APPENDIX 10

STORMWATER MANAGEMENT STRATEGY

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TECHNICAL MEMORANDUM

TO: Kathleen Johnson, EIT, Transportation Planning & Design, City of London **RVA:** 205505

FROM: Henry Huotari, P.Eng., Senior Project Manager, Transportation

DATE: April 29, 2022

SUBJECT: Stormwater Management Strategy for Environmental Assessment for Oxford Street West and Gideon Drive Intersection Improvements

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1.0 INTRODUCTION

1.1 Project Description

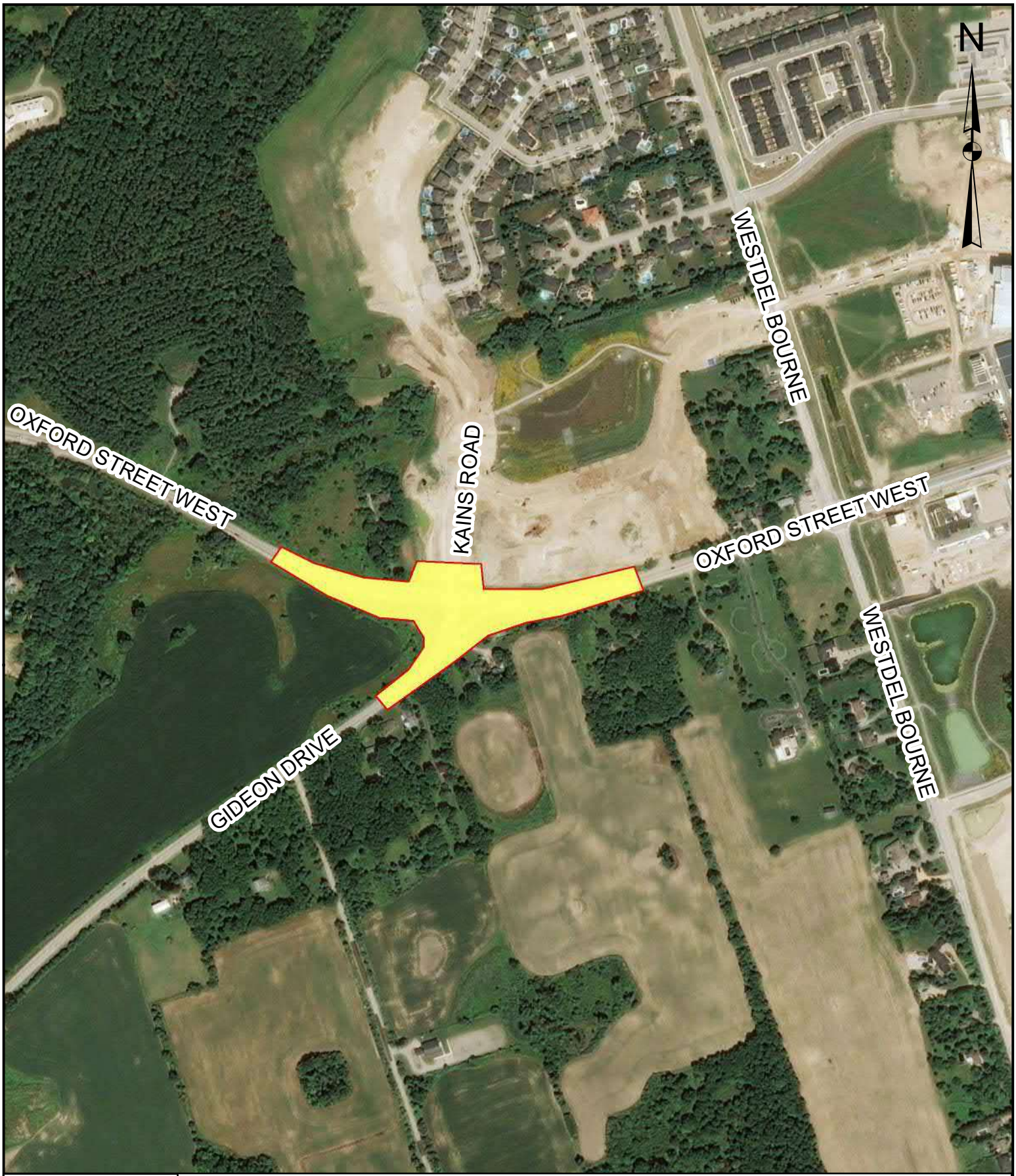
R.V. Anderson Associates Limited (RVA) was retained by the City of London (the city) to complete an Environmental Assessment (EA) Study for Oxford Street West and Gideon Drive Intersection Improvements in London, Ontario. The Oxford Street West and Gideon Drive intersection is located on the west end of the city. Oxford Street West is a two-lane rural roadway that links east and west portions of the city with an approximate Average Annual Daily Traffic (AADT) of 15,500-18,500. Gideon Drive is a two-lane rural roadway with significantly less AADT of 2,500 and forms the south leg of the intersection. Kains Road was recently connected to the intersection forming a fourth leg. There are existing ditches and driveway culverts along the roadway on Oxford Street West and Gideon Drive that convey stormwater runoff towards the Tributary 'C' located within the downstream Thames River Subwatershed and the Upper Thames River Conservation Authority (UTRCA).

The purpose of this Technical Memorandum (TM) is to characterize the existing condition and identify road drainage improvements within the study corridor and provide a stormwater management strategy. In addition, the identified road drainage improvements are compared with the existing condition to demonstrate stormwater targets are met through Best Management Practices (BMPs).

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1.2 Project Background

The project area is located along Oxford Street West and Gideon Drive. **Figure 1-1** represents the project area. The project area includes approximately 500 m of roadway on Oxford Street West and 150 m of roadway on Gideon Drive. The total length of the project area is approximately 650 m including the Oxford Street West and Gideon Drive intersection. Stormwater runoff generally flows east to west on Oxford Street West while stormwater runoff from Gideon Drive flows north towards Oxford Street West, ultimately draining towards the Tributary 'C'. Stormwater runoff along Kains Road generally flows north to a stormwater management facility located within an ongoing residential development. The surrounding land use is a mixture of on-going and future residential developments, and open lands.



Legend

PROJECT AREA

ENVIRONMENTAL ASSESSMENT FOR OXFORD DRIVE WEST & GIDEON DRIVE INFRASTRUCTURE IMPROVEMENTS

FIGURE 1-1: PROJECT AREA

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0 37.5 75 150 225 300 Meters

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1.3 Background Studies, Guidelines and Policies

The following background studies, guidelines and policies were obtained and reviewed as part of the TM and were utilized as the basis for the stormwater management design:

- Functional Design of the Tributary 'C' Storm Drainage and Stormwater Management Servicing Works, Downstream Thames River Subwatershed, Matrix Solutions, August 2015.
- 14 Gideon Drive & 2012 Oxford Street West, London, Stormwater Management Brief, Stantec, December 2019.
- Preliminary Geotechnical Assessment, Oxford Street West and Gideon Drive Intersection Improvements, London, Ontario, October 2021.
- Topography Data, Ontario Basic Mapping, London, Ontario, downloaded October 2021.
- Ontario Digital Terrain Model (Lidar-Derived), Ontario Geohub, downloaded November 2021.
- Design Specifications & Requirements Manual, City of London, August 2019.
- Environmental Planning Policy Manual for the Upper Thames River Conservation Authority, Upper Thames River Conservation Authority (UTRCA), October 2017.

1.4 Purpose

The purpose of this TM is to provide a stormwater management (SWM) strategy that will identify and address water quantity, water quality, water balance related stormwater runoff impacts that are associated with the proposed roadway alignment and roundabout design. The SWM strategy for the project area will address the following:

a) Policies and requirements of local municipal and governing regulatory agencies;
b) External infrastructure and environmental constraints of the subject area; and
c) Pre-development and post development conditions of the subject area.

2.0 EXISTING SITE CONDITIONS CHARACTERIZATION

2.1 Soil Conditions

A preliminary geotechnical assessment has been carried out by Golder Associates dated October 2021. The geotechnical assessment summarized that the soil conditions encountered generally consisted of topsoil or granular fill materials overlying, sandy silt, sand, and gravel and occasionally layers of clayey silt till. Excerpts from the geotechnical assessment has been attached in **Appendix A.**

2.2 Subcatchment Delineations, External Drainage Areas and Drainage Patterns

The existing subcatchments and external drainage areas of Oxford Street West and Gideon Drive were delineated based on the Ontario Geohub's Lidar-Derived data, and localized survey information. Stormwater runoff generally flows west on Oxford Street West and north on Gideon Drive towards Oxford Street West, ultimately discharging to Tributary 'C' of Thames River.

