0.00	0.000	0.000	0.000
U201_Outfall	73.19	0.009	0.013	0.057
U202_Outfall	99.97	0.003	0.039	0.034
System	68.26	0.341	0.443	3.133

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
4	CONDUIT	0.047	0 01:10	1.62	0.54	0.58
C1	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C10	CONDUIT	0.181	0 01:12	1.53	0.70	1.00
C11	CONDUIT	0.181	0 01:12	1.14	0.46	1.00
C12	CONDUIT	0.324	0 01:10	2.04	1.12	1.00
C13	CONDUIT	0.009	0 01:10	1.00	0.04	0.56
C14	CONDUIT	0.226	0 01:10	1.71	1.53	1.00
C15	CONDUIT	0.220	0 01:10	1.52	1.42	1.00
C16	CONDUIT	0.053	0 01:10	1.51	0.39	0.99
C17	CONDUIT	0.199	0 01:10	1.43	1.12	1.00
C18	CONDUIT	0.218	0 01:09	1.45	1.20	1.00
C19	CONDUIT	0.241	0 01:09	1.56	0.86	1.00
C2	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C20	CONDUIT	0.133	0 01:11	1.21	0.58	1.00
C21	CONDUIT	0.181	0 01:09	0.94	0.77	1.00
C22	CONDUIT	0.182	0 01:09	0.96	0.74	1.00
C23	CONDUIT	0.182	0 01:09	1.19	0.79	1.00
C24	CONDUIT	0.337	0 01:07	1.79	0.37	1.00
C25	CONDUIT	0.670	0 01:11	1.87	1.41	1.00
C26	CONDUIT	0.812	0 01:17	2.27	1.74	1.00
C27	CONDUIT	0.025	0 01:09	0.51	0.12	1.00

C28	CONDUIT	0.191	0	01:10	3.90	0.89	1.00
C29	CONDUIT	0.985	0	01:15	2.75	1.86	1.00
C3	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C30	CONDUIT	0.006	0	01:06	0.08	0.07	1.00
C31	CONDUIT	0.126	0	01:07	1.79	1.70	1.00
C32	CONDUIT	0.149	0	01:08	2.10	2.02	1.00
C33	CONDUIT	0.146	0	01:08	2.06	1.30	1.00
C34	CONDUIT	0.146	0	01:08	2.06	1.49	1.00
C35	CONDUIT	0.153	0	01:09	2.17	1.50	1.00
C36	CONDUIT	0.101	0	01:08	2.06	1.55	1.00
C37	CONDUIT	0.250	0	01:09	1.57	1.61	1.00
C38	CONDUIT	0.341	0	01:09	2.14	2.54	1.00
C39	CONDUIT	0.341	0	01:09	2.14	2.21	1.00
C4	CONDUIT	0.035	0	01:12	1.20	0.33	1.00
C40	CONDUIT	0.505	0	01:11	3.18	1.06	1.00
C41	CONDUIT	1.467	0	01:12	2.31	1.13	1.00
C42	CONDUIT	1.468	0	01:12	2.31	2.59	1.00
C43	CONDUIT	1.475	0	01:11	2.32	1.79	1.00
C44	CONDUIT	1.485	0	01:11	2.36	2.49	1.00
C45	CONDUIT	1.870	0	01:12	3.29	3.38	0.90
C46	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C47	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C48	CONDUIT	0.000	0	00:00	0.00	0.00	0.14
C49	CONDUIT	0.008	0	01:11	0.48	0.07	0.26
C5	CONDUIT	0.093	0	01:10	1.00	0.61	1.00
C50	CONDUIT	0.022	0	01:11	0.47	0.18	0.45
C51	CONDUIT	0.027	0	01:11	0.45	0.23	0.65
C52	CONDUIT	0.037	0	01:11	0.48	0.33	0.80
C53	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C54	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C55	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C56	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C57	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C58	CONDUIT	1.789	0	01:12	2.79	0.81	0.75
C59	CONDUIT	0.052	0	01:11	0.47	0.18	0.97
C6	CONDUIT	0.113	0	01:10	1.08	0.75	1.00
C60	CONDUIT	0.431	0	01:55	1.20	0.89	1.00
C62	CONDUIT	0.052	0	01:10	2.35	0.55	1.00
C63	CONDUIT	0.062	0	01:09	3.26	0.60	1.00
C64	CONDUIT	0.072	0	01:13	2.28	0.62	1.00
C65	CONDUIT	0.115	0	01:10	4.27	0.95	1.00
C66	CONDUIT	0.086	0	01:09	2.79	0.37	1.00
C67	CONDUIT	0.047	0	01:09	2.34	0.37	1.00
C68	CONDUIT	0.041	0	01:10	1.49	0.32	1.00
C69	CONDUIT	0.240	0	01:09	4.88	1.08	1.00
C7	CONDUIT	0.163	0	01:09	1.48	0.85	1.00
C70	CONDUIT	0.240	0	01:09	4.88	0.97	1.00
C71	CONDUIT	0.127	0	01:07	4.03	1.28	1.00
C72	CONDUIT	0.068	0	01:08	2.17	0.67	1.00
C73	CONDUIT	0.053	0	01:16	1.09	0.33	1.00
C74	CONDUIT	0.033	0	01:08	1.06	0.31	1.00
C75	CONDUIT	0.117	0	01:09	3.71	0.91	1.00
C76	CONDUIT	0.187	0	01:11	3.81	0.84	1.00
C77	CONDUIT	0.008	0	01:11	0.31	0.06	0.80
C78	CONDUIT	0.273	0	01:12	5.56	1.18	1.00
C79	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C8	CONDUIT	0.096	0	01:10	1.57	0.87	1.00

C80	CONDUIT	0.000	0	00:00	0.00	0.00	0.33
C81	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C82	CONDUIT	0.017	0	01:11	0.80	0.16	0.63
C83	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C84	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C85	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C9	CONDUIT	0.149	0	01:19	1.26	0.74	1.00
1	ORIFICE	0.024	0	01:10			
100	ORIFICE	0.000	0	00:00			
119	ORIFICE	0.195	0	01:10			
12	ORIFICE	0.017	0	01:11			
120	ORIFICE	0.000	0	00:00			
13	ORIFICE	0.000	0	00:00			
14	ORIFICE	0.000	0	00:00			
151	ORIFICE	0.000	0	00:00			
2	ORIFICE	0.431	0	01:55			1.00
3	ORIFICE	0.248	0	01:09			
37	ORIFICE	0.000	0	00:00			
38	ORIFICE	0.090	0	01:16			
39	ORIFICE	0.104	0	01:10			
40	ORIFICE	0.053	0	01:10			
41	ORIFICE	0.009	0	01:10			
42	ORIFICE	0.103	0	01:08			
43	ORIFICE	0.325	0	01:10			
5	ORIFICE	0.042	0	01:10			
6	ORIFICE	0.381	0	01:10			
7	ORIFICE	0.249	0	01:09			
8	ORIFICE	0.073	0	01:13			
80	ORIFICE	0.000	0	00:00			
85	ORIFICE	0.018	0	01:10			
86	ORIFICE	0.020	0	01:10			
87	ORIFICE	0.025	0	01:10			
88	ORIFICE	0.129	0	01:07			
89	ORIFICE	0.070	0	01:08			
90	ORIFICE	0.000	0	00:00			
91	ORIFICE	0.000	0	00:00			
92	ORIFICE	0.000	0	00:00			
94	ORIFICE	0.267	0	01:11			
96	ORIFICE	0.184	0	01:11			
97	ORIFICE	0.036	0	01:08			
98	ORIFICE	0.124	0	01:09			
99	ORIFICE	0.055	0	01:15			
10	WEIR	0.000	0	00:00			0.00
18	WEIR	0.000	0	00:00			0.00
19	WEIR	0.000	0	00:00			0.00
9	WEIR	0.000	0	00:00			0.00
A211_Weir	WEIR	0.299	0	01:11			0.70
RYCB1_Weir	WEIR	0.050	0	01:10			0.21
RYCB2_Weir	WEIR	0.000	0	00:00			0.00
RYCB3_Weir	WEIR	0.252	0	01:11			0.62
RYCB4_Weir	WEIR	0.175	0	01:12			0.49
RYCB5_Weir	WEIR	0.000	0	00:00			0.00
RYCB6_Weir	WEIR	0.000	0	00:00			0.00
RYCB7_Weir	WEIR	0.042	0	01:10			0.56
RYCB8_Weir	WEIR	0.000	0	00:00			0.00
RYCB9_Weir	WEIR	0.018	0	01:10			0.10
StreetA_Weir	WEIR	0.334	0	01:12			0.74

StreetB_Weir1	WEIR	0.375	0	01:11	0.80
StreetB_Weir2	WEIR	0.538	0	01:11	1.00
SWM_Pond_Weir	WEIR	0.000	0	00:00	0.00
W17	WEIR	0.256	0	01:10	1.95
W18	WEIR	0.223	0	01:10	1.79
W19	WEIR	0.193	0	01:10	1.62
W20	WEIR	0.168	0	01:10	1.47
W21	WEIR	0.000	0	00:00	0.00
W27	WEIR	0.000	0	00:00	0.00
W30	WEIR	0.000	0	00:00	0.00
W31	WEIR	0.000	0	00:00	0.00
W6	WEIR	0.000	0	00:00	0.00
W8	WEIR	0.000	0	00:00	0.00
W9	WEIR	0.000	0	00:00	0.00

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Flow Classification Summary
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Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
4	1.00	0.28	0.00	0.00	0.72	0.00	0.00	0.00	0.61	0.00
C1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C10	1.00	0.00	0.00	0.00	0.14	0.86	0.00	0.00	0.44	0.00
C11	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.76	0.00
C12	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.85	0.00
C13	1.00	0.00	0.00	0.00	0.09	0.91	0.00	0.00	0.99	0.00
C14	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.43	0.00
C15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.46	0.00
C16	1.00	0.00	0.00	0.00	0.07	0.93	0.00	0.00	0.94	0.00
C17	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.12	0.00
C18	1.00	0.00	0.00	0.00	0.29	0.71	0.00	0.00	0.01	0.00
C19	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.48	0.00
C2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C20	1.00	0.00	0.00	0.00	0.76	0.24	0.00	0.00	0.89	0.00
C21	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01	

C22	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.12
0.00									
C23	1.00	0.00	0.01	0.00	0.53	0.46	0.00	0.00	0.13
0.00									
C24	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.38
0.00									
C25	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.08
0.00									
C26	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.00
0.00									
C27	1.00	0.00	0.84	0.00	0.16	0.00	0.00	0.00	0.53
0.00									
C28	1.00	0.00	0.83	0.00	0.17	0.00	0.00	0.00	0.53
0.00									
C29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.33
0.00									
C3	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C30	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.00
0.00									
C31	1.00	0.00	0.00	0.00	0.67	0.33	0.00	0.00	0.48
0.00									
C32	1.00	0.00	0.00	0.00	0.11	0.89	0.00	0.00	0.00
0.00									
C33	1.00	0.00	0.00	0.00	0.10	0.89	0.00	0.00	0.63
0.00									
C34	1.00	0.01	0.00	0.00	0.12	0.88	0.00	0.00	0.49
0.00									
C35	1.00	0.00	0.01	0.00	0.92	0.07	0.00	0.00	0.82
0.00									
C36	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.82
0.00									
C37	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.14
0.00									
C38	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C39	1.00	0.00	0.00	0.00	0.97	0.03	0.00	0.00	0.03
0.00									
C4	1.00	0.00	0.00	0.00	0.04	0.96	0.00	0.00	0.81
0.00									
C40	1.00	0.00	0.00	0.00	0.97	0.03	0.00	0.00	0.13
0.00									
C41	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.11
0.00									
C42	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C43	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.07
0.00									
C44	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01
0.00									
C45	1.00	0.00	0.00	0.00	0.73	0.27	0.00	0.00	0.01
0.00									
C46	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C47	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C48	1.00	0.29	0.71	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C49	1.00	0.28	0.00	0.00	0.71	0.00	0.00	0.00	0.60
0.00									