There are roadside ditches on both sides of Oxford Street West. East of the Oxford Street West and Gideon Drive intersection, the north side of Oxford Street West drains towards a ditch that is captured through a Ditch Inlet Catchbasin (DICB). The DICB is connected to the existing storm sewer, which was constructed as part of the Eagle Ridge Phase 2 subdivision, conveys flow along Kains Road to the existing SWM pond located within the newly constructed subdivision. Upon reviewing the "Storm Area Plan" drawing dated November 2020, it was understood further that an area of 0.67 ha with a runoff coefficient of 0.45 was planned to be captured for a 2-year flow within the existing SWM pond. The reviewed drawing has been attached in **Appendix A** for reference. The south portion of Oxford Street West (east of the Oxford Street West and Gideon Drive intersection) drains towards roadside ditches located on the south side and gets captured through multiple catchbasins and conveyed west through CSP culverts of size 300 mm, 400 mm, and 450 mm diameter. West of the intersection of Oxford Street West and Gideon Drive intersection stormwater runoff flows towards north and south road ditches and ultimately drains towards the Tributary 'C' of Thames River.

Stormwater runoff on Gideon Drive flows towards the Oxford Street West through roadside ditches and a 450 mm culvert that crosses the Gideon Drive and connects to Oxford Street West's south roadside ditches. It is important to note that there is a high point on Gideon Drive that splits flow north and south. Refer to **Figure 2-1** for a schematic representation of existing drainage condition of the project area.



Legend

- OUTFALLS
- EXISTING ROAD SIDE DITCHES
- STORM SEWERS / CULVERTS
- EXTERNAL DRAINAGE AREAS
- ROW SUBACTCHMENTS

ENVIRONMENTAL ASSESSMENT FOR OXFORD DRIVE WEST & GIDEON DRIVE INFRASTRUCTURE IMPROVEMENTS

FIGURE 2-1: EXISTING DRAINAGE CONDITION

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0 25 50 100 150 200 Meters

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3.0 STORMWATER OBJECTIVES

3.1 Quantity Control

The stormwater management objective for Oxford Street West and Gideon Drive intersection improvements is to develop a stormwater management strategy that will ensure post-development peak flows are controlled to pre-development peak flows.

The intersection improvements slightly increase the overall imperviousness (<1%) under the proposed conditions. The slight imperviousness stems from the proposed roundabout and urbanization of the intersection where some grass areas are proposed to be replaced with impervious surface. As a result, water quantity mitigation measures in the form of Low Impact Development (LID) features are proposed. The proposed LID features are enhanced swales including check dams which are discussed in detail in **Section 5.0**. It is expected that the LID features will ensure post-development peak flows are controlled to pre-development peak flow levels for all 2-100-year storm events under proposed conditions. Based on preliminary geotechnical assessment the soils within the project area are anticipated to have high infiltration, and the proposed LID features will function as intended. It is important to note that prior to detailed design of the LID features, a detailed geotechnical assessment in the areas where LID features are proposed must be carried out to verify the expected infiltration rates. The total imperviousness calculations of pre-development conditions and post-development conditions are presented in **Appendix B**.

3.2 Quality Control

As per the City's stormwater management criteria, a Level 1 Enhanced (80% TSS removal) quality control is required for the project area. The replacement of the existing roadside ditches with enhanced swales and check dams are expected to meet the Level 1 target (80% TSS Removal). The 25 mm 4-hour storm event will be simulated to quantify velocity and depth of flow within the proposed enhanced swales. Further discussion is presented in **Section 5.0**.

3.3 Water Balance

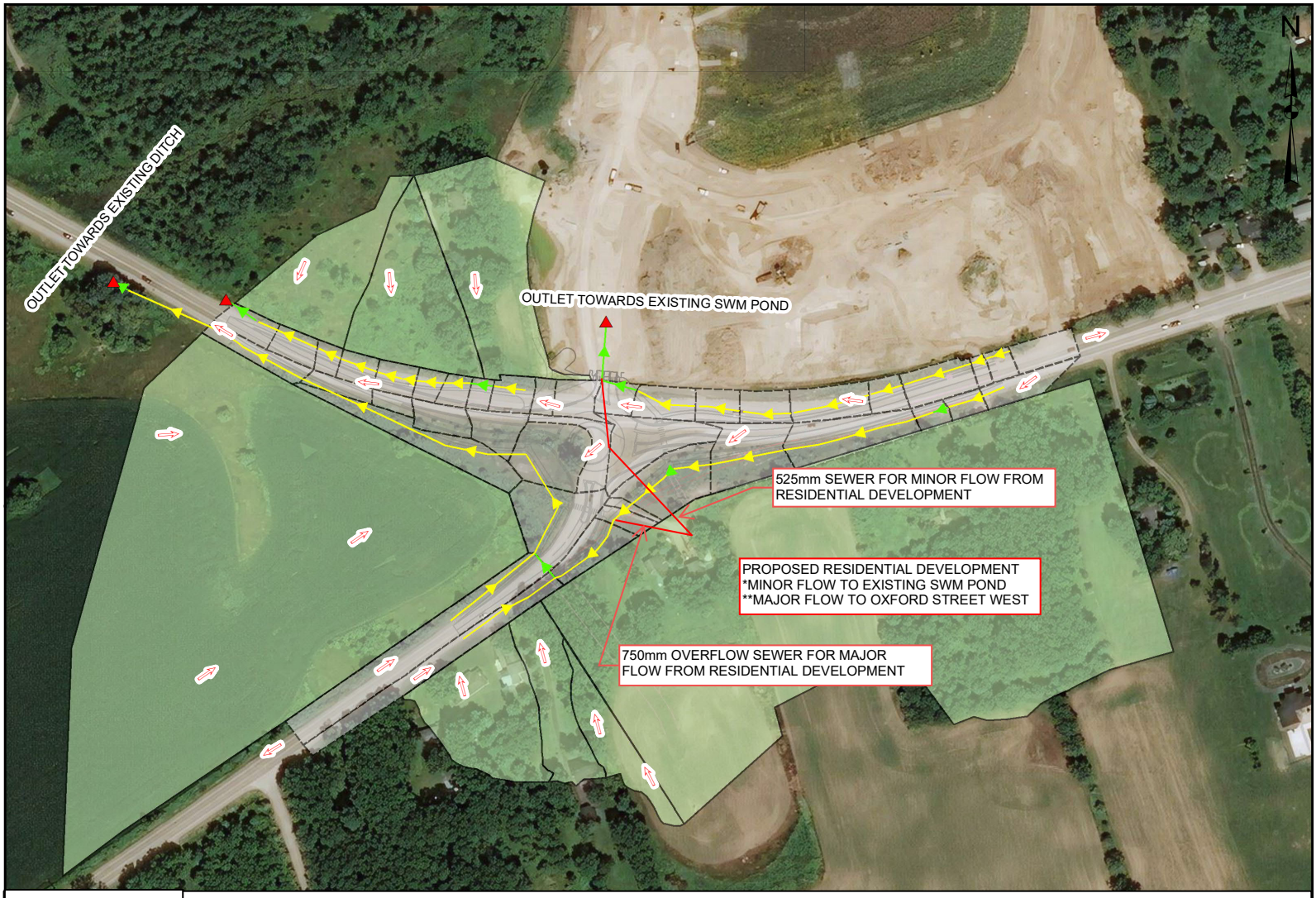
As mentioned earlier, the project area has a slight increase in overall imperviousness (<1%) under the proposed condition. As such, no specific water balance targets are required. Furthermore, the use of enhanced swale and check dams will promote infiltration.

4.0 PROPOSED DRAINAGE CONDITIONS

4.1 Drainage Pattern

Under proposed conditions, the intersection at Oxford Street West and Gideon Drive will be improved and urbanized and converted to a roundabout. Beyond the roundabout a rural cross section will be maintained. Kains Road will remain urbanized. Intermittent curb cuts, semi-mountable concrete curbs, narrow gutters and trench drains are proposed to provide runoff outlets into the enhanced swales. The drainage pattern in the proposed condition is proposed to be similar to the existing condition. Stormwater runoff on Oxford Street West will flow west towards the Tributary 'C' through enhanced swales equipped with check dams. As mentioned earlier, the north portion of Oxford Street West has a DICB that captures the 2-year road runoff and conveys it to the existing SWM Pond through storm sewers. It is proposed that the DICB continues to capture the 2-year road runoff and discharge towards the stormwater management facility via storm sewers on Kains Road. The major flow is proposed to be conveyed through road and enhanced swales. Drainage from Gideon Drive will flow north through enhanced swales and connect to enhanced swales on the south side of Oxford Street West, ultimately towards the Tributary 'C' of Thames River. Locations of the catch basins needed to capture the minor flows that are to be directed the SWMF A will be identified during detailed design.

The external drainage areas that drain towards the roadside ditches in existing conditions will also be accommodated in the proposed enhanced swales. RVA understands that there is a proposed development on 14 Gideon Drive and 2012 Oxford Street West which is proposing to discharge minor flows towards the stormwater management facility via storm sewers on Kains Road. A 525mm sewer is proposed to be connected to the storm sewer within the roundabout and outlet to the Kains Road sewer. It is noted that the ultimate sizing of this sewer shall be in accordance with the storm servicing strategy requirements for the proposed 5.8 Ha subdivision development on the South side of Oxford Street West. The major flow from the development will overflow to the ditches along the roundabout and flow west along Oxford Street West, ultimately outletting to Tributary 'C' of Thames River. The proposed enhanced swales are adequately sized to convey the major flow from the development. A schematic figure has been presented in **Figure 4-1** to demonstrate the proposed drainage areas and conveyance plan.