C5	1.00	0.00	0.00	0.00	0.12	0.88	0.00	0.00	0.70
0.00									
C50	1.00	0.28	0.00	0.00	0.72	0.00	0.00	0.00	0.58
0.00									
C51	1.00	0.28	0.29	0.00	0.43	0.00	0.00	0.00	0.56
0.00									
C52	1.00	0.27	0.01	0.00	0.72	0.00	0.00	0.00	0.40
0.00									
C53	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C54	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C55	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C56	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C57	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C58	1.00	0.00	0.00	0.00	0.98	0.01	0.00	0.00	0.41
0.00									
C59	1.00	0.00	0.27	0.00	0.73	0.00	0.00	0.00	0.10
0.00									
C6	1.00	0.01	0.00	0.00	0.09	0.91	0.00	0.00	0.03
0.00									
C60	1.00	0.00	0.00	0.00	0.96	0.04	0.00	0.00	0.00
0.00									
C62	1.00	0.01	0.82	0.00	0.18	0.00	0.00	0.00	0.56
0.00									
C63	1.00	0.01	0.82	0.00	0.17	0.00	0.00	0.00	0.56
0.00									
C64	1.00	0.00	0.83	0.00	0.17	0.00	0.00	0.00	0.55
0.00									
C65	1.00	0.00	0.88	0.00	0.12	0.00	0.00	0.00	0.57
0.00									
C66	1.00	0.00	0.90	0.00	0.10	0.00	0.00	0.00	0.57
0.00									
C67	1.00	0.00	0.87	0.00	0.13	0.00	0.00	0.00	0.56
0.00									
C68	1.00	0.00	0.86	0.00	0.14	0.00	0.00	0.00	0.56
0.00									
C69	1.00	0.00	0.00	0.00	0.06	0.94	0.00	0.00	0.86
0.00									
C7	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.86
0.00									
C70	1.00	0.00	0.00	0.00	0.63	0.37	0.00	0.00	0.85
0.00									
C71	1.00	0.00	0.00	0.00	0.09	0.91	0.00	0.00	0.86
0.00									
C72	1.00	0.00	0.78	0.00	0.22	0.00	0.00	0.00	0.54
0.00									
C73	1.00	0.00	0.81	0.00	0.19	0.00	0.00	0.00	0.54
0.00									
C74	1.00	0.01	0.79	0.00	0.20	0.00	0.00	0.00	0.54
0.00									
C75	1.00	0.00	0.87	0.00	0.13	0.00	0.00	0.00	0.57
0.00									
C76	1.00	0.00	0.00	0.00	0.76	0.24	0.00	0.00	0.86
0.00									
C77	1.00	0.00	0.90	0.00	0.10	0.00	0.00	0.00	0.58
0.00									

C78	1.00	0.00	0.00	0.00	0.72	0.28	0.00	0.00	0.84
0.00									
C79	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C8	1.00	0.00	0.00	0.00	0.09	0.91	0.00	0.00	0.85
0.00									
C80	1.00	0.28	0.72	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C81	1.00	0.28	0.72	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C82	1.00	0.27	0.61	0.00	0.12	0.00	0.00	0.00	0.62
0.00									
C83	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C84	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C85	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C9	1.00	0.00	0.00	0.00	0.22	0.78	0.00	0.00	0.24
0.00									

****
Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C10	0.28	0.28	0.31	0.01	0.01
C11	0.31	0.31	0.51	0.01	0.01
C12	0.27	0.27	0.51	0.02	0.02
C13	0.01	0.01	0.16	0.01	0.01
C14	0.14	0.14	0.14	0.01	0.01
C15	0.14	0.14	0.16	0.01	0.01
C16	0.01	0.01	0.20	0.01	0.01
C17	0.16	0.16	0.20	0.01	0.01
C18	0.20	0.20	0.23	0.01	0.01
C19	0.23	0.23	0.28	0.01	0.01
C20	0.10	0.10	0.31	0.01	0.01
C21	0.25	0.25	0.28	0.01	0.01
C22	0.28	0.28	0.30	0.01	0.01
C23	0.30	0.30	0.32	0.01	0.01
C24	0.32	0.32	0.41	0.01	0.01
C25	0.32	0.32	0.32	0.25	0.24
C26	0.31	0.32	0.31	0.39	0.30
C27	0.17	0.17	1.86	0.01	0.01
C28	0.17	0.17	1.89	0.01	0.01
C29	0.29	0.31	0.29	0.34	0.29
C30	0.33	0.33	0.33	0.01	0.01
C31	0.32	0.33	0.32	0.18	0.13
C32	0.30	0.32	0.30	0.38	0.30
C33	0.30	0.30	0.35	0.15	0.15
C34	0.35	0.35	0.36	0.26	0.26
C35	0.36	0.36	0.60	0.24	0.24
C36	0.27	0.27	0.82	0.11	0.11

C37	0.41	0.41	0.43	0.20	0.20
C38	0.43	0.43	0.46	0.23	0.23
C39	0.46	0.46	0.49	0.20	0.20
C4	0.06	0.06	0.14	0.01	0.01
C40	0.47	0.49	0.67	0.06	0.06
C41	0.14	0.14	0.14	0.09	0.08
C42	0.12	0.14	0.12	0.42	0.12
C43	0.06	0.12	0.06	0.23	0.06
C44	0.01	0.06	0.01	0.38	0.01
C45	0.01	0.01	0.01	0.46	0.01
C5	0.13	0.13	0.14	0.01	0.01
C58	0.01	0.01	1.65	0.01	0.01
C59	0.01	0.01	1.68	0.01	0.01
C6	0.14	0.14	0.18	0.01	0.01
C60	1.81	1.81	1.82	0.01	0.01
C62	0.11	0.11	0.17	0.01	0.01
C63	0.14	0.14	0.23	0.01	0.01
C64	0.16	0.16	0.36	0.01	0.01
C65	0.10	0.10	0.20	0.01	0.01
C66	0.10	0.10	0.26	0.01	0.01
C67	0.13	0.13	0.31	0.01	0.01
C68	0.15	0.15	0.45	0.01	0.01
C69	0.23	0.23	0.54	0.01	0.01
C7	0.18	0.18	0.25	0.01	0.01
C70	0.22	0.22	1.61	0.01	0.01
C71	0.32	0.32	0.49	0.05	0.05
C72	0.25	0.25	0.43	0.01	0.01
C73	0.24	0.24	0.32	0.01	0.01
C74	0.21	0.21	0.39	0.01	0.01
C75	0.12	0.12	1.86	0.01	0.01
C76	0.13	0.13	1.40	0.01	0.01
C77	0.01	0.01	1.83	0.01	0.01
C78	0.14	0.14	2.09	0.07	0.07
C8	0.20	0.20	0.28	0.01	0.01
C82	0.01	0.01	0.13	0.01	0.01
C9	0.23	0.23	0.28	0.01	0.01

Analysis begun on: Wed Jul 20 15:33:58 2022
Analysis ended on: Wed Jul 20 15:33:58 2022
Total elapsed time: < 1 sec

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

SBM-18-0530 Kettle Creek

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Element Count
****
Number of rain gages 1
Number of subcatchments ... 29
Number of nodes 118
Number of links 149
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
St.ThomasRainGage	St.Thomas100Yr	INTENSITY	1 min.

****
Subcatchment Summary
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Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A201	0.43	95.56	0.00	30.0000	St.ThomasRainGage	A202
A202	0.22	24.44	45.71	2.0000	St.ThomasRainGage	RYCB1_Storage
A203	0.51	87.93	0.00	30.0000	St.ThomasRainGage	A204
A204	0.08	42.11	45.71	2.0000	St.ThomasRainGage	RYCB2_Storage
A205	0.05	100.00	45.71	2.0000	St.ThomasRainGage	RYCB9_Storage
A206	0.12	7.50	25.00	30.0000	St.ThomasRainGage	A207
A207	0.03	60.00	45.71	2.0000	St.ThomasRainGage	RYCB8_Storage
A208	1.52	119.68	25.00	30.0000	St.ThomasRainGage	A209
A209	0.04	80.00	45.71	2.0000	St.ThomasRainGage	RYCB3_Storage
A210	1.36	143.16	25.00	30.0000	St.ThomasRainGage	A211
A211	0.19	63.33	45.71	2.0000	St.ThomasRainGage	A211_Storage
A212	2.46	144.71	45.71	2.0000	St.ThomasRainGage	StreetA_Storage

A213	0.55	78.57	45.71	2.0000	St.ThomasRainGage StreetB_Storage1
A214	0.99	79.20	45.71	2.0000	St.ThomasRainGage S19
A215	1.09	82.58	46.70	2.0000	St.ThomasRainGage StreetB_Storage1
A216	0.25	100.00	64.29	2.0000	St.ThomasRainGage RYCB7_Storage
A217	1.85	97.37	48.65	2.0000	St.ThomasRainGage StreetB_Storage2
A218	0.54	40.00	45.71	2.0000	St.ThomasRainGage SWM_Pond
A219	0.06	75.00	0.00	2.0000	St.ThomasRainGage SWM_Pond
A220	0.58	193.33	21.43	8.0000	St.ThomasRainGage SWM_Pond
EXT201	0.11	137.50	71.43	2.0000	St.ThomasRainGage A201
EXT202	0.12	150.00	71.43	2.0000	St.ThomasRainGage A203
EXT203	0.95	73.08	0.00	30.0000	St.ThomasRainGage A205
EXT204	0.12	150.00	71.43	2.0000	St.ThomasRainGage EXT205
EXT205	1.26	78.75	0.00	30.0000	St.ThomasRainGage A206
EXT206	0.20	250.00	71.43	2.0000	St.ThomasRainGage A208
EXT207	0.30	375.00	71.43	2.0000	St.ThomasRainGage A210
U201	0.44	44.00	0.00	3.0000	St.ThomasRainGage U201_Outfall
U202	0.08	47.06	45.71	6.0000	St.ThomasRainGage U202_Outfall

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
0	JUNCTION	178.14	1.99	0.0	
4	JUNCTION	178.17	1.87	0.0	
41	JUNCTION	179.05	1.85	0.0	
42	JUNCTION	179.35	1.75	0.0	
43	JUNCTION	178.68	1.97	0.0	
44	JUNCTION	178.46	2.06	0.0	
45	JUNCTION	178.58	2.15	0.0	
46	JUNCTION	178.92	2.15	0.0	
47	JUNCTION	178.80	2.11	0.0	
48	JUNCTION	178.28	2.20	0.0	
49	JUNCTION	178.00	2.07	0.0	
50	JUNCTION	178.07	2.12	0.0	
51	JUNCTION	178.59	1.89	0.0	
52	JUNCTION	179.24	1.80	0.0	
53	JUNCTION	179.06	1.83	0.0	
54	JUNCTION	178.87	1.71	0.0	
55	JUNCTION	177.86	2.26	0.0	

56	JUNCTION	177.79	2.12	0.0
57	JUNCTION	179.17	1.97	0.0
58	JUNCTION	179.80	2.40	0.0
59	JUNCTION	183.47	1.73	0.0
60	JUNCTION	178.27	1.90	0.0
61	JUNCTION	178.42	1.90	0.0
63	JUNCTION	178.72	1.76	0.0
64	JUNCTION	179.12	2.01	0.0
CB1	JUNCTION	183.90	1.25	0.0
CB12	JUNCTION	179.02	1.25	0.0
CB14	JUNCTION	179.22	1.25	0.0
CB17	JUNCTION	179.59	1.25	0.0
CB19	JUNCTION	179.74	1.25	0.0
CB2	JUNCTION	179.18	1.25	0.0
CB21	JUNCTION	179.77	1.25	0.0
CB23	JUNCTION	179.61	1.25	0.0
CB25	JUNCTION	179.41	1.25	0.0
CB28	JUNCTION	179.35	1.25	0.0
CB3	JUNCTION	180.90	1.25	0.0
CB31	JUNCTION	179.60	1.25	0.0
CB33	JUNCTION	179.80	1.25	0.0
CB39	JUNCTION	178.83	1.25	0.0
CB42	JUNCTION	178.74	1.25	0.0
CB43	JUNCTION	179.84	1.25	0.0
CB44	JUNCTION	179.86	1.25	0.0
CB5	JUNCTION	178.89	1.25	0.0
CB7	JUNCTION	178.88	1.25	0.0
CBMH8	JUNCTION	178.82	1.75	0.0
DCB15	JUNCTION	179.28	1.25	0.0
DCB26	JUNCTION	179.22	1.25	0.0
DCB27	JUNCTION	179.22	1.25	0.0
DCB37	JUNCTION	178.61	1.25	0.0
DCB40	JUNCTION	178.76	1.25	0.0
MDMH1	JUNCTION	180.92	5.84	0.0
MDMH2	JUNCTION	179.76	5.54	0.0
MDMH3	JUNCTION	177.75	1.86	0.0
OGS	JUNCTION	177.78	2.22	0.0
RYCB1	JUNCTION	180.03	1.60	0.0
RYCB2	JUNCTION	179.43	1.65	0.0
RYCB3	JUNCTION	179.67	1.86	0.0
RYCB4	JUNCTION	178.86	1.25	0.0
RYCB5	JUNCTION	178.85	1.26	0.0
RYCB6	JUNCTION	178.50	1.55	0.0
RYCB7	JUNCTION	178.51	1.44	0.0
RYCB8	JUNCTION	180.32	2.12	0.0
RYCB9	JUNCTION	181.81	1.55	0.0
STMH1	JUNCTION	176.97	2.49	0.0
STMH10	JUNCTION	178.12	2.16	0.0
STMH11	JUNCTION	178.32	1.89	0.0
STMH12	JUNCTION	178.47	1.91	0.0
STMH13	JUNCTION	178.65	1.82	0.0
STMH14	JUNCTION	178.81	1.80	0.0
STMH15	JUNCTION	178.03	2.06	0.0
STMH16	JUNCTION	179.48	1.88	0.0
STMH17	JUNCTION	178.70	1.95	0.0
STMH18	JUNCTION	179.26	1.80	0.0
STMH19	JUNCTION	178.52	2.07	0.0

STMH2	JUNCTION	183.83	1.75	0.0
STMH20	JUNCTION	178.66	2.17	0.0
STMH21	JUNCTION	179.16	2.07	0.0
STMH22	JUNCTION	178.59	1.98	0.0
STMH23	JUNCTION	178.83	1.95	0.0
STMH3	JUNCTION	179.04	2.18	0.0
STMH4	JUNCTION	177.81	2.17	0.0
STMH5	JUNCTION	177.89	2.21	0.0
STMH6	JUNCTION	177.94	2.13	0.0
STMH7	JUNCTION	178.30	2.23	0.0
STMH9	JUNCTION	181.06	2.61	0.0
O1	OUTFALL	176.95	0.00	0.0
SWM_Pond_Outfall	OUTFALL	178.90	0.00	0.0
U201_Outfall	OUTFALL	177.71	0.68	0.0
U202_Outfall	OUTFALL	183.25	0.00	0.0
A211_Storage	STORAGE	180.57	0.45	0.0
RYCB1_Storage	STORAGE	181.63	0.45	0.0
RYCB2_Storage	STORAGE	181.08	0.38	0.0
RYCB3_Storage	STORAGE	181.53	0.45	0.0
RYCB4_Storage	STORAGE	180.11	0.45	0.0
RYCB5_Storage	STORAGE	180.11	0.45	0.0
RYCB6_Storage	STORAGE	180.05	0.27	0.0
RYCB7_Storage	STORAGE	179.95	0.39	0.0
RYCB8_Storage	STORAGE	182.44	0.45	0.0
RYCB9_Storage	STORAGE	183.36	0.13	0.0
S12	STORAGE	181.05	0.30	0.0
S13	STORAGE	180.85	0.30	0.0
S19	STORAGE	180.99	0.30	0.0
S20	STORAGE	180.84	0.30	0.0
S21	STORAGE	180.53	0.30	0.0
S22	STORAGE	180.43	0.29	0.0
S23	STORAGE	180.14	0.29	0.0
S26	STORAGE	180.47	0.30	0.0
S27	STORAGE	180.27	0.30	0.0
S30	STORAGE	185.15	0.30	0.0
S31	STORAGE	182.15	0.30	0.0
S32	STORAGE	181.09	0.30	0.0
S7	STORAGE	181.11	0.30	0.0
S8	STORAGE	181.02	0.30	0.0
S9	STORAGE	180.86	0.30	0.0
StreetA_Storage	STORAGE	180.47	0.30	0.0
StreetB_Storage1	STORAGE	180.01	0.29	0.0
StreetB_Storage2	STORAGE	179.86	0.29	0.0
SWM_Pond	STORAGE	177.02	1.89	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	% Slope	Roughness
4	RYCB6	STMH11	CONDUIT	22.4	0.8036	0.0130
C1	MDMH1	MDMH2	CONDUIT	13.7	8.4977	0.0130

C10	43	STMH22	CONDUIT	11.1	0.8116	0.0130
C11	STMH22	STMH7	CONDUIT	15.2	1.9082	0.0130
C12	CBMH8	STMH7	CONDUIT	50.5	1.0298	0.0130
C13	RYCB9	STMH21	CONDUIT	43.8	6.0613	0.0130
C14	STMH21	64	CONDUIT	14.9	0.2676	0.0130
C15	64	STMH3	CONDUIT	27.2	0.2947	0.0130
C16	RYCB8	STMH3	CONDUIT	65.0	1.9696	0.0130
C17	STMH3	46	CONDUIT	30.6	0.3919	0.0130
C18	46	47	CONDUIT	29.7	0.4040	0.0130
C19	47	STMH20	CONDUIT	14.4	0.9736	0.0130
C2	MDMH2	MDMH3	CONDUIT	172.8	1.1633	0.0130
C20	RYCB3	STMH20	CONDUIT	59.7	1.6920	0.0130
C21	STMH20	45	CONDUIT	26.4	0.3029	0.0130
C22	45	STMH19	CONDUIT	18.5	0.3245	0.0130
C23	STMH19	44	CONDUIT	21.1	0.2848	0.0130
C24	44	STMH7	CONDUIT	3.6	4.4120	0.0130
C25	STMH7	48	CONDUIT	6.3	0.3180	0.0130
C26	48	0	CONDUIT	45.5	0.3076	0.0130
C27	RYCB4	0	CONDUIT	5.5	13.2045	0.0130
C28	RYCB5	0	CONDUIT	5.5	13.0180	0.0130
C29	0	STMH6	CONDUIT	50.4	0.3968	0.0130
C3	MDMH3	U201_Outfall	CONDUIT	6.0	0.6667	0.0130
C30	STMH18	52	CONDUIT	2.8	0.7169	0.0130
C31	52	53	CONDUIT	30.5	0.5909	0.0130
C32	53	54	CONDUIT	32.9	0.5772	0.0130
C33	54	STMH17	CONDUIT	12.7	1.3355	0.0130
C34	STMH17	51	CONDUIT	10.7	1.0243	0.0130
C35	51	STMH10	CONDUIT	42.3	1.1122	0.0130
C36	RYCB7	STMH10	CONDUIT	32.5	1.2001	0.0130
C37	STMH10	50	CONDUIT	16.8	0.2971	0.0130

C38		50	STMH15	CONDUIT	18.1
0.2214	0.0130				
C39		STMH15	49	CONDUIT	10.3
0.2921	0.0130				
C4		RYCB1	STMH16	CONDUIT	44.9
1.2250	0.0130				
C40		49	STMH6	CONDUIT	2.1
2.8180	0.0130				
C41		STMH6	STMH5	CONDUIT	9.8
0.5102	0.0130				
C42		STMH5	55	CONDUIT	30.7
0.0978	0.0130				
C43		55	STMH4	CONDUIT	24.2
0.2063	0.0130				
C44		STMH4	56	CONDUIT	18.5
0.1082	0.0130				
C45		56	OGS	CONDUIT	10.7
0.0933	0.0130				
C46		STMH14	63	CONDUIT	15.1
0.5956	0.0130				
C47		63	STMH13	CONDUIT	8.2
0.8547	0.0130				
C48		STMH13	STMH12	CONDUIT	18.2
0.9891	0.0130				
C49		STMH12	61	CONDUIT	11.4
0.4371	0.0130				
C5		STMH16	42	CONDUIT	16.8
0.7729	0.0130				
C50		61	STMH11	CONDUIT	22.0
0.4546	0.0130				
C51		STMH11	60	CONDUIT	10.4
0.4794	0.0130				
C52		60	4	CONDUIT	23.5
0.4248	0.0130				
C53		STMH2	59	CONDUIT	7.5
4.8249	0.0130				
C54		59	STMH9	CONDUIT	32.3
7.4752	0.0130				
C55		STMH9	58	CONDUIT	45.7
2.7594	0.0130				
C56		58	57	CONDUIT	23.0
2.7437	0.0130				
C57		57	OGS	CONDUIT	48.8
2.8524	0.0130				
C58		OGS	SWM_Pond	CONDUIT	117.7
0.6457	0.0130				
C59		4	OGS	CONDUIT	14.8
2.6307	0.0130				
C6		42	41	CONDUIT	40.5
0.7406	0.0130				
C60		SWM_Pond	STMH1	CONDUIT	14.9
0.3356	0.0130				
C62		CB33	42	CONDUIT	5.5
8.2093	0.0130				
C63		CB31	41	CONDUIT	5.5
10.0504	0.0130				
C64		CB28	43	CONDUIT	5.5
12.2732	0.0130				
C65		CB44	64	CONDUIT	5.5
13.5780	0.0130				

C66		CB21	46	CONDUIT	5.5
15.6425	0.0130				
C67		CB23	47	CONDUIT	5.5
14.8896	0.0130				
C68		CB25	45	CONDUIT	5.5
15.2657	0.0130				
C69		DCB27	44	CONDUIT	5.5
13.9520	0.0130				
C7		41	STMH23	CONDUIT	18.5
1.1912	0.0130				
C70		DCB26	48	CONDUIT	5.5
17.3461	0.0130				
C71		CB19	52	CONDUIT	5.5
9.1287	0.0130				
C72		CB17	53	CONDUIT	5.5
9.6814	0.0130				
C73		DCB15	54	CONDUIT	5.5
7.4753	0.0130				
C74		CB2	51	CONDUIT	5.5
10.7895	0.0130				
C75		CB5	50	CONDUIT	5.5
15.0776	0.0130				
C76		DCB40	49	CONDUIT	5.5
13.9520	0.0130				
C77		CB39	55	CONDUIT	5.5
17.9172	0.0130				
C78		DCB37	56	CONDUIT	5.5
15.0776	0.0130				
C79		CB14	63	CONDUIT	5.5
9.1287	0.0130				
C8		RYCB2	STMH23	CONDUIT	46.0
1.3045	0.0130				
C80		CB12	61	CONDUIT	5.5
10.9746	0.0130				
C81		CB7	60	CONDUIT	5.5
11.1598	0.0130				
C82		CB42	4	CONDUIT	5.5
10.4197	0.0130				
C83		CB1	59	CONDUIT	5.5
7.8422	0.0130				
C84		CB3	58	CONDUIT	5.5
20.4124	0.0130				
C85		CB43	57	CONDUIT	5.5
12.2732	0.0130				
C9		STMH23	43	CONDUIT	29.6
0.5066	0.0130				
1		RYCB1_Storage	RYCB1	ORIFICE	
100		S27	CB12	ORIFICE	
119		RYCB4_Storage	RYCB5	ORIFICE	
12		StreetB_Storage2	CB42	ORIFICE	
120		RYCB5_Storage	RYCB4	ORIFICE	
13		StreetB_Storage2	CB39	ORIFICE	
14		StreetB_Storage2	CB7	ORIFICE	
151		S26	CB14	ORIFICE	
2		STMH1	O1	ORIFICE	
3		StreetA_Storage	DCB27	ORIFICE	
37		S12	CB33	ORIFICE	
38		RYCB2_Storage	RYCB2	ORIFICE	
39		RYCB3_Storage	RYCB3	ORIFICE	