ENVIRONMENTAL ASSESSMENT FOR OXFORD DRIVE WEST & GIDEON DRIVE INFRASTRUCTURE IMPROVEMENTS

FIGURE 4-1: PROPOSED DRAINAGE PATTERN

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5.0 HYDROLOGIC AND HYDRAULIC MODELING

5.1 Model Choice

PCSWMM (version 7.4.3220) was used to quantify the drainage for the project area. PCSWMM is an advanced modelling software for EPA SWMM5 stormwater, wastewater and watershed systems in either small or large rural and urban areas. PCSWMM is widely used in the province of Ontario to achieve and/or simulate stormwater management targets.

5.2 Design Storm

Based on the City of London's SWM criteria, the Chicago type distribution was used to evaluate peak flows. The Intensity – Duration – Frequency (IDF) curves used for generating the 3-hour Chicago storm events were attained from the rainfall intensity curves as per the City of London's Design Specifications & Requirements Manual. The hydrologic and hydraulic response of the pre-development and post-development area were evaluated for the 25 mm, 2-year, 5-year, 10-year, 25-year, 50-year and 100-year design storm events. The A, B and C values to determine the rainfall intensities are shown in **Table 5-1.**

Table 5-1: City of London Rainfall - IDF Curve Parameters

Storm Event	*A*	*B*	*C*
25 mm*	538.85	6.331	0.809
2-Year	754.36	6.011	0.810
5-Year	1183.740	7.641	0.838
10-Year	1574.382	9.025	0.860
25-Year	2019.372	9.824	0.875
50-Year	2270.665	9.984	0.876
100-Year	2619.363	10.5	0.884

**IDF parameters for the 25 mm event for a 4-hour storm duration.*

5.3 Hydrologic Modeling

The pre-development catchment areas were delineated based on the Ontario Digital Terrain Model (Lidar-Derived). The post-development catchments were assumed to be

similar since a detailed grading plan is not available at this stage. However, in the detailed design stage, the post-development catchments may need to be modified to reflect the grading plan. In accordance with the City of London's standards, the impervious surfaces were assumed to have a runoff coefficient of 0.9. The pervious surfaces such as enhanced swale and landscaped areas were assumed to have a runoff coefficient of 0.25. As mentioned earlier, the geotechnical assessment indicated that the soils present are sand and gravel with traces of clayey silt till which is categorized as hydrologic soil Group B with relatively medium infiltration rate. Based on the hydrologic soil Group B, a CN number of 61 was used for the pervious areas. The Group B soil characterization represents a conservative approach to the hydrologic modelling as the overlying soils are deep sand and it is anticipated that a more infiltration will occur. A detailed overall runoff coefficient was also calculated for pre-development and post-development areas. Refer to **Appendix B** for the overall runoff calculations and detailed PCSWMM input and parameters.

The 2-100-year storm events were simulated under pre-development and post-development conditions and the results are compared for the two (2) locations (north and south of Oxford Street West) in **Table 5-2,** which outlet to existing ditch sections upstream of Tributary 'C'. It is important to note that RVA has only modelled ditch sections up to the project boundary. For modelling simplification, two outlet locations are modelled as outfalls, however, RVA understands that the actual outfall location is further downstream and beyond this project's limit.

As mentioned in **Section 4.0**, the proposed subdivision development on 14 Gideon Drive and 2012 Oxford Street West has proposed to discharge minor flow to the existing SWM pond via storm sewers on Kains Road and major flow through the Oxford Street West, ultimately towards Tributary 'C'. It is important to note that in the pre-development condition, the proposed development is considered as an undeveloped lands with a total imperviousness of 7%, however, in the post-development condition, the proposed development is considered to have a total imperviousness of 59%. In addition, the proposed development is not expected to provide post-development peak flow reduction through quantity control and as such, due to the higher imperviousness level, it is expected that the peak flow conveyed towards the existing ditch section and ultimately towards Tributary 'C' will be higher than the pre-development peak flows. RVA recommends coordinating with the consultant of the proposed development during the detailed design stage of the roundabout.

Table 5-2: Pre-Development vs. Post-Development Flow Comparison

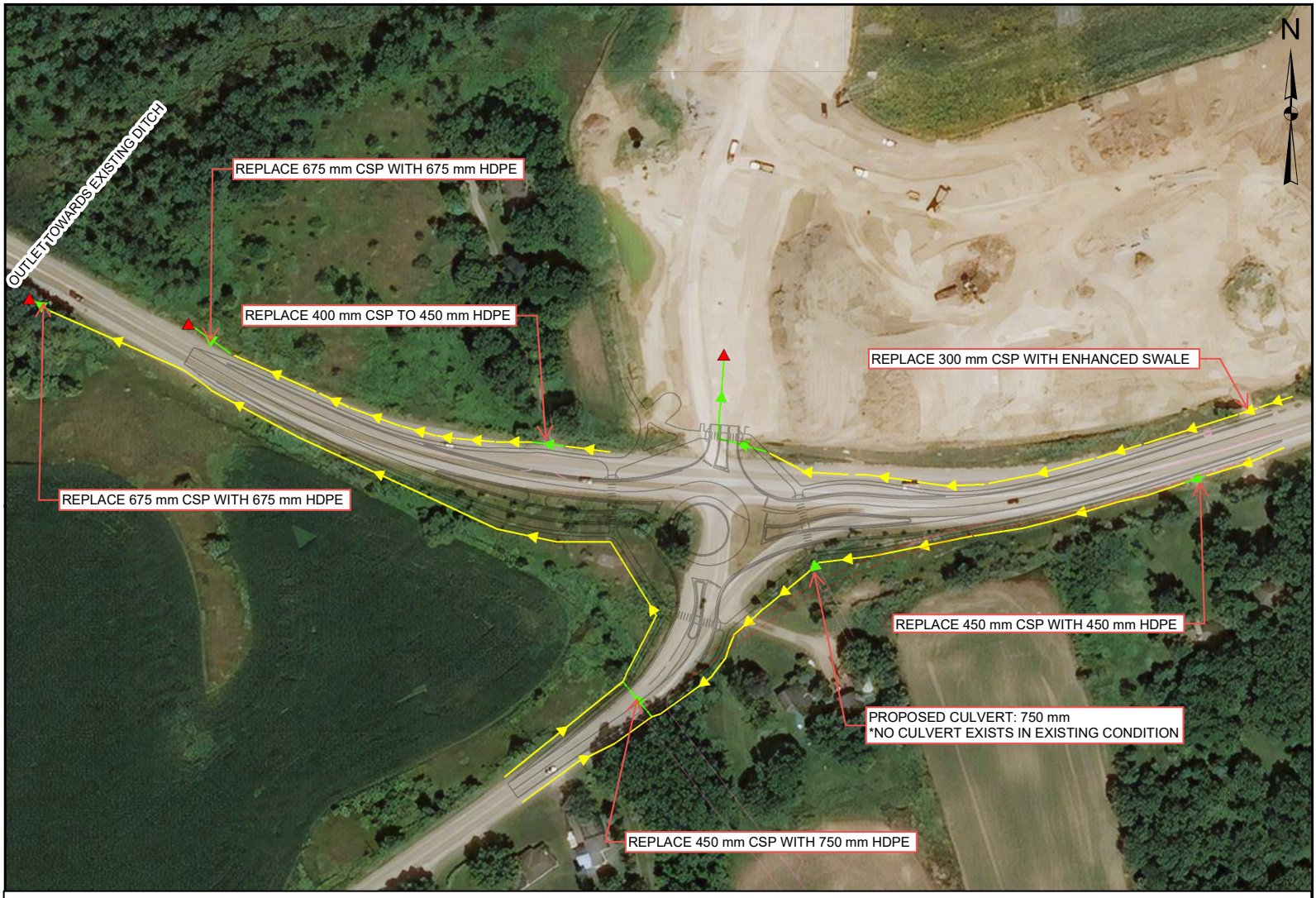
	North Ditch (m^3/s)			South Ditch (m^3/s)		
Storm Event	**Pre-Development**	**Post-Development (With Existing External Development Area)**	**Post-Development (With Future External Development)**	**Pre-Development**	**Post-Development (With Existing External Development Area)**	**Post-Development (With Future External Development)**
25 mm	0.071	0.007	0.007	0.161	0.049	0.064
2-Year	0.127	0.009	0.009	0.308	0.103	0.129
5-Year	0.128	0.012	0.012	0.313	0.201	0.265
10-Year	0.147	0.016	0.013	0.377	0.269	0.337
25-Year	0.175	0.048	0.027	0.449	0.331	0.533
50-Year	0.196	0.074	0.048	0.512	0.418	0.674
100-Year	0.216	0.080	0.060	0.572	0.511	0.813

As per **Table 5-2**, it is evident that the peak flows during 100-year storm event have increased in the post-development condition for the south side existing ditch due to higher major flows contributing from the proposed development on 14 Gideon Drive and 2012 Oxford Street West.