40	RYCB8_Storage	RYCB8	ORIFICE
41	RYCB9_Storage	RYCB9	ORIFICE
42	RYCB7_Storage	RYCB7	ORIFICE
43	A211_Storage	CBMH8	ORIFICE
5	RYCB6_Storage	RYCB6	ORIFICE
6	StreetA_Storage	CB25	ORIFICE
7	StreetA_Storage	DCB26	ORIFICE
8	StreetA_Storage	CB28	ORIFICE
80	S13	CB31	ORIFICE
85	S9	CB23	ORIFICE
86	S8	CB21	ORIFICE
87	S7	CB44	ORIFICE
88	S19	CB19	ORIFICE
89	S20	CB17	ORIFICE
90	S30	CB1	ORIFICE
91	S31	CB3	ORIFICE
92	S32	CB43	ORIFICE
94	StreetB_Storage2	DCB37	ORIFICE
96	StreetB_Storage1	DCB40	ORIFICE
97	S22	CB2	ORIFICE
98	S23	CB5	ORIFICE
99	S21	DCB15	ORIFICE
10	S13	StreetA_Storage	WEIR
18	S27	StreetB_Storage2	WEIR
19	S32	StreetB_Storage2	WEIR
9	S9	StreetA_Storage	WEIR
A211_Weir	A211_Storage	StreetA_Storage	WEIR
RYCB1_Weir	RYCB1_Storage	RYCB2_Storage	WEIR
RYCB2_Weir	RYCB2_Storage	A211_Storage	WEIR
RYCB3_Weir	RYCB3_Storage	A211_Storage	WEIR
RYCB4_Weir	RYCB4_Storage	StreetB_Storage1	WEIR
RYCB5_Weir	RYCB5_Storage	StreetB_Storage1	WEIR
RYCB6_Weir	RYCB6_Storage	StreetB_Storage2	WEIR
RYCB7_Weir	RYCB7_Storage	RYCB6_Storage	WEIR
RYCB8_Weir	RYCB8_Storage	RYCB3_Storage	WEIR
RYCB9_Weir	RYCB9_Storage	RYCB8_Storage	WEIR
StreetA_Weir	StreetA_Storage	RYCB4_Storage	WEIR
StreetB_Weir1	StreetB_Storage1	StreetB_Storage2	WEIR
StreetB_Weir2	StreetB_Storage2	SWM_Pond	WEIR
SWM_Pond_Weir	SWM_Pond	SWM_Pond_Outfall	WEIR
W17	S19	S20	WEIR
W18	S20	S21	WEIR
W19	S21	S22	WEIR
W20	S22	S23	WEIR
W21	S23	StreetB_Storage1	WEIR
W27	S26	S27	WEIR
W30	S30	S31	WEIR
W31	S31	S32	WEIR
W6	S12	S13	WEIR
W8	S7	S8	WEIR
W9	S8	S9	WEIR

****
Cross Section Summary
****

		Full	Full	Hyd.	Max.	No. of

Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
4	CIRCULAR	0.30	0.07	0.07	0.30	1	0.09
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.83
C10	CIRCULAR	0.45	0.16	0.11	0.45	1	0.26
C11	CIRCULAR	0.45	0.16	0.11	0.45	1	0.39
C12	CIRCULAR	0.45	0.16	0.11	0.45	1	0.29
C13	CIRCULAR	0.30	0.07	0.07	0.30	1	0.24
C14	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C15	CIRCULAR	0.45	0.16	0.11	0.45	1	0.15
C16	CIRCULAR	0.30	0.07	0.07	0.30	1	0.14
C17	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C18	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
C19	CIRCULAR	0.45	0.16	0.11	0.45	1	0.28
C2	CIRCULAR	0.60	0.28	0.15	0.60	1	0.66
C20	CIRCULAR	0.38	0.11	0.09	0.38	1	0.23
C21	CIRCULAR	0.53	0.22	0.13	0.53	1	0.24
C22	CIRCULAR	0.53	0.22	0.13	0.53	1	0.25
C23	CIRCULAR	0.53	0.22	0.13	0.53	1	0.23
C24	CIRCULAR	0.53	0.22	0.13	0.53	1	0.90
C25	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C26	CIRCULAR	0.68	0.36	0.17	0.68	1	0.47
C27	CIRCULAR	0.25	0.05	0.06	0.25	1	0.22
C28	CIRCULAR	0.25	0.05	0.06	0.25	1	0.21
C29	CIRCULAR	0.68	0.36	0.17	0.68	1	0.53
C3	CIRCULAR	0.68	0.36	0.17	0.68	1	0.69
C30	CIRCULAR	0.30	0.07	0.07	0.30	1	0.08
C31	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C32	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C33	CIRCULAR	0.30	0.07	0.07	0.30	1	0.11

C34	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C35	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C36	CIRCULAR	0.25	0.05	0.06	0.25	1
0.07						
C37	CIRCULAR	0.45	0.16	0.11	0.45	1
0.16						
C38	CIRCULAR	0.45	0.16	0.11	0.45	1
0.13						
C39	CIRCULAR	0.45	0.16	0.11	0.45	1
0.15						
C4	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C40	CIRCULAR	0.45	0.16	0.11	0.45	1
0.48						
C41	CIRCULAR	0.90	0.64	0.23	0.90	1
1.29						
C42	CIRCULAR	0.90	0.64	0.23	0.90	1
0.57						
C43	CIRCULAR	0.90	0.64	0.23	0.90	1
0.82						
C44	CIRCULAR	0.90	0.64	0.23	0.90	1
0.60						
C45	CIRCULAR	0.90	0.64	0.23	0.90	1
0.55						
C46	CIRCULAR	0.30	0.07	0.07	0.30	1
0.07						
C47	CIRCULAR	0.30	0.07	0.07	0.30	1
0.09						
C48	CIRCULAR	0.30	0.07	0.07	0.30	1
0.10						
C49	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C5	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C50	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C51	CIRCULAR	0.38	0.11	0.09	0.38	1
0.12						
C52	CIRCULAR	0.38	0.11	0.09	0.38	1
0.11						
C53	CIRCULAR	0.25	0.05	0.06	0.25	1
0.13						
C54	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C55	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C56	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C57	CIRCULAR	0.25	0.05	0.06	0.25	1
0.10						
C58	CIRCULAR	1.05	0.87	0.26	1.05	1
2.19						
C59	CIRCULAR	0.38	0.11	0.09	0.38	1
0.28						
C6	CIRCULAR	0.38	0.11	0.09	0.38	1
0.15						
C60	CIRCULAR	0.68	0.36	0.17	0.68	1
0.49						

C62	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C63	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C64	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C65	CIRCULAR	0.20	0.03	0.05	0.20	1
0.12						
C66	CIRCULAR	0.25	0.05	0.06	0.25	1
0.24						
C67	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C68	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C69	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C7	CIRCULAR	0.38	0.11	0.09	0.38	1
0.19						
C70	CIRCULAR	0.25	0.05	0.06	0.25	1
0.25						
C71	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C72	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C73	CIRCULAR	0.25	0.05	0.06	0.25	1
0.16						
C74	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C75	CIRCULAR	0.20	0.03	0.05	0.20	1
0.13						
C76	CIRCULAR	0.25	0.05	0.06	0.25	1
0.22						
C77	CIRCULAR	0.20	0.03	0.05	0.20	1
0.14						
C78	CIRCULAR	0.25	0.05	0.06	0.25	1
0.23						
C79	CIRCULAR	0.20	0.03	0.05	0.20	1
0.10						
C8	CIRCULAR	0.30	0.07	0.07	0.30	1
0.11						
C80	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C81	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C82	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C83	CIRCULAR	0.20	0.03	0.05	0.20	1
0.09						
C84	CIRCULAR	0.20	0.03	0.05	0.20	1
0.15						
C85	CIRCULAR	0.20	0.03	0.05	0.20	1
0.11						
C9	CIRCULAR	0.45	0.16	0.11	0.45	1
0.20						

****

NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,

not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 12/11/2020 00:00:00
Ending Date 12/11/2020 03:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:01:00
Routing Time Step ..... 30.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 1
Head Tolerance ..... 0.001500 m

**********	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
**********	---	---
Total Precipitation	1.011	61.250
Evaporation Loss	0.000	0.000
Infiltration Loss	0.333	20.162
Surface Runoff	0.557	33.731
Final Storage	0.122	7.400
Continuity Error (%)	-0.068	

**********	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
**********	---	---
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.556	5.560
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.337	3.367
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.218	2.180
Continuity Error (%)	0.242	

```
  ************************
  Highest Continuity Errors
  ************************
  Node S8 (-91.54%)
  Node S9 (16.44%)
  Node CB21 (-5.63%)
  Node CB44 (-4.77%)
  Node CB23 (-3.93%)


  ***************************
  Time-Step Critical Elements
  ***************************
  Link C40 (64.46%)
  Link C24 (19.25%)
  Link C78 (3.08%)
  Link C71 (2.61%)
  Link C45 (2.31%)


  *******************************
  Highest Flow Instability Indexes
  *******************************
  Link 88 (12)
  Link 89 (9)
  Link C40 (8)
  Link C30 (8)
  Link W17 (7)


  ************************
  Routing Time Step Summary
  ************************
  Minimum Time Step           :     0.50 sec
  Average Time Step           :     0.88 sec
  Maximum Time Step           :    30.00 sec
  Percent in Steady State     :    -0.00
  Average Iterations per Step :     2.43
  Percent Not Converging      :     4.31
  Time Step Frequencies       :
     30.000 - 13.228 sec      :     0.04 %
     13.228 -  5.833 sec      :     0.00 %
      5.833 -  2.572 sec      :     0.27 %
      2.572 -  1.134 sec      :    16.30 %
      1.134 -  0.500 sec      :    83.39 %


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ---------------------------------------------------------------------------------------
-----------------------------------------
                             Total      Total      Total      Total     Imperv
Perv      Total       Total     Peak  Runoff
```