5.4 Hydraulic Modeling

Under existing conditions, the roadside ditches do not have a well-defined cross-section as per the Ontario Digital Terrain Model (Lidar-Derived). In addition, the culverts are made of Corrugated Steel Plates (CSPs) and in poor condition. As a result, RVA proposes to replace the roadside ditches with enhanced swales and replace all CSP culverts with a High Density Polyethylene (HDPE) culverts. A summary of the replacement culverts and roadside ditches are shown in **Figure 5-1.** It is important to note that during the detailed design all culvert sizing must comply with City standards and UTRCA requirements which may include the potential need to convey the regulatory 250-year storm events. The enhanced swales have a cross-section of 2 m width, 0.75 m height and side slopes of 3:1. In addition, the enhanced swales are also proposed to be equipped with check dams at strategic locations to promote infiltration and reduce velocity for erosion control within the enhanced swales.

The proposed enhanced swales will provide water quality measures to treat the road runoff under the most frequent storm events. These enhanced swales are designed for a maximum velocity of 0.3 m/s for a 4 hour 25 mm Chicago storm event. The hydraulic model was run to assess the velocity during the before-mentioned storm event. There are some sections of the enhanced ditches that exceed the maximum velocity, however, through strategic implementation of check dams it can be reduced in the detailed design stage. Detailed output of the hydraulic model is presented in **Appendix B.**



ENVIRONMENTAL ASSESSMENT FOR OXFORD DRIVE WEST & GIDEON DRIVE INFRASTRUCTURE IMPROVEMENTS

FIGURE 5-1: PROPOSED CULVERT SIZES & REPLACEMENTS

Legend

- OUTFALLS
- PROPOSED ENHANCED SWALES
- STORM SEWERS / CULVERTS

RVA PROJECT NO: 205505	JANUARY 2022

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0 5 10 20 30 40 Meters

6.0 GENERAL EROSION AND SEDIMENT CONTROL MEASURES

Erosion and sediment control measures are generally used to minimize the soil particle detachment, transport, and deposit of the detached soil particles. Construction projects frequently alter the landscapes in which they are built, worsening natural processes. During construction, one of the most significant alterations happen when trees and vegetation are removed which destabilize the soil. It is important to minimize the extent of the disturbance and stabilize the disturbed areas. The following procedures and control measures may be deployed during construction for erosion and sediment control:

- Erosion protection at the source.
- Phasing construction work and minimizing the extent of the disturbance.
- Accelerate the placement of cover to minimize the duration that soils are left exposed to weather events
- Using rock check dams and Ditch Chexx to reduce flow velocities in conveyance swales and channels.
- Stablizing the soil in conveyance swales and channels prior to directing flows to these channels.
- Regular inspection, monitoring and maintenance of erosion and sediment control measures.

It is important to note that during detailed design stage of the roundabout, a comprehensive Erosion and Sediment Control Measure Report needs to be prepared prior to construction.

7.0 RECOMMENDATIONS

The stormwater management strategy has been prepared in support of the intersection improvements at Oxford Street West and Gideon Drive Environmental Assessment (EA) Study. This Technical Memorandum assessed the impacts of the proposed improvements at the intersection on stormwater quantity and quality control and presented a stormwater management strategy to reduce any potential impacts in accordance with the City of London SWM criteria.

The stormwater management strategy consists of the following:

- Replace the roadside ditches within the project area with enhanced swales to reduce peak flows in the post-development condition.
- Replace and upsize CSP culverts with HDPE culverts to reduce chance of flooding.
- Install check dams within the enhanced swales to promote infiltration.

Technical Memorandum prepared by:

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Senior Project Manager

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APPENDIX A

BACKGROUND INFORMATION

GEOTECHNICAL ASSESSMENT EXCERPTS

GOLDER
MEMBER OF WSP

REPORT

PRELIMINARY GEOTECHNICAL ASSESSMENT

Oxford Street West and Gideon Drive Intersection Improvements, London, Ontario

Submitted to:

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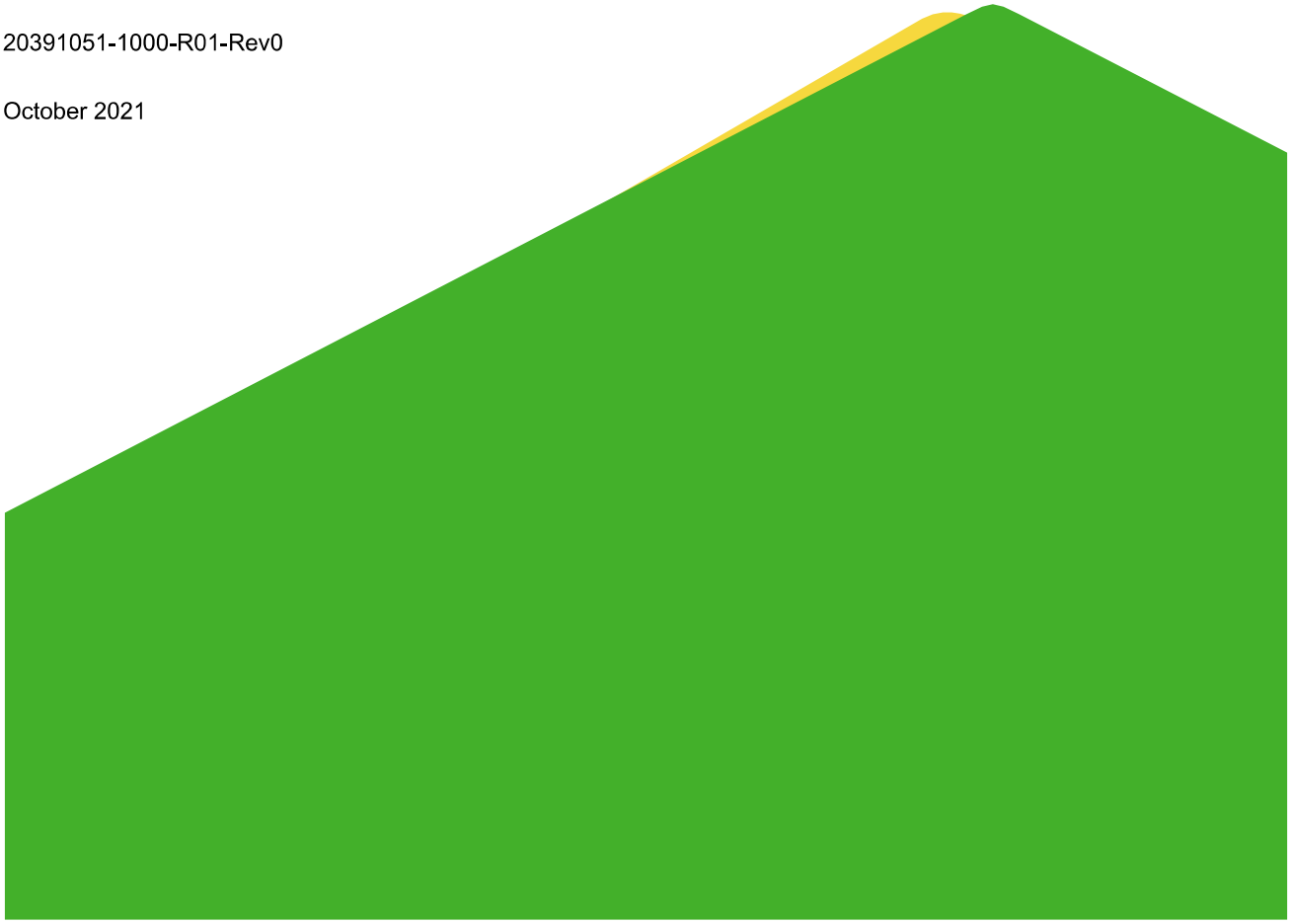
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20391051-1000-R01-Rev0

October 2021



1.0 INTRODUCTION

This report provides the results of the preliminary geotechnical assessment for the above-noted project. It is understood that the project involves assessing design alternatives for future intersection improvements at Oxford Street West and Gideon Drive and the future Kains Road to the north. Based on the information provided, the intersection improvement alternatives include single or multiple lane roundabout options or a signalized intersection. The proposed work also includes installation of a sanitary sewer within the area of the intersection.

The purpose of the geotechnical assessment was to evaluate the subsurface soil and groundwater conditions within the study area based on borehole data from previous geotechnical work along the alignments of the project and provide preliminary geotechnical engineering recommendations for the proposed work. In addition, recommendations for additional site-specific geotechnical exploration and testing are provided.

Authorization to proceed with the preliminary geotechnical assessment was provided by Mr. Henry Huotari, P.Eng., of R.V. Anderson Associates Limited (RVA) in an email dated February 3, 2021.

This report should be read in conjunction with the attached "Important Information and Limitations of This Report" which comprises an integral part of this document. The reader's attention is specifically drawn to this material, as it is essential for proper use and interpretation of the information presented and discussed herein.

2.0 METHODOLOGY

To evaluate the existing subsurface conditions along the subject sections of roadway, existing geotechnical information in the area of the site readily available from our files was compiled and reviewed. The information consisted of topographical mapping, aerial mapping, soils and bedrock mapping, geological data, and site-specific geotechnical data from previous site explorations carried out on or adjacent to the site. The previous site explorations are identified as follows:

- Golder Report No. 001-3139 titled "Geotechnical Investigation, Westdel Bourne and Shore Road Feeder Watermains, London, Ontario" dated October 2000; and
- Golder Report No. 1542537-2000 titled "Geotechnical Investigation, Detailed Design of Tributary "C" Stormwater Management Facility, London, Ontario" dated May 26, 2016.

A field reconnaissance was carried out by a geotechnical engineer from our staff on June 24, 2021 to provide a geotechnical overview of the general site conditions and to carry out a visual pavement condition survey in conjunction with the preparation of this report. The previous Record of Borehole Sheets and selected site photographs are attached in Appendices A and B, respectively, and the approximate locations of the previous boreholes used in the development of this report are illustrated on the Location Plan, Figure 1.

3.0 SITE DESCRIPTION AND PROPOSED PROJECT

Based on the information provided, the study area is located at the intersection of Oxford Street and Gideon Drive and extends to the north to join future Kains Road. The conceptual design of the proposed work is shown on the Location Plan, Figure 1.

Borehole data used for this report was gathered during previous explorations that date from 2000 and 2015 and, therefore, conditions since the time of the explorations may have changed due to roadway reconstruction, impacts on drainage patterns, or other development that occurred since the boreholes were drilled.

5.1 Soil Conditions - General

Based on our review of available geotechnical and geological data, the soil conditions in the study area are generally consistent with the geological mapping described above. The soil conditions encountered in the boreholes, generally consisted of topsoil or granular fill materials overlying, sandy silt, sand, sand and gravel and occasionally layers of clayey silt till.

5.2 Topsoil/Fill

Topsoil was encountered in the boreholes drilled north of the intersection of Oxford Street West and Gideon Drive. The topsoil thickness varied from about 0.3 to 0.6 metres, with an average thickness of about 0.4 metres at the borehole locations. Fill materials were encountered in boreholes drilled in the area of the intersection of Oxford Street and Westdel Bourne and consisted of roadway granulars, sand and gravel, sandy silt and clayey silt. The thickness of the fill was about 1.0 to 2.2 metres.

5.3 Sandy Silt/Silty Sand

Beneath the topsoil, layers of silty sand and sandy silt were encountered in boreholes 103, 104, 105, 108 and 109 (1542537). Where fully penetrated, the sandy silt to silty sand was about 0.8 to 2.1 metres thick. Borehole 109 (1542537) was terminated in silty sand a at depth about 12 metres. In borehole 13 (001-3139), a 0.8-metre-thick layer of sandy silt was encountered beneath the fill. The sandy silt to silty sand had N[1] values, as determined by the standard penetration tests, of 2 to 10 blows per 0.3 metres with water contents of about 11 to 24 per cent, respectively, for the samples obtained.

5.4 Sand/Sand and Gravel

Boreholes 101, 103, 104, 105, 108 and 109 (1542537) and borehole 11, 13 and 14 (001-3139) encountered sand and sand and gravel layers. Where fully penetrated, the sand and sand and gravel layers varied in thickness from about 1.1 to 8.9 metres. The sand and sand and gravel layers had N values ranging from 2 blows per 0.3 metres to 60 blows per 0.15 metres and water contents ranging from about 2 to 21 per cent.

5.5 Silt

Borehole 104 (1542537) encountered silt layers beneath the sandy silt and sand layers. The silt layers were about 2.0 and 0.4 metres thick, respectively. The silt had N values of 9 to 24 blows per 0.3 metres and water

[1] The SPT N value is defined as the number of blows required by a 63.5-kilogram hammer dropped from a height of 760 millimetres to drive a split spoon sampler a distance of 300 millimetres into the soil after having first penetrated 150 millimetres.

6.2 Excavations

It is anticipated that the excavations for the proposed sanitary sewer will be about 10 metres in depth to about elevation 253 metres and will primarily encounter the existing pavement structure, surficial fill or topsoil overlying fill, silt, sands, sand and gravel and cohesive deposits of silty clay and clayey silt. Groundwater was encountered in several of the boreholes previously drilled in the vicinity of the project. Based on the results of the previous boreholes, groundwater was encountered from about 2.1 to 9.1 metres below the ground/road surface, within silts and sands, and the depth of excavation below the groundwater level will depend on the time of year of construction and final designs.

Based on the groundwater level measurements and anticipated proposed invert depth, the excavation for the future sanitary sewer may extend below the groundwater level and a permit to take water (PTTW) or Environmental Activity and Sector Registry (EASR) may be required. Proactive groundwater lowering in the sands and silts would be required to ensure stability of both the base and the walls of the excavations. Such groundwater lowering could be accomplished by deep wells, well point systems or the like. Groundwater lowering methods should be developed by a specialist dewatering contractor. The use of proactive dewatering will aid in the potential reuse of the wet sands and other soils as trench backfill materials.

For conceptual planning, temporary open cut slopes should be planned to be no steeper than 1 horizontal to 1 vertical. It may be necessary to flatten the excavation side slopes in the surficial sands and silts in addition to blanketing portions of the cut slopes with free draining granular material to enhance the stability of the excavation walls.

To reduce the width of open cut excavations, consideration should be given to installing the services using a properly designed trench box. The trench box only provides protection for the workers once it is in place and does not preclude movement of the excavation walls or the flow of saturated materials under the influence of groundwater. Any gaps between the trench box and adjacent excavation side walls should be filled immediately to limit lateral movements.

All excavations should be carried out in accordance with the latest edition of the Ontario Occupational Health and Safety Act and Regulations for Construction Projects. The fill materials, sands, silts, silty clay, clayey silt and organic soils above the groundwater water level would be generally classified as Type 3 soils. The granular soils below the groundwater level would be classified as Type 4 soils. Care should be taken to direct all surface water away from open excavations.

6.3 Bedding

Bedding for the proposed services should consist of suitably graded granular material consistent with the type, size and class of pipe and City of London standards. Care should be taken to extend the bedding through all fill and topsoil to bear on native, undisturbed soils.

Bedding materials should be placed in maximum 300-millimetre-thick loose lifts and uniformly compacted to at least 95 per cent of standard Proctor maximum dry density (SPMDD). In areas where groundwater seepage may be of sufficient volume that the bedding material cannot be adequately compacted, it may be necessary to use 19-millimetre clear stone with a full-encapsulating non-woven geotextile surround. Where appropriate, the clear stone bedding would also facilitate groundwater control and pumping from sumps, as required. Should a trench liner box be employed, measures should be taken to ensure that the compacted pipe bedding is not disturbed when the liner box is moved.