Subcatchment	Precip mm	Runon mm	Evap mm	Infil mm	Runoff mm	Runoff mm	Runoff 10^6 ltr	Runoff CMS	Coeff
A201	61.25	14.70	0.00	39.20	0.00	27.13	27.13	0.12	0.06	0.357
A202	61.25	52.89	0.00	10.49	51.08	45.56	96.64	0.21	0.09	0.847
A203	61.25	13.52	0.00	39.20	0.00	25.56	25.56	0.13	0.06	0.342
A204	61.25	162.49	0.00	10.49	101.38	106.59	207.97	0.17	0.07	0.930
A205	61.25	203.66	0.00	10.49	120.34	129.75	250.09	0.13	0.03	0.944
A206	61.25	158.50	0.00	29.40	54.40	115.99	170.39	0.20	0.04	0.775
A207	61.25	677.97	0.00	10.49	337.13	386.09	723.22	0.22	0.04	0.978
A208	61.25	7.56	0.00	29.40	16.80	14.04	30.84	0.47	0.32	0.448
A209	61.25	1169.24	0.00	10.49	561.71	653.39	1215.10	0.49	0.34	0.987
A210	61.25	12.68	0.00	29.40	18.08	18.25	36.33	0.49	0.33	0.491
A211	61.25	259.50	0.00	10.49	145.62	158.17	303.79	0.58	0.36	0.947
A212	61.25	0.00	0.00	10.49	26.98	17.28	44.27	1.09	0.80	0.723
A213	61.25	0.00	0.00	10.49	27.14	19.00	46.14	0.25	0.22	0.753
A214	61.25	0.00	0.00	10.49	27.05	18.03	45.08	0.45	0.35	0.736
A215	61.25	0.00	0.00	10.30	27.62	17.63	45.25	0.49	0.38	0.739
A216	61.25	0.00	0.00	6.90	38.28	13.21	51.49	0.13	0.15	0.841
A217	61.25	0.00	0.00	9.92	28.67	16.20	44.87	0.83	0.61	0.733
A218	61.25	0.00	0.00	10.49	27.03	17.86	44.90	0.24	0.19	0.733
A219	61.25	0.00	0.00	19.32	0.00	37.08	37.08	0.02	0.02	0.605
A220	61.25	0.00	0.00	28.54	12.79	15.70	28.50	0.17	0.13	0.465
EXT201	61.25	0.00	0.00	1.37	42.62	14.92	57.54	0.06	0.08	0.939
EXT202	61.25	0.00	0.00	1.37	42.62	14.92	57.54	0.07	0.09	0.939
EXT203	61.25	0.00	0.00	39.20	0.00	10.78	10.78	0.10	0.02	0.176
EXT204	61.25	0.00	0.00	1.37	42.62	14.92	57.54	0.07	0.09	0.939
EXT205	61.25	5.47	0.00	39.20	0.00	15.17	15.17	0.19	0.04	0.227
EXT206	61.25	0.00	0.00	1.37	42.62	14.92	57.54	0.12	0.15	0.939
EXT207	61.25	0.00	0.00	1.37	42.62	14.92	57.54	0.17	0.22	0.939

```
  U201                      61.25       0.00       0.00      36.32       0.00
16.40      16.40        0.07     0.02   0.268
  U202                      61.25       0.00       0.00      10.49      27.28
20.27      47.55        0.04     0.04   0.776
```

****
Node Depth Summary
****

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
0	JUNCTION	0.38	1.77	179.91	0 01:11	1.75
4	JUNCTION	0.15	0.71	178.88	0 01:10	0.42
41	JUNCTION	0.12	3.43	182.48	0 01:09	1.57
42	JUNCTION	0.10	2.37	181.72	0 01:10	1.31
43	JUNCTION	0.20	1.85	180.53	0 01:10	1.82
44	JUNCTION	0.25	1.96	180.42	0 01:11	1.92
45	JUNCTION	0.26	2.04	180.62	0 01:10	1.86
46	JUNCTION	0.19	2.20	181.12	0 01:09	1.56
47	JUNCTION	0.19	2.09	180.89	0 01:09	1.67
48	JUNCTION	0.41	2.08	180.36	0 01:11	2.05
49	JUNCTION	0.40	1.30	179.30	0 01:11	1.29
50	JUNCTION	0.37	1.56	179.63	0 01:11	1.56
51	JUNCTION	0.22	1.85	180.44	0 01:10	1.85
52	JUNCTION	0.26	1.81	181.05	0 01:09	1.80
53	JUNCTION	0.26	1.91	180.97	0 01:10	1.90
54	JUNCTION	0.22	1.86	180.73	0 01:09	1.86
55	JUNCTION	0.49	1.37	179.23	0 01:09	1.07
56	JUNCTION	0.50	1.15	178.94	0 01:09	0.84
57	JUNCTION	0.00	0.00	179.17	0 00:00	0.00
58	JUNCTION	0.00	0.00	179.80	0 00:00	0.00
59	JUNCTION	0.00	0.00	183.47	0 00:00	0.00
60	JUNCTION	0.08	0.81	179.08	0 01:10	0.35
61	JUNCTION	0.01	0.20	178.62	0 01:10	0.18
63	JUNCTION	0.00	0.00	178.72	0 00:00	0.00
64	JUNCTION	0.12	3.35	182.47	0 01:10	1.43
CB1	JUNCTION	0.00	0.00	183.90	0 00:00	0.00
CB12	JUNCTION	0.00	0.00	179.02	0 00:00	0.00
CB14	JUNCTION	0.00	0.00	179.22	0 00:00	0.00
CB17	JUNCTION	0.10	1.44	181.03	0 01:10	1.43
CB19	JUNCTION	0.19	1.43	181.17	0 01:10	1.42
CB2	JUNCTION	0.07	1.28	180.46	0 01:10	1.28
CB21	JUNCTION	0.02	1.30	181.07	0 01:10	0.71
CB23	JUNCTION	0.03	1.30	180.91	0 01:10	0.86
CB25	JUNCTION	0.04	1.27	180.68	0 01:10	1.08
CB28	JUNCTION	0.06	1.29	180.64	0 01:11	1.29
CB3	JUNCTION	0.00	0.00	180.90	0 00:00	0.00
CB31	JUNCTION	0.04	1.19	180.79	0 01:10	1.02
CB33	JUNCTION	0.03	1.24	181.04	0 01:10	0.86
CB39	JUNCTION	0.00	0.17	179.00	0 01:09	0.11
CB42	JUNCTION	0.00	0.10	178.84	0 01:12	0.10
CB43	JUNCTION	0.00	0.00	179.84	0 00:00	0.00
CB44	JUNCTION	0.02	1.33	181.19	0 01:10	0.69

CB5	JUNCTION	0.04	1.38	180.27	0	01:11	1.38
CB7	JUNCTION	0.00	0.00	178.88	0	01:10	0.00
CBMH8	JUNCTION	0.24	1.83	180.65	0	01:11	1.83
DCB15	JUNCTION	0.09	1.47	180.75	0	01:10	1.45
DCB26	JUNCTION	0.14	1.37	180.59	0	01:11	1.37
DCB27	JUNCTION	0.15	1.38	180.60	0	01:11	1.37
DCB37	JUNCTION	0.10	1.27	179.88	0	01:12	1.27
DCB40	JUNCTION	0.08	1.27	180.03	0	01:11	1.26
MDMH1	JUNCTION	0.00	0.00	180.92	0	00:00	0.00
MDMH2	JUNCTION	0.00	0.00	179.76	0	00:00	0.00
MDMH3	JUNCTION	0.00	0.00	177.75	0	00:00	0.00
OGS	JUNCTION	0.47	0.75	178.53	0	01:12	0.75
RYCB1	JUNCTION	0.06	1.44	181.47	0	01:10	0.77
RYCB2	JUNCTION	0.17	1.74	181.17	0	01:15	1.73
RYCB3	JUNCTION	0.08	1.91	181.58	0	01:10	0.92
RYCB4	JUNCTION	0.05	1.05	179.91	0	01:11	1.03
RYCB5	JUNCTION	0.07	1.43	180.28	0	01:12	1.43
RYCB6	JUNCTION	0.00	0.21	178.71	0	01:09	0.20
RYCB7	JUNCTION	0.14	1.75	180.26	0	01:09	1.74
RYCB8	JUNCTION	0.09	0.56	180.88	0	01:11	0.54
RYCB9	JUNCTION	0.02	0.04	181.85	0	01:10	0.04
STMH1	JUNCTION	1.01	1.42	178.39	0	01:59	1.42
STMH10	JUNCTION	0.33	1.60	179.72	0	01:11	1.59
STMH11	JUNCTION	0.05	0.33	178.65	0	01:10	0.26
STMH12	JUNCTION	0.00	0.18	178.65	0	01:11	0.14
STMH13	JUNCTION	0.00	0.00	178.65	0	00:00	0.00
STMH14	JUNCTION	0.00	0.00	178.81	0	00:00	0.00
STMH15	JUNCTION	0.38	1.39	179.42	0	01:11	1.38
STMH16	JUNCTION	0.09	3.49	182.97	0	01:10	1.19
STMH17	JUNCTION	0.22	1.88	180.58	0	01:10	1.86
STMH18	JUNCTION	0.24	1.79	181.05	0	01:10	1.78
STMH19	JUNCTION	0.26	1.98	180.50	0	01:10	1.89
STMH2	JUNCTION	0.00	0.00	183.83	0	00:00	0.00
STMH20	JUNCTION	0.25	2.10	180.76	0	01:10	1.80
STMH21	JUNCTION	0.11	2.95	182.11	0	01:10	1.39
STMH22	JUNCTION	0.20	1.88	180.47	0	01:11	1.84
STMH23	JUNCTION	0.20	2.59	181.42	0	01:09	1.77
STMH3	JUNCTION	0.19	2.42	181.46	0	01:09	1.50
STMH4	JUNCTION	0.51	1.34	179.15	0	01:17	0.95
STMH5	JUNCTION	0.50	1.27	179.16	0	01:09	1.25
STMH6	JUNCTION	0.45	1.29	179.23	0	01:11	1.27
STMH7	JUNCTION	0.41	2.10	180.40	0	01:11	2.07
STMH9	JUNCTION	0.00	0.00	181.06	0	00:00	0.00
O1	OUTFALL	0.00	0.00	176.95	0	00:00	0.00
SWM_Pond_Outfall	OUTFALL	0.00	0.00	178.90	0	00:00	0.00
U201_Outfall	OUTFALL	0.00	0.00	177.71	0	00:00	0.00
U202_Outfall	OUTFALL	0.00	0.00	183.25	0	00:00	0.00
A211_Storage	STORAGE	0.06	0.22	180.79	0	01:10	0.22
RYCB1_Storage	STORAGE	0.01	0.03	181.66	0	01:10	0.03
RYCB2_Storage	STORAGE	0.03	0.18	181.26	0	01:15	0.18
RYCB3_Storage	STORAGE	0.02	0.10	181.63	0	01:10	0.09
RYCB4_Storage	STORAGE	0.01	0.29	180.40	0	01:12	0.29
RYCB5_Storage	STORAGE	0.00	0.00	180.11	0	00:00	0.00
RYCB6_Storage	STORAGE	0.00	0.06	180.11	0	01:09	0.06
RYCB7_Storage	STORAGE	0.02	0.39	180.34	0	01:09	0.39
RYCB8_Storage	STORAGE	0.03	0.06	182.50	0	01:39	0.06
RYCB9_Storage	STORAGE	0.01	0.02	183.38	0	01:10	0.02

S12	STORAGE	0.00	0.00	181.05	0	00:00	0.00
S13	STORAGE	0.00	0.00	180.85	0	00:00	0.00
S19	STORAGE	0.05	0.24	181.23	0	01:10	0.23
S20	STORAGE	0.01	0.23	181.07	0	01:10	0.23
S21	STORAGE	0.01	0.25	180.78	0	01:10	0.25
S22	STORAGE	0.00	0.06	180.49	0	01:10	0.06
S23	STORAGE	0.01	0.23	180.37	0	01:12	0.22
S26	STORAGE	0.00	0.00	180.47	0	00:00	0.00
S27	STORAGE	0.00	0.00	180.27	0	00:00	0.00
S30	STORAGE	0.00	0.00	185.15	0	00:00	0.00
S31	STORAGE	0.00	0.00	182.15	0	00:00	0.00
S32	STORAGE	0.00	0.00	181.09	0	00:00	0.00
S7	STORAGE	0.00	0.03	181.14	0	01:10	0.01
S8	STORAGE	0.00	0.02	181.04	0	01:10	0.00
S9	STORAGE	0.00	0.01	180.87	0	01:10	0.00
StreetA_Storage	STORAGE	0.05	0.23	180.70	0	01:12	0.23
StreetB_Storage1	STORAGE	0.03	0.15	180.16	0	01:11	0.15
StreetB_Storage2	STORAGE	0.04	0.18	180.04	0	01:12	0.18
SWM_Pond	STORAGE	0.99	1.42	178.44	0	01:59	1.42

****
Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min		Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
0	JUNCTION	0.000	1.016	0	01:17	0	2.76	0.171
4	JUNCTION	0.000	0.094	0	01:12	0	0.0327	1.154
41	JUNCTION	0.000	0.190	0	01:09	0	0.0841	0.100
42	JUNCTION	0.000	0.155	0	01:09	0	0.0782	0.258
43	JUNCTION	0.000	0.210	0	01:16	0	0.415	0.086
44	JUNCTION	0.000	0.303	0	01:11	0	0.998	-0.017
45	JUNCTION	0.000	0.195	0	01:11	0	0.528	0.189
46	JUNCTION	0.000	0.255	0	01:09	0	0.361	0.269
47	JUNCTION	0.000	0.250	0	01:09	0	0.367	0.118
48	JUNCTION	0.000	0.842	0	01:20	0	2.65	0.091
49	JUNCTION	0.000	0.536	0	01:10	0	0.841	-0.223

```
  50                  JUNCTION     0.000    0.342     0  01:09           0
0.564       0.243
  51                  JUNCTION     0.000    0.155     0  01:08           0
0.391       0.088
  52                  JUNCTION     0.000    0.126     0  01:06           0
0.323       0.079
  53                  JUNCTION     0.000    0.149     0  01:07           0
0.358       0.147
  54                  JUNCTION     0.000    0.148     0  01:07           0
0.382       0.067
  55                  JUNCTION     0.000    1.513     0  01:11           0
3.58       0.224
  56                  JUNCTION     0.000    1.796     0  01:11           0
4.02       0.093
  57                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  58                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  59                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  60                  JUNCTION     0.000    0.095     0  01:10           0
0.0136       0.472
  61                  JUNCTION     0.000    0.051     0  01:10           0
0.00274       0.594
  63                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  64                  JUNCTION     0.000    0.244     0  01:10           0
0.0513       0.447
  CB1                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB12                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB14                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB17                JUNCTION     0.000    0.069     0  01:07           0
0.0355       0.100
  CB19                JUNCTION     0.000    0.129     0  01:06           0
0.323      -0.009
  CB2                 JUNCTION     0.000    0.035     0  01:08           0
0.00986      -0.932
  CB21                JUNCTION     0.000    0.086     0  01:09           0
0.00119      -5.334
  CB23                JUNCTION     0.000    0.051     0  01:10           0
0.00127      -3.786
  CB25                JUNCTION     0.000    0.036     0  01:10           0
0.008      -2.222
  CB28                JUNCTION     0.000    0.068     0  01:10           0
0.0307      -0.157
  CB3                 JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  CB31                JUNCTION     0.000    0.066     0  01:09           0
0.000868      -1.191
  CB33                JUNCTION     0.000    0.059     0  01:10           0
0.000925      -2.088
  CB39                JUNCTION     0.000    0.014     0  01:09           0
0.000584       0.838
  CB42                JUNCTION     0.000    0.048     0  01:12           0
0.0126       0.008
  CB43                JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
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  CB44                JUNCTION     0.000    0.132     0  01:10           0
0.00126      -4.551
  CB5                 JUNCTION     0.000    0.123     0  01:15           0
0.0548       0.054
  CB7                 JUNCTION     0.000    0.001     0  01:10           0
9.7e-07       0.177 ltr
  CBMH8               JUNCTION     0.000    0.325     0  01:09           0
0.77       0.100
  DCB15               JUNCTION     0.000    0.056     0  01:17           0
0.0249      -0.162
  DCB26               JUNCTION     0.000    0.249     0  01:09           0
0.489       0.010
  DCB27               JUNCTION     0.000    0.248     0  01:09           0
0.482       0.010
  DCB37               JUNCTION     0.000    0.288     0  01:10           0
0.453      -0.026
  DCB40               JUNCTION     0.000    0.222     0  01:11           0
0.274      -0.045
  MDMH1               JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH2               JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  MDMH3               JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  OGS                 JUNCTION     0.000    1.888     0  01:09           0
4.04       0.754
  RYCB1               JUNCTION     0.000    0.062     0  01:10           0
0.0705       0.115
  RYCB2               JUNCTION     0.000    0.122     0  01:16           0
0.309       0.084
  RYCB3               JUNCTION     0.000    0.118     0  01:10           0
0.159       0.008
  RYCB4               JUNCTION     0.000    0.044     0  01:09           0
0.00101       2.614
  RYCB5               JUNCTION     0.000    0.192     0  01:10           0
0.117      -0.047
  RYCB6               JUNCTION     0.000    0.066     0  01:10           0
0.00795      -0.753
  RYCB7               JUNCTION     0.000    0.104     0  01:08           0
0.121      -0.059
  RYCB8               JUNCTION     0.000    0.073     0  01:10           0
0.3       0.178
  RYCB9               JUNCTION     0.000    0.010     0  01:10           0
0.041       0.151
  STMH1               JUNCTION     0.000    0.459     0  01:59           0
3.27       0.359
  STMH10              JUNCTION     0.000    0.253     0  01:08           0
0.51       0.323
  STMH11              JUNCTION     0.000    0.111     0  01:10           0
0.0118       0.301
  STMH12              JUNCTION     0.000    0.026     0  01:10           0
0.000844       3.499
  STMH13              JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH14              JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  STMH15              JUNCTION     0.000    0.342     0  01:09           0
0.562       0.208
  STMH16              JUNCTION     0.000    0.145     0  01:10           0
0.0727       0.019
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STMH17	JUNCTION	0.000	0.146	0	01:08	0	
0.381	0.037						
STMH18	JUNCTION	0.000	0.007	0	01:05	0	
0.000471	-3.473						
STMH19	JUNCTION	0.000	0.195	0	01:11	0	
0.529	0.144						
STMH2	JUNCTION	0.000	0.000	0	00:00	0	
0	0.000 ltr						
STMH20	JUNCTION	0.000	0.237	0	01:08	0	
0.523	0.318						
STMH21	JUNCTION	0.000	0.244	0	01:10	0	
0.0437	0.210						
STMH22	JUNCTION	0.000	0.211	0	01:16	0	
0.414	0.036						
STMH23	JUNCTION	0.000	0.170	0	01:09	0	
0.39	0.149						
STMH3	JUNCTION	0.000	0.262	0	01:09	0	
0.356	0.447						
STMH4	JUNCTION	0.000	1.513	0	01:11	0	
3.57	0.178						
STMH5	JUNCTION	0.000	1.511	0	01:11	0	
3.59	0.150						
STMH6	JUNCTION	0.000	1.511	0	01:11	0	
3.6	0.167						
STMH7	JUNCTION	0.000	0.704	0	01:11	0	
2.16	0.129						
STMH9	JUNCTION	0.000	0.000	0	00:00	0	
0	0.000 ltr						
O1	OUTFALL	0.000	0.459	0	01:59	0	
3.26	0.000						
SWM_Pond_Outfall	OUTFALL	0.000	0.000	0	00:00	0	
0	0.000 ltr						
U201_Outfall	OUTFALL	0.018	0.018	0	01:24	0.072	
0.072	0.000						
U202_Outfall	OUTFALL	0.044	0.044	0	01:10	0.038	
0.038	0.000						
A211_Storage	STORAGE	0.362	0.648	0	01:10	0.577	
0.903	-0.004						
RYCB1_Storage	STORAGE	0.087	0.087	0	01:10	0.212	
0.212	0.008						
RYCB2_Storage	STORAGE	0.067	0.120	0	01:17	0.166	
0.309	0.007						
RYCB3_Storage	STORAGE	0.339	0.339	0	01:10	0.486	
0.486	0.009						
RYCB4_Storage	STORAGE	0.000	0.461	0	01:12	0	
0.212	0.020						
RYCB5_Storage	STORAGE	0.000	0.000	0	00:00	0	
0	0.000 ltr						
RYCB6_Storage	STORAGE	0.000	0.066	0	01:09	0	
0.00793	-0.001						
RYCB7_Storage	STORAGE	0.146	0.146	0	01:10	0.129	
0.129	0.061						
RYCB8_Storage	STORAGE	0.044	0.059	0	01:39	0.216	
0.3	0.012						
RYCB9_Storage	STORAGE	0.030	0.030	0	01:10	0.125	
0.125	0.008						
S12	STORAGE	0.000	0.000	0	00:00	0	
0	0.000 ltr						
S13	STORAGE	0.000	0.000	0	00:00	0	
0	0.000 ltr						

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  S19                   STORAGE      0.345    0.345     0  01:10        0.446
0.446       0.006
  S20                   STORAGE      0.000    0.297     0  01:10            0
0.123       0.008
  S21                   STORAGE      0.000    0.264     0  01:10            0
0.088       0.014
  S22                   STORAGE      0.000    0.236     0  01:10            0
0.0638       0.044
  S23                   STORAGE      0.000    0.213     0  01:10            0
0.0546       0.524
  S26                   STORAGE      0.000    0.000     0  00:00            0
0       0.000 ltr
  S27                   STORAGE      0.000    0.000     0  00:00            0
0       0.000 ltr
  S30                   STORAGE      0.000    0.000     0  00:00            0
0       0.000 ltr
  S31                   STORAGE      0.000    0.000     0  00:00            0
0       0.000 ltr
  S32                   STORAGE      0.000    0.000     0  00:00            0
0       0.000 ltr
  S7                    STORAGE      0.000    0.034     0  01:10            0
0.000185     -37.070
  S8                    STORAGE      0.000    0.022     0  01:10            0
5.63e-05     -47.791
  S9                    STORAGE      0.000    0.032     0  01:10            0
0.000102      19.672