FUNCTIONAL DESIGN OF THE TRIBUTARY 'C' STORM DRAINAGE AND STORMWATER MANAGEMENT SERVICING WORKS EXCERPTS

Matrix Solutions Inc.
ENVIRONMENT & ENGINEERING

REVISED

FINAL REPORT - FUNCTIONAL DESIGN OF THE TRIBUTARY 'C' STORM DRAINAGE AND STORMWATER MANAGEMENT SERVICING WORKS

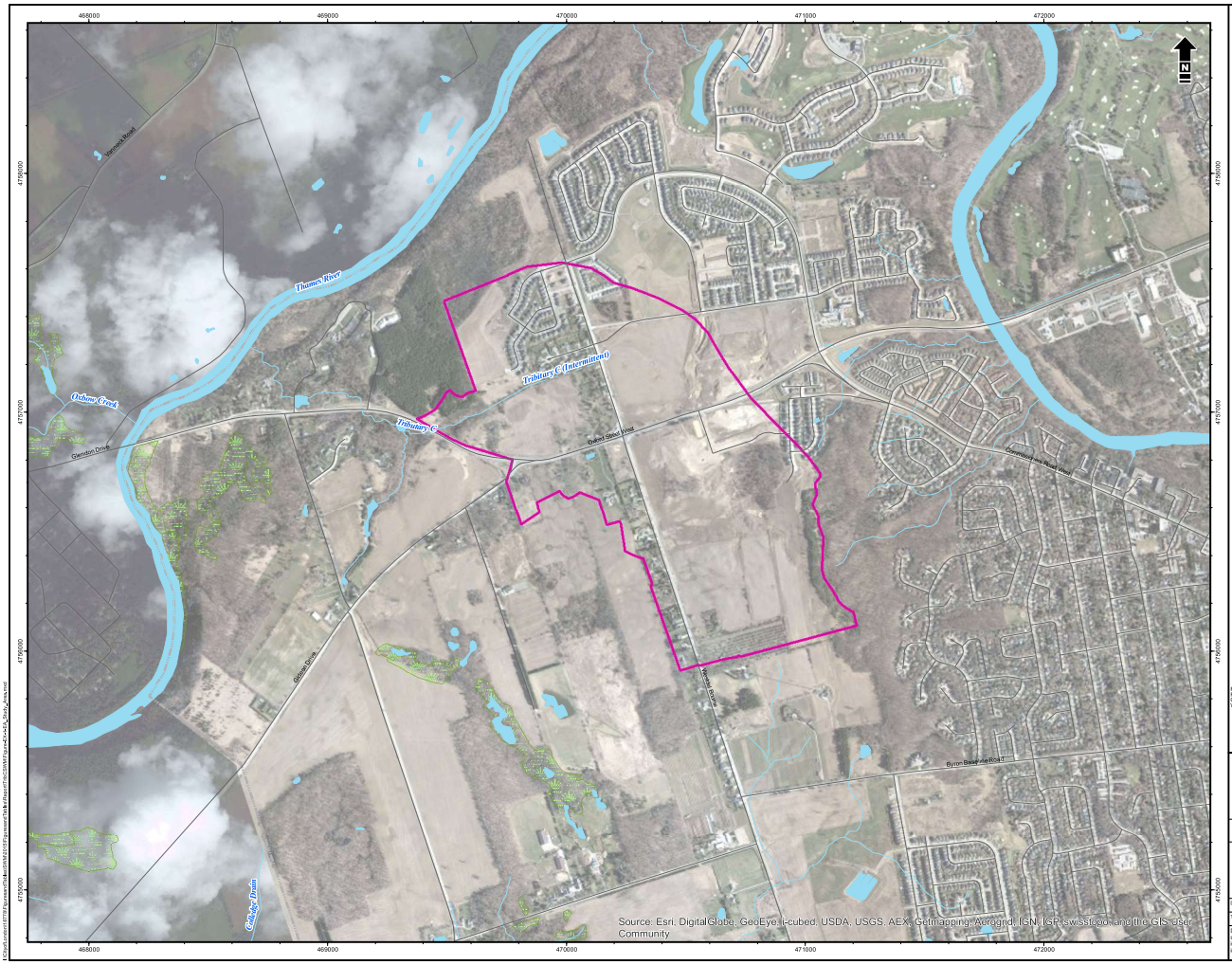
DOWNSTREAM THAMES RIVER SUBWATERSHED
CITY OF LONDON, ONTARIO

Report Prepared for:
CITY OF LONDON

Prepared by:
MATRIX SOLUTIONS INC.

August 2015
Breslau, Ontario

31 Beacon Point Court
Breslau, Ontario, Canada N0B 1M0
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Matrix Solutions Inc.
ENVIRONMENT & ENGINEERING

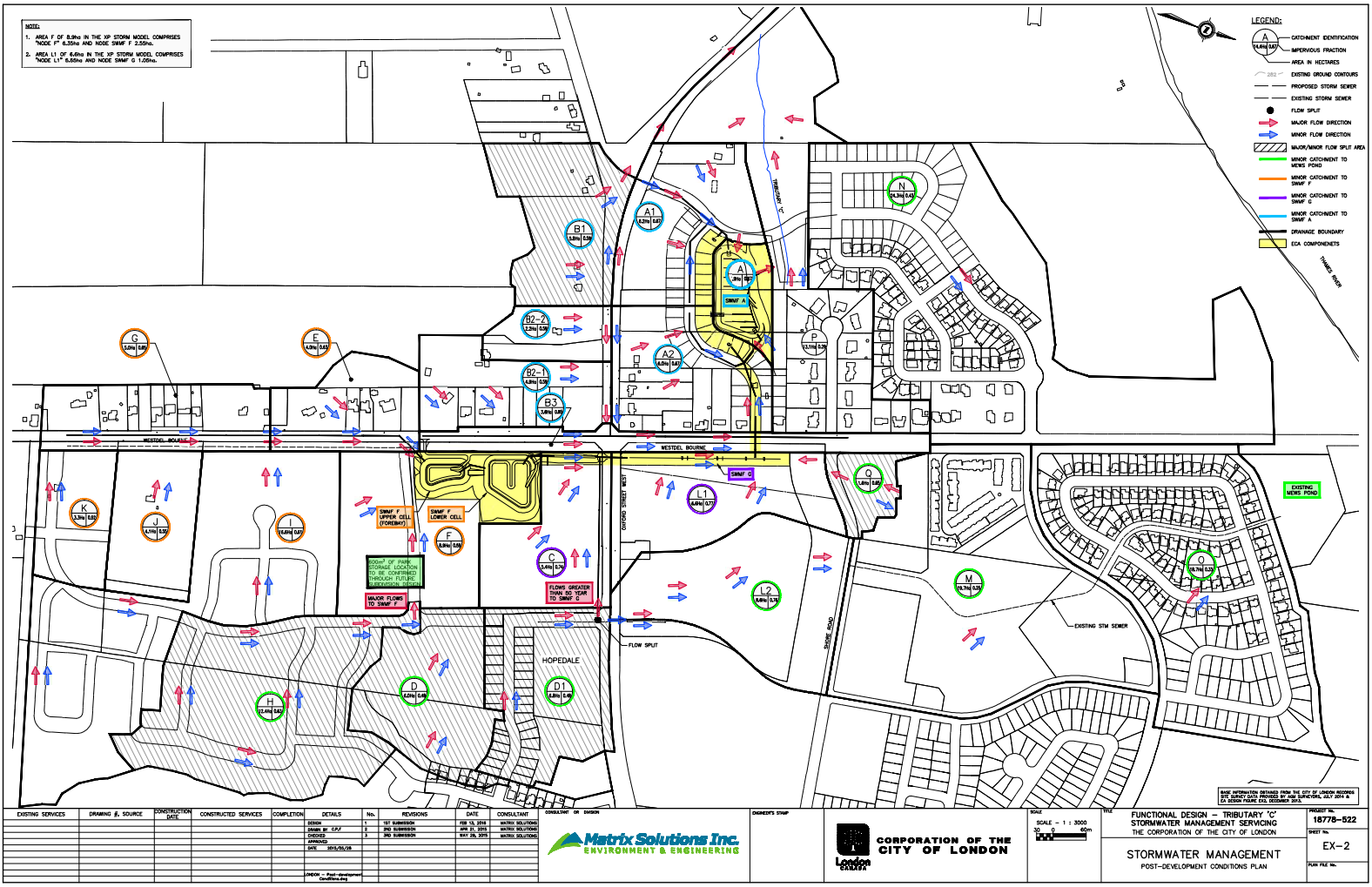
City of London
Functional Design – Tributary C Stormwater Management Servicing

EA Study Area

Date: 02 Jun 2015		Project: 16778-522	
Technical: A. McKay	Reviewer: D. Van Vliet	Drawn: C. Curry	

Disclaimer: Prepared solely for the use of City of London as specified in the accompanying report. No representation of any kind is made to other parties with which City of London has not entered into contract.

Figure
EX-1



EXISTING SERVICES	DRAWING #, SOURCE	CONSTRUCTION DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN	1	1ST SUBMISSION	FEB 13, 2018	MATRIX SOLUTIONS
DRAWN BY CJ/J	2	2ND SUBMISSION	APR 21, 2015	MATRIX SOLUTIONS
CHECKED	3	3RD SUBMISSION	MAY 29, 2015	MATRIX SOLUTIONS
APPROVED				
DATE 2015/05/28				