  StreetA_Storage       STORAGE      0.800    1.154     0  01:10         1.09
1.22       0.031
  StreetB_Storage1      STORAGE      0.598    0.744     0  01:11        0.746
0.841       0.006
  StreetB_Storage2      STORAGE      0.612    1.057     0  01:11        0.829
1.4       0.016
  SWM_Pond              STORAGE      0.334    2.752     0  01:11         0.43
5.37       1.209


  **********************
  Node Surcharge Summary
  **********************

  Surcharging occurs when water rises above the top of the highest conduit.
  -------------------------------------------------------------------------
                                          Max. Height   Min. Depth
                                Hours     Above Crown    Below Rim
  Node                  Type  Surcharged       Meters       Meters
  -------------------------------------------------------------------------
  0                     JUNCTION      0.38        1.094        0.221
  4                     JUNCTION      0.03        0.333        1.162
  41                    JUNCTION      0.27        3.055        0.000
  42                    JUNCTION      0.21        1.995        0.000
  43                    JUNCTION      0.36        1.401        0.119
  44                    JUNCTION      0.41        1.434        0.101
  45                    JUNCTION      0.37        1.514        0.111
  46                    JUNCTION      0.28        1.748        0.000
  47                    JUNCTION      0.32        1.640        0.020
  48                    JUNCTION      0.41        1.402        0.123
  49                    JUNCTION      1.14        0.849        0.771
  50                    JUNCTION      0.58        1.114        0.556
  51                    JUNCTION      0.42        1.552        0.038
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52	JUNCTION	0.40	1.510	0.000
53	JUNCTION	0.38	1.608	0.000
54	JUNCTION	0.36	1.564	0.000
55	JUNCTION	0.15	0.472	0.888
56	JUNCTION	0.01	0.252	0.968
60	JUNCTION	0.01	0.436	1.089
64	JUNCTION	0.21	2.903	0.000
CB17	JUNCTION	0.25	0.837	0.000
CB19	JUNCTION	0.33	0.831	0.000
CB2	JUNCTION	0.20	0.684	0.000
CB21	JUNCTION	0.07	0.697	0.000
CB23	JUNCTION	0.12	0.696	0.000
CB25	JUNCTION	0.12	0.484	0.000
CB28	JUNCTION	0.16	0.563	0.000
CB31	JUNCTION	0.15	0.589	0.061
CB33	JUNCTION	0.11	0.645	0.005
CB44	JUNCTION	0.03	0.728	0.000
CB5	JUNCTION	0.13	0.777	0.000
CBMH8	JUNCTION	0.30	1.234	0.000
DCB15	JUNCTION	0.24	0.866	0.000
DCB26	JUNCTION	0.23	0.773	0.000
DCB27	JUNCTION	0.23	0.778	0.000
DCB37	JUNCTION	0.13	0.671	0.000
DCB40	JUNCTION	0.12	0.674	0.000
RYCB1	JUNCTION	0.01	0.845	0.155
RYCB2	JUNCTION	0.24	1.141	0.000
RYCB3	JUNCTION	0.11	1.310	0.000
RYCB4	JUNCTION	0.18	0.452	0.198
RYCB5	JUNCTION	0.19	0.830	0.000
RYCB7	JUNCTION	0.21	1.146	0.000
STMH1	JUNCTION	1.83	0.747	1.068
STMH10	JUNCTION	0.50	1.151	0.559
STMH15	JUNCTION	0.91	0.939	0.671
STMH16	JUNCTION	0.19	3.115	0.000
STMH17	JUNCTION	0.41	1.581	0.069
STMH18	JUNCTION	0.39	1.488	0.012
STMH19	JUNCTION	0.39	1.459	0.086
STMH20	JUNCTION	0.35	1.578	0.067
STMH21	JUNCTION	0.20	2.503	0.000
STMH22	JUNCTION	0.39	1.426	0.104
STMH23	JUNCTION	0.31	2.144	0.000
STMH3	JUNCTION	0.24	1.971	0.000
STMH4	JUNCTION	0.11	0.441	0.829
STMH5	JUNCTION	0.21	0.369	0.941
STMH6	JUNCTION	0.19	0.386	0.844
STMH7	JUNCTION	0.41	1.426	0.129

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary

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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
A211_Storage	0.000	1	0	0	0.000	12	0 01:10	0.646
RYCB1_Storage	0.000	0	0	0	0.000	0	0 01:10	0.089
RYCB2_Storage	0.000	0	0	0	0.000	11	0 01:15	0.122
RYCB3_Storage	0.000	0	0	0	0.000	1	0 01:10	0.353
RYCB4_Storage	0.000	1	0	0	0.001	28	0 01:12	0.461
RYCB5_Storage	0.000	0	0	0	0.000	0	0 00:00	0.000
RYCB6_Storage	0.000	0	0	0	0.000	1	0 01:09	0.066
RYCB7_Storage	0.000	2	0	0	0.002	98	0 01:09	0.148
RYCB8_Storage	0.000	0	0	0	0.000	0	0 01:39	0.059
RYCB9_Storage	0.000	0	0	0	0.000	0	0 01:10	0.030
S12	0.000	0	0	0	0.000	0	0 00:00	0.000
S13	0.000	0	0	0	0.000	0	0 00:00	0.000
S19	0.000	14	0	0	0.002	78	0 01:10	0.347
S20	0.000	4	0	0	0.002	76	0 01:10	0.296
S21	0.000	3	0	0	0.002	85	0 01:10	0.263
S22	0.000	0	0	0	0.001	19	0 01:10	0.236
S23	0.000	1	0	0	0.014	47	0 01:12	0.123
S26	0.000	0	0	0	0.000	0	0 00:00	0.000
S27	0.000	0	0	0	0.000	0	0 00:00	0.000
S30	0.000	0	0	0	0.000	0	0 00:00	0.000
S31	0.000	0	0	0	0.000	0	0 00:00	0.000
S32	0.000	0	0	0	0.000	0	0 00:00	0.000
S7	0.000	0	0	0	0.000	10	0 01:10	0.021
S8	0.000	0	0	0	0.000	4	0 01:10	0.008

S9	0.000	0	0	0	0.000	3	0	01:10	0.006
StreetA_Storage	0.003	2	0	0	0.085	44	0	01:12	0.805
StreetB_Storage1	0.000	0	0	0	0.004	14	0	01:11	0.745
StreetB_Storage2	0.002	1	0	0	0.050	24	0	01:12	0.949
SWM_Pond	1.581	38	0	0	2.551	61	0	01:59	0.459

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
O1	99.92	0.340	0.459	3.257
SWM_Pond_Outfall	0.00	0.000	0.000	0.000
U201_Outfall	70.89	0.010	0.018	0.072
U202_Outfall	99.97	0.003	0.044	0.038
System	67.70	0.354	0.473	3.367

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
4	CONDUIT	0.070	0 01:09	1.78	0.81	0.80
C1	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C10	CONDUIT	0.211	0 01:16	1.43	0.82	1.00
C11	CONDUIT	0.211	0 01:16	1.32	0.53	1.00
C12	CONDUIT	0.322	0 01:09	2.03	1.11	1.00
C13	CONDUIT	0.010	0 01:10	1.04	0.04	0.57
C14	CONDUIT	0.235	0 01:10	1.79	1.59	1.00
C15	CONDUIT	0.234	0 01:09	1.58	1.51	1.00
C16	CONDUIT	0.063	0 01:11	1.56	0.46	1.00
C17	CONDUIT	0.207	0 01:09	1.42	1.16	1.00
C18	CONDUIT	0.211	0 01:09	1.37	1.17	1.00
C19	CONDUIT	0.220	0 01:09	1.42	0.78	1.00
C2	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
C20	CONDUIT	0.147	0 01:10	1.33	0.64	1.00
C21	CONDUIT	0.176	0 01:11	1.00	0.74	1.00
C22	CONDUIT	0.195	0 01:11	1.03	0.80	1.00
C23	CONDUIT	0.195	0 01:11	1.22	0.85	1.00
C24	CONDUIT	0.336	0 01:07	1.82	0.37	1.00
C25	CONDUIT	0.704	0 01:11	1.97	1.49	1.00

C26	CONDUIT	0.841	0	01:20	2.35	1.80	1.00
C27	CONDUIT	0.044	0	01:09	0.91	0.21	1.00
C28	CONDUIT	0.191	0	01:10	3.88	0.89	1.00
C29	CONDUIT	1.016	0	01:17	2.84	1.92	1.00
C3	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C30	CONDUIT	0.007	0	01:05	0.10	0.09	1.00
C31	CONDUIT	0.126	0	01:06	1.78	1.69	1.00
C32	CONDUIT	0.148	0	01:07	2.10	2.02	1.00
C33	CONDUIT	0.146	0	01:08	2.07	1.31	1.00
C34	CONDUIT	0.146	0	01:08	2.07	1.50	1.00
C35	CONDUIT	0.155	0	01:08	2.19	1.52	1.00
C36	CONDUIT	0.101	0	01:08	2.06	1.55	1.00
C37	CONDUIT	0.253	0	01:08	1.59	1.63	1.00
C38	CONDUIT	0.342	0	01:09	2.15	2.55	1.00
C39	CONDUIT	0.341	0	01:09	2.14	2.21	1.00
C4	CONDUIT	0.048	0	01:10	1.24	0.45	1.00
C40	CONDUIT	0.536	0	01:10	3.37	1.12	1.00
C41	CONDUIT	1.511	0	01:11	2.37	1.17	1.00
C42	CONDUIT	1.510	0	01:11	2.37	2.67	1.00
C43	CONDUIT	1.513	0	01:11	2.38	1.84	1.00
C44	CONDUIT	1.514	0	01:11	2.40	2.54	1.00
C45	CONDUIT	1.888	0	01:09	3.50	3.41	0.89
C46	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C47	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C48	CONDUIT	0.000	0	00:00	0.00	0.00	0.29
C49	CONDUIT	0.026	0	01:10	0.64	0.22	0.46
C5	CONDUIT	0.117	0	01:10	1.18	0.76	1.00
C50	CONDUIT	0.051	0	01:10	0.72	0.43	0.61
C51	CONDUIT	0.064	0	01:10	0.79	0.53	0.81
C52	CONDUIT	0.049	0	01:10	0.60	0.43	0.99
C53	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C54	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C55	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C56	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C57	CONDUIT	0.000	0	00:00	0.00	0.00	0.50
C58	CONDUIT	1.877	0	01:11	2.85	0.86	0.82
C59	CONDUIT	0.095	0	01:12	0.86	0.33	1.00
C6	CONDUIT	0.133	0	01:09	1.22	0.88	1.00
C60	CONDUIT	0.459	0	01:59	1.28	0.94	1.00
C62	CONDUIT	0.059	0	01:10	2.45	0.63	1.00
C63	CONDUIT	0.066	0	01:09	3.74	0.64	1.00
C64	CONDUIT	0.067	0	01:10	2.12	0.58	1.00
C65	CONDUIT	0.132	0	01:10	4.39	1.09	1.00
C66	CONDUIT	0.086	0	01:09	2.85	0.37	1.00
C67	CONDUIT	0.051	0	01:10	2.20	0.40	1.00
C68	CONDUIT	0.036	0	01:10	1.51	0.28	1.00
C69	CONDUIT	0.240	0	01:08	4.89	1.08	1.00
C7	CONDUIT	0.170	0	01:09	1.55	0.89	1.00
C70	CONDUIT	0.241	0	01:09	4.92	0.97	1.00
C71	CONDUIT	0.126	0	01:06	4.01	1.27	1.00
C72	CONDUIT	0.068	0	01:07	2.17	0.67	1.00
C73	CONDUIT	0.055	0	01:17	1.12	0.34	1.00
C74	CONDUIT	0.034	0	01:08	1.08	0.32	1.00
C75	CONDUIT	0.122	0	01:15	3.87	0.95	1.00
C76	CONDUIT	0.219	0	01:11	4.46	0.98	1.00
C77	CONDUIT	0.021	0	01:09	0.94	0.15	0.91
C78	CONDUIT	0.285	0	01:10	5.81	1.24	1.00

C79	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C8	CONDUIT	0.122	0	01:17	1.73	1.10	1.00
C80	CONDUIT	0.000	0	00:00	0.00	0.00	0.49
C81	CONDUIT	0.001	0	01:10	0.06	0.01	0.50
C82	CONDUIT	0.048	0	01:12	1.90	0.45	0.76
C83	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C84	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C85	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C9	CONDUIT	0.156	0	01:22	1.21	0.77	1.00
1	ORIFICE	0.029	0	01:10			
100	ORIFICE	0.000	0	00:00			
119	ORIFICE	0.192	0	01:10			
12	ORIFICE	0.048	0	01:12			
120	ORIFICE	0.000	0	00:00			
13	ORIFICE	0.000	0	00:00			
14	ORIFICE	0.000	0	00:00			
151	ORIFICE	0.000	0	00:00			
2	ORIFICE	0.459	0	01:59			1.00
3	ORIFICE	0.248	0	01:09			
37	ORIFICE	0.000	0	00:00			
38	ORIFICE	0.122	0	01:16			
39	ORIFICE	0.116	0	01:10			
40	ORIFICE	0.059	0	01:39			
41	ORIFICE	0.010	0	01:10			
42	ORIFICE	0.104	0	01:08			
43	ORIFICE	0.325	0	01:09			
5	ORIFICE	0.066	0	01:10			
6	ORIFICE	0.106	0	01:10			
7	ORIFICE	0.249	0	01:09			
8	ORIFICE	0.068	0	01:10			
80	ORIFICE	0.000	0	00:00			
85	ORIFICE	0.032	0	01:10			
86	ORIFICE	0.022	0	01:10			
87	ORIFICE	0.034	0	01:10			
88	ORIFICE	0.129	0	01:06			
89	ORIFICE	0.069	0	01:07			
90	ORIFICE	0.000	0	00:00			
91	ORIFICE	0.000	0	00:00			
92	ORIFICE	0.000	0	00:00			
94	ORIFICE	0.288	0	01:10			
96	ORIFICE	0.222	0	01:11			
97	ORIFICE	0.035	0	01:08			
98	ORIFICE	0.123	0	01:15			
99	ORIFICE	0.056	0	01:17			
10	WEIR	0.000	0	00:00			0.00
18	WEIR	0.000	0	00:00			0.00
19	WEIR	0.000	0	00:00			0.00
9	WEIR	0.000	0	00:00			0.00
A211_Weir	WEIR	0.391	0	01:10			0.83
RYCB1_Weir	WEIR	0.060	0	01:10			0.24
RYCB2_Weir	WEIR	0.000	0	00:00			0.00
RYCB3_Weir	WEIR	0.294	0	01:10			0.68
RYCB4_Weir	WEIR	0.302	0	01:12			0.69
RYCB5_Weir	WEIR	0.000	0	00:00			0.00
RYCB6_Weir	WEIR	0.000	0	00:00			0.00
RYCB7_Weir	WEIR	0.066	0	01:09			0.76
RYCB8_Weir	WEIR	0.000	0	00:00			0.00

RYCB9_Weir	WEIR	0.020	0	01:10	0.11
StreetA_Weir	WEIR	0.461	0	01:12	0.92
StreetB_Weir1	WEIR	0.524	0	01:11	1.00
StreetB_Weir2	WEIR	0.616	0	01:12	1.00
SWM_Pond_Weir	WEIR	0.000	0	00:00	0.00
W17	WEIR	0.297	0	01:10	2.16
W18	WEIR	0.264	0	01:10	1.99
W19	WEIR	0.236	0	01:10	1.85
W20	WEIR	0.213	0	01:10	1.73
W21	WEIR	0.000	0	00:00	0.00
W27	WEIR	0.000	0	00:00	0.00
W30	WEIR	0.000	0	00:00	0.00
W31	WEIR	0.000	0	00:00	0.00
W6	WEIR	0.000	0	00:00	0.00
W8	WEIR	0.000	0	00:00	0.00
W9	WEIR	0.000	0	00:00	0.00

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Flow Classification Summary
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	Adjusted	---------- Fraction of Time in Flow Class -------								
	/Actual		Up	Down	Sub	Sup	Up	Down	Norm	Inlet
Conduit	Length	Dry	Dry	Dry	Crit	Crit	Crit	Crit	Ltd	Ctrl
4	1.00	0.31	0.43	0.00	0.26	0.00	0.00	0.00	0.60	0.00
C1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C10	1.00	0.00	0.00	0.00	0.19	0.81	0.00	0.00	0.42	0.00
C11	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.71	0.00
C12	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.82	0.00
C13	1.00	0.00	0.00	0.00	0.12	0.88	0.00	0.00	0.99	0.00
C14	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.30	0.00
C15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.37	0.00
C16	1.00	0.00	0.00	0.00	0.09	0.91	0.00	0.00	0.92	0.00
C17	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.09	0.00
C18	1.00	0.00	0.00	0.00	0.33	0.67	0.00	0.00	0.00	0.00
C19	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.36	0.00
C2	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C20	1.00	0.00	0.00	0.00	0.73	0.27	0.00	0.00	0.87	0.

C21	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01
0.00									
C22	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.12
0.00									
C23	1.00	0.00	0.01	0.00	0.54	0.45	0.00	0.00	0.13
0.00									
C24	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.34
0.00									
C25	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.07
0.00									
C26	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.03
0.00									
C27	1.00	0.00	0.82	0.00	0.18	0.00	0.00	0.00	0.50
0.00									
C28	1.00	0.00	0.81	0.00	0.19	0.00	0.00	0.00	0.51
0.00									
C29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.30
0.00									
C3	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C30	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.00
0.00									
C31	1.00	0.00	0.00	0.00	0.58	0.42	0.00	0.00	0.45
0.00									
C32	1.00	0.00	0.00	0.00	0.13	0.87	0.00	0.00	0.00
0.00									
C33	1.00	0.00	0.00	0.00	0.13	0.87	0.00	0.00	0.60
0.00									
C34	1.00	0.01	0.00	0.00	0.14	0.86	0.00	0.00	0.47
0.00									
C35	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.79
0.00									
C36	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.79
0.00									
C37	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.09
0.00									
C38	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C39	1.00	0.00	0.00	0.00	0.97	0.02	0.00	0.00	0.03
0.00									
C4	1.00	0.00	0.00	0.00	0.06	0.94	0.00	0.00	0.79
0.00									
C40	1.00	0.00	0.00	0.00	0.96	0.04	0.00	0.00	0.11
0.00									
C41	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.10
0.00									
C42	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C43	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.05
0.00									
C44	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.02
0.00									
C45	1.00	0.00	0.00	0.00	0.72	0.28	0.00	0.00	0.01
0.00									
C46	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C47	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C48	1.00	0.76	0.24	0.00	0.00	0.00	0.00	0.00	0.00
0.00									

C49	1.00	0.32	0.44	0.00	0.24	0.00	0.00	0.00	0.58
0.00									
C5	1.00	0.00	0.00	0.00	0.13	0.87	0.00	0.00	0.68
0.00									
C50	1.00	0.31	0.01	0.00	0.68	0.00	0.00	0.00	0.39
0.00									
C51	1.00	0.31	0.00	0.00	0.69	0.00	0.00	0.00	0.13
0.00									
C52	1.00	0.30	0.01	0.00	0.69	0.00	0.00	0.00	0.03
0.00									
C53	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C54	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C55	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C56	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C57	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C58	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.37
0.00									
C59	1.00	0.00	0.30	0.00	0.70	0.00	0.00	0.00	0.00
0.00									
C6	1.00	0.01	0.00	0.00	0.11	0.88	0.00	0.00	0.03
0.00									
C60	1.00	0.00	0.00	0.00	0.96	0.04	0.00	0.00	0.00
0.00									
C62	1.00	0.01	0.81	0.00	0.18	0.00	0.00	0.00	0.55
0.00									
C63	1.00	0.01	0.81	0.00	0.18	0.00	0.00	0.00	0.54
0.00									
C64	1.00	0.00	0.82	0.00	0.18	0.00	0.00	0.00	0.53
0.00									
C65	1.00	0.00	0.85	0.00	0.15	0.00	0.00	0.00	0.55
0.00									
C66	1.00	0.00	0.88	0.00	0.11	0.00	0.00	0.00	0.55
0.00									
C67	1.00	0.01	0.84	0.00	0.15	0.00	0.00	0.00	0.55
0.00									
C68	1.00	0.00	0.83	0.00	0.16	0.00	0.00	0.00	0.53
0.00									
C69	1.00	0.00	0.00	0.00	0.08	0.92	0.00	0.00	0.82
0.00									
C7	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.84
0.00									
C70	1.00	0.00	0.00	0.00	0.68	0.32	0.00	0.00	0.82
0.00									
C71	1.00	0.00	0.00	0.00	0.11	0.89	0.00	0.00	0.83
0.00									
C72	1.00	0.00	0.78	0.00	0.22	0.00	0.00	0.00	0.52
0.00									
C73	1.00	0.00	0.80	0.00	0.19	0.00	0.00	0.00	0.52
0.00									
C74	1.00	0.01	0.79	0.00	0.20	0.00	0.00	0.00	0.53
0.00									
C75	1.00	0.00	0.85	0.00	0.15	0.00	0.00	0.00	0.55
0.00									
C76	1.00	0.00	0.00	0.00	0.76	0.24	0.00	0.00	0.84
0.00									

C77	1.00	0.00	0.87	0.00	0.13	0.00	0.00	0.00	0.58
0.00									
C78	1.00	0.00	0.00	0.00	0.73	0.27	0.00	0.00	0.72
0.00									
C79	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C8	1.00	0.00	0.00	0.00	0.11	0.89	0.00	0.00	0.82
0.00									
C80	1.00	0.32	0.68	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C81	1.00	0.31	0.63	0.00	0.07	0.00	0.00	0.00	0.61
0.00									
C82	1.00	0.30	0.56	0.00	0.12	0.02	0.00	0.00	0.60
0.00									
C83	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C84	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C85	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C9	1.00	0.00	0.00	0.00	0.25	0.75	0.00	0.00	0.25
0.00									

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Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
4	0.01	0.01	0.01	0.01	0.01
C10	0.36	0.36	0.39	0.01	0.01
C11	0.39	0.39	0.64	0.01	0.01
C12	0.36	0.36	0.64	0.02	0.02
C13	0.01	0.01	0.25	0.01	0.01
C14	0.20	0.20	0.21	0.01	0.01
C15	0.21	0.21	0.24	0.01	0.01
C16	0.03	0.03	0.30	0.01	0.01
C17	0.24	0.24	0.28	0.01	0.01
C18	0.28	0.28	0.32	0.01	0.01
C19	0.32	0.32	0.38	0.01	0.01
C20	0.16	0.16	0.40	0.01	0.01
C21	0.35	0.35	0.37	0.01	0.01
C22	0.37	0.37	0.39	0.01	0.01
C23	0.39	0.39	0.41	0.01	0.01
C24	0.41	0.41	0.53	0.01	0.01
C25	0.41	0.41	0.41	0.38	0.37
C26	0.38	0.41	0.38	0.50	0.38
C27	0.22	0.22	1.86	0.01	0.01
C28	0.23	0.23	1.89	0.01	0.01
C29	0.35	0.38	0.36	0.44	0.35
C30	0.39	0.39	0.40	0.01	0.01
C31	0.38	0.40	0.38	0.20	0.15
C32	0.36	0.38	0.36	0.45	0.36
C33	0.36	0.36	0.41	0.16	0.16

C34	0.41	0.41	0.42	0.32	0.31
C35	0.42	0.42	1.34	0.30	0.30
C36	0.32	0.32	1.61	0.13	0.13
C37	0.50	0.50	0.58	0.23	0.24
C38	0.58	0.58	0.91	0.28	0.27
C39	0.91	0.91	1.14	0.24	0.23
C4	0.13	0.13	0.20	0.01	0.01
C40	1.13	1.14	1.48	0.11	0.11
C41	0.19	0.19	0.21	0.13	0.13
C42	0.15	0.21	0.15	0.52	0.15
C43	0.11	0.15	0.11	0.30	0.11
C44	0.01	0.11	0.01	0.50	0.01
C45	0.01	0.01	0.01	0.58	0.01
C5	0.19	0.19	0.21	0.01	0.01
C51	0.01	0.01	0.01	0.01	0.01
C52	0.01	0.01	0.03	0.01	0.01
C58	0.01	0.01	1.71	0.01	0.01
C59	0.03	0.03	1.88	0.01	0.01
C6	0.21	0.21	0.27	0.01	0.01
C60	1.83	1.83	1.83	0.01	0.01
C62	0.18	0.18	0.24	0.01	0.01
C63	0.21	0.21	0.32	0.01	0.01
C64	0.22	0.22	0.45	0.01	0.01
C65	0.15	0.15	0.30	0.01	0.01
C66	0.16	0.16	0.36	0.01	0.01
C67	0.19	0.19	0.40	0.01	0.01
C68	0.21	0.21	1.86	0.01	0.01
C69	0.30	0.30	0.67	0.01	0.01
C7	0.27	0.27	0.34	0.01	0.01
C70	0.29	0.29	1.82	0.01	0.01
C71	0.38	0.38	0.56	0.06	0.06
C72	0.31	0.31	0.51	0.01	0.01
C73	0.29	0.29	0.39	0.01	0.01
C74	0.26	0.26	0.46	0.01	0.01
C75	0.15	0.15	1.86	0.01	0.01
C76	0.17	0.17	2.01	0.01	0.01
C77	0.01	0.01	1.85	0.01	0.01
C78	0.17	0.17	2.13	0.11	0.11
C8	0.29	0.29	0.37	0.12	0.12
C81	0.01	0.01	0.11	0.01	0.01
C82	0.01	0.01	1.64	0.01	0.01
C9	0.31	0.31	0.36	0.01	0.01

Analysis begun on: Wed Jul 20 15:35:00 2022
Analysis ended on: Wed Jul 20 15:35:01 2022
Total elapsed time: 00:00:01