CONSULTANT OR DIVISION

Matrix Solutions Inc.
ENVIRONMENT & ENGINEERING

ENGINEER'S STAMP

CORPORATION OF THE CITY OF LONDON

SCALE
SCALE - 1 : 3000
30 0 60m

TITLE
FUNCTIONAL DESIGN – TRIBUTARY 'C'
STORMWATER MANAGEMENT SERVICING
THE CORPORATION OF THE CITY OF LONDON

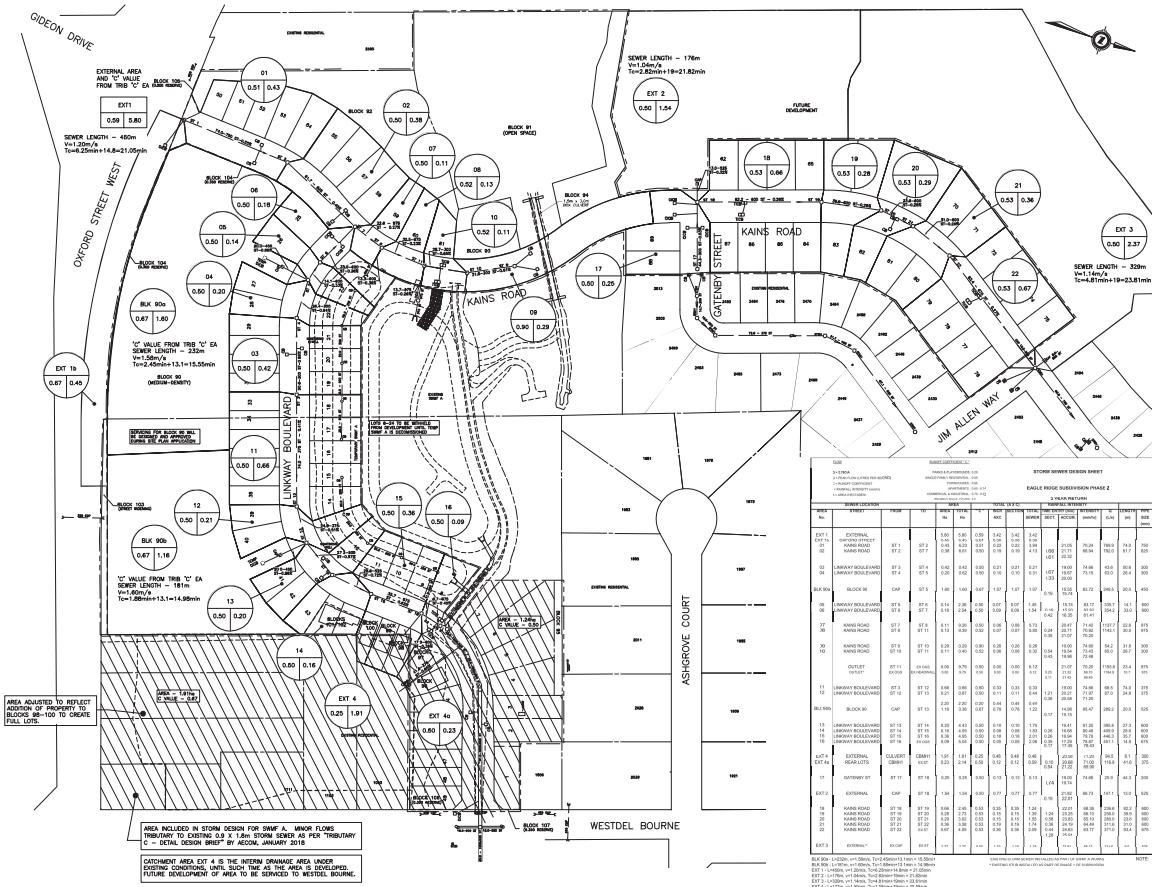
STORMWATER MANAGEMENT
POST-DEVELOPMENT CONDITIONS PLAN

PROJECT No. 16775-522
SHEET No. EX-2
PLAN FILE No.

LONDON – Post-development Conditions.dwg

May 28, 2015 – 11:55am mbaumbach – X:\ENV\Projects\Active\London\Landscape\Layouts Functional Design CAD Drawings (Fig-1-1)\16775-522 Lands SW Quad\LONDON – Post-development Conditions.dwg

EAGLE RIDGE PHASE 2 STORM AREA PLAN DRAWING



LEGEND

- AREA NUMBER
- RUNOFF COEFFICIENT 'C'
- AREA IN ha
- EXISTING STORM SEWER AND MAINTENANCE HOLE
- EXISTING CATCHBASIN
- EXISTING CATCHBASIN MAINTENANCE HOLE
- EXISTING CAP
- PROPOSED STORM SEWER AND MAINTENANCE HOLE
- FUTURE STORM SEWER AND MAINTENANCE HOLE
- PROPOSED CATCHBASIN
- PROPOSED CURB INLET CATCHBASIN
- PROPOSED DITCH INLET CATCHBASIN
- PROPOSED TWIN INLET CATCHBASIN
- PROPOSED CAP
- PROPOSED CULVERT
- PHASE LIMIT

NOTE: C VALUES REVISED FOR AREAS 01, 08, 10 AND 18-22 BASED ON REVISED ZONING AND INCREASE IN MAXIMUM COVERAGE FROM 35-40% TO 45%.

METRIC

DISTANCES SHOWN ON THIS PLAN ARE IN METERS AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

STORM SEWER DESIGN SHEET

EAGLE RIDGE SUBDIVISION PHASE 2

5 YEAR RETURN

LOCATION	AREA	RUNOFF COEFFICIENT 'C'	TIME OF CONCENTRATION	RAINFALL INTENSITY	PEAK FLOW	SEWER DESIGN														
AREA No.	STREET	FROM	TO	AREA (ha)	TOTAL (ha)	R	INDIV	ACCUM	INLET (min)	TIME SEWER (min)	CUMM (min)	INTENSITY (mm/hr)	Q (cms)	LENGTH (m)	SIZE (mm)	SLOPE %	VCAP %	CAP (cms)	VEL (m/s)	C.T.C. TO FLOW (min)	TIME OF FLOW (min)	FACT. H SEWER	GROUND ELEV.	INVERT ELEV.
EXT 1	EXTERNAL			0.80	0.80	0.59	0.42	0.42																
EXT 1a	CROWN PROPERTY			0.20	1.00	0.80	0.13	0.55																
01	KAINS ROAD	ST 1	ST 2	0.43	0.43	0.51	0.22	0.22	3.94		21.05	70.24	39.9	74.0	750	0.50%	0.813	595.6	1.97	0.666	0.66	0.468	0.666	257.137	256.739
02	KAINS ROAD	ST 2	ST 7	0.38	0.81	0.50	0.19	0.19	4.13	1.65	21.71	68.94	182.0	61.7	825	0.40%	0.813	567.8	1.70	0.619	0.61	0.244	0.214	256.938	256.695
										1.33	23.05														
03	LINKWAY BOULEVARD	ST 3	ST 4	0.42	0.42	0.50	0.21	0.21	3.21		19.00	74.98	43.0	30.9	300	0.85%	0.813	39.2	1.26	0.642	0.67	0.429	0.692	257.643	257.274
04	LINKWAY BOULEVARD	ST 4	ST 5	0.20	0.62	0.50	0.10	0.31	2.91		19.67	73.15	63.0	26.4	300	0.94%	0.813	40.8	1.33	0.606	0.55	0.245	0.272	257.131	256.883
										1.07	20.00														
BLK 90a	BLOCK 90	CAP	ST 5	1.60	1.60	0.67	1.07	1.07	1.07		19.00	69.72	206.5	20.0	450	0.98%	0.813	280.2	1.77	0.113	0.19	0.196	0.139	256.993	256.797
										0.19	19.19														
09	LINKWAY BOULEVARD	ST 8	ST 6	0.14	2.36	0.66	0.62	0.67	1.99		19.19	69.17	324.7	14.1	600	0.33%	0.813	302.7	1.29	0.632	0.18	0.846	0.666	258.611	258.365
08	LINKWAY BOULEVARD	ST 6	ST 5	0.16	2.54	0.66	0.69	1.36	1.34		20.03	67.97	324.2	33.0	600	0.33%	0.813	302.7	1.29	0.709	0.42	0.119	0.213	258.415	258.302
										0.42	19.42	68.37													
07	KAINS ROAD	ST 7	ST 6	0.11	0.95	0.50	0.09	0.45	0.73		20.47	71.42	1107.7	22.8	975	0.27%	0.813	1164.5	1.56	0.244	0.24	0.951	0.191	258.181	258.120
06	KAINS ROAD	ST 1	ST 5	0.13	0.39	0.62	0.07	0.66	0.24		20.71	70.82	1163.1	30.6	975	0.23%	0.813	1074.5	1.44	0.354	0.22	0.370	0.852	258.084	258.014
										0.66	21.07	70.20													
05	KAINS ROAD	ST 9	ST 10	0.25	0.25	0.80	0.28	0.28	0.28		19.00	74.98	74.2	31.9	300	0.51%	0.813	59.1	0.98	0.54	0.49	0.162	0.133	257.090	256.918
10	KAINS ROAD	ST 10	ST 11	0.11	0.40	0.52	0.09	0.66	0.32	0.54	19.54	73.43	95.0	20.7	300	0.85%	0.813	78.0	1.10	0.139	0.49	0.180	0.162	256.885	256.718
										0.45	19.99	72.46													
	OUTLET	ST 11	EX MH5 EX MH5(NEW)	0.09	0.79	0.50	0.09	0.85	0.12		21.07	70.26	1183.8	20.4	975	0.26%	0.813	1142.7	1.53		0.05	0.868	0.244	255.932	255.864
		EX MH5		0.00	0.79	0.50	0.00	0.85	0.12	0.23	21.52	68.51	194.5	10.7	975	0.32%	0.813	1257.7	1.70		0.11	0.034		255.830	255.796
										0.71	21.81	68.40													
11	LINKWAY BOULEVARD	ST 3	ST 12	0.66	0.66	0.60	0.33	0.33	0.33		19.00	74.98	98.5	74.9	375	0.41%	0.813	112.3	1.02		1.21	0.300	0.945	257.672	257.372
12	LINKWAY BOULEVARD	ST 12	ST 13	0.31	0.97	0.50	0.11	0.11	0.44	1.21	20.21	71.97	97.0	24.9	375	0.51%	0.813	125.2	1.13	0.002	0.36	0.126	0.160	257.326	257.202
										0.36	20.58	71.28													
BLK 90b	BLOCK 90	CAP	ST 13	2.20	2.20	0.67	0.74	0.74	1.23		14.66	85.47	289.2	20.0	525	0.98%	0.813	423.7	1.97	0.008	0.17	0.166	0.160	257.386	257.202
										0.17	19.15														
13	LINKWAY BOULEVARD	ST 13	ST 14	0.28	4.43	0.60	0.19	0.93	1.75		19.41	81.25	390.8	27.3	600	0.57%	0.813	443.6	1.64	0.117	0.28	0.199	0.245	257.090	256.909
14	LINKWAY BOULEVARD	ST 14	ST 15	0.19	4.89	0.60	0.08	0.99	1.83	0.28	19.68	80.48	489.3	28.6	600	0.72%	0.813	497.0	1.84	0.065	0.26	0.205	0.340	256.810	256.605
15	LINKWAY BOULEVARD	ST 15	ST 16	0.16	5.05	0.60	0.06	1.05	1.89	0.26	19.94	79.57	557.1	28.6	600	0.93%	0.813	571.0	2.11	0.045	0.23	0.205	0.340	256.465	256.240
16	LINKWAY BOULEVARD	ST 16	EX MH4	0.08	5.64	0.60	0.03	1.08	2.08	0.23	20.17	78.67	491.1	12.8	675	0.48%	0.813	543.6	1.49		0.17	0.097		256.178	256.068
										0.51	17.36	78.10													
EXT 4	EXTERNAL	CULVERT	CBMH1	1.91	1.91	0.25	0.48	0.48	0.48		47.00	71.42	94.5	8.1	300	1.00%	0.813	86.7	1.27		0.10	0.068		258.640	258.560
EXT 4a	REAR LOTS	CBMH1	EX ST	0.23	2.14	0.58	0.12	0.12	0.59	0.10	20.68	71.02	118.9	41.0	375	0.83%	0.813	161.6	1.26		0.54	0.270		258.424	258.154
										0.54	21.22	69.90													
17	GATEWAY ST	ST 17	ST 18	0.25	0.25	0.60	0.13	0.13	0.13		19.00	74.98	39.9	44.3	300	0.85%	0.813	79.4	1.96		0.14	0.233	0.327	258.950	258.717
										1.04	19.14														
EXT 2	EXTERNAL	CAP	ST 18	1.54	1.54	0.60	0.77	0.77	0.77		21.82	68.73	147.1	10.5	525	0.82%	0.813	240.3	1.12		0.15	0.041	0.123	258.594	258.513
										0.19	20.01														
18	KAINS ROAD	ST 18	ST 19	0.69	2.46	0.55	0.35	0.35	1.24		22.01	66.36	238.6	52.2	600	0.20%	0.813	210.1	1.13		1.04	0.212	0.768	258.386	258.178
19	KAINS ROAD	ST 19	ST 20	0.28	2.73	0.60	0.15	0.15	1.39	1.24	23.25	65.15	296.0	56.0	600	0.39%	0.813	304.8	1.16		0.38	0.111	0.568	258.035	257.938
20	KAINS ROAD	ST 20	ST 21	0.29	3.02	0.53	0.15	0.15	1.55	0.38	23.63	65.10	289.0	23.6	600	0.37%	0.813	297.3	1.09		0.36	0.059	0.074	257.938	257.798
21	KAINS ROAD	ST 21	ST 22	0.36	3.38	0.53	0.19	0.19	1.74	0.36	24.10	64.66	311.6	21.0	600	0.29%	0.813	262.7	1.17		0.44	0.089	0.068	257.798	257.617
22	KAINS ROAD	ST 22	EX ST	0.67	4.05	0.53	0.36	0.36	2.09	0.44	24.62	63.77	311.0	50.4	675	0.37%	0.813	436.6	1.22		1.29	0.256	0.131	257.537	257.291
										1.29	25.91														
EXT 3	EXTERNAL	EX CAP	EX ST	2.37	2.37	0.60	1.42	1.42	1.42		47.00	71.42	281.9	8.1	450	0.80%	0.813	222.6	1.40		0.10	0.068		257.423	257.355

BLK 90a - L=332m, n=1.58m/s, Tc=2.40min+13.1min = 15.55min
BLK 90b - L=181m, n=1.60m/s, Tc=1.88min+13.1min = 14.98min
EXT 1 - L=460m, n=1.20m/s, Tc=6.25min+14.8min = 21.05min
EXT 2 - L=176m, n=1.04m/s, Tc=2.82min+19min = 21.82min
EXT 3 - L=359m, n=1.14m/s, Tc=4.81min+19min = 23.81min
EXT 4 - L=175m, n=1.60m/s, Tc=1.09min+19min = 20.09min

RUNOFF COEFFICIENT 'C'
0.1=PARK
0.2=AGRICULTURE/OPEN SPACE
0.3=RURAL RESIDENTIAL
0.4=SINGLE/SEMI-RESIDENTIAL
0.5=TOWNHOUSES
0.6=APARTMENTS
0.7=INSTITUTIONAL/INDUSTRIAL
0.8=COMMERCIAL & INDUSTRIAL
0.9=ROADS, PAVED AREAS

RAINFALL INTENSITY
I = 1.735/(Tc+0.049)^0.814

NOTE: C values revised for areas 01, 08, 10 and 18-22 based on revised zoning and increase in max coverage from 35-40% to 45%

EXISTING SERVICES	DRAWING #, SOURCE	DATE
GATENBY STREET STM/SAN/WM	23635	DEC 2012
KAINS ROAD STM/SAN/WM	23631	DEC 2012
JIM ALLEN WAY	23633	DEC 2012
WESTDEL BOURNE	18977	APRIL 2002

CONSTRUCTED SERVICES
TRUNK SEWER
SANITARY SEWER
STORM SEWER
WATERMAIN
GRANULAR BASE

COMPLETION	DETAILS	
APRIL 2019	DESIGN	JP
AUGUST 2019	DRAWN BY	LS
SEPT. 2019	CHECKED	RG
SEPT. 2019	APPROVED	JP
NOVEMBER 2019	DATE	JUNE 2018

No.	REVISIONS	DATE	CONSULTANT
1	AS PER CITY COMMENTS	NOVEMBER 2019	DILLON CONSULTING
2	AS PER CITY COMMENTS	JANUARY 2019	DILLON CONSULTING
3	ISSUED FOR TENDER	JANUARY 2019	DILLON CONSULTING
4	AS PER CITY COMMENTS	FEBRUARY 2019	DILLON CONSULTING
5	AS PER CITY COMMENTS	MARCH 2019	DILLON CONSULTING
6	C VALUES REVISED PER ZONING REVISION AND CITY REQUEST	JULY 2019	DILLON CONSULTING
7	AS CONSTRUCTED	OCTOBER 2020	DILLON CONSULTING
8	BLOCKS 98-100 REVISION	NOVEMBER 2020	DILLON CONSULTING

CONSULTANT OR DIVISION

DILLON CONSULTING

ENGINEER'S STAMP

P. A. McALLISTER — 100191855 — PROVINCE OF ONTARIO

CORPORATION OF THE CITY OF LONDON
DEVELOPMENT SERVICES
ACCEPTED
12/1/2020
SUBJECT TO THE CONDITION(S) IDENTIFIED IN THE ACCEPTANCE LETTER OF THE SAME DATE.

SCALE

SCALE – 1 : 1250
12.5 0 25m

TITLE

EAGLE RIDGE PHASE 2
WEST KAINS LAND CORP.

STORM AREA PLAN
AND DESIGN SHEET

PROJECT No. 18-0471
SHEET No. 02
PLAN FILE No. T17501-02

2020-11-02 G:\DWG\Wmar Projects\1047-1 Eagle Ridge Phase 2\dwg CS\2019\1047-1 Servicing – C Val

IDF CURVES

Rainfall Intensity:

$$I = \frac{A}{(t+B)^C}$$

Where I = rainfall intensity (mm/hr)
t = duration (minutes)
A, B, C = AES Parameters (see **Table 6.3**)

Table 6.3 AES Parameters for Intensity Duration Frequency Curves

Parameter	25mm[1]	2yr[2]	5yr[3]	10yr	25yr	50yr	100yr	250yr
A	538.85	754.36	1183.74	1574.382	2019.372	2270.665	2619.363	3048.22
B	6.331	6.011	7.641	9.025	9.824	9.984	10.5	10.03
C	0.809	0.810	0.838	0.860	0.875	0.876	0.884	0.888

1. IDF parameters for the 25mm event must use a four-hour storm duration.
2. 2-year IDF curve to be used in pre to post development controls.
3. 5-year IDF curve to be used for storm sewer design (see **Section 5.8**).

6.5 Stormwater Practices

This sections aims to guide the planning and design of stormwater quality and quantity controls that include Low Impact Development (LID) or source control concepts as well as traditional stormwater control measures.

Each site or project will present unique options and challenges. The City encourages innovation as part of any stormwater project.

6.5.1 Best Management Practice Design

During the initial phases of design, consideration for runoff reduction and onsite infiltration should be paramount. The City will accept Best Management Practices (BMPs) that are designed by a Professional Engineer and demonstrate at-source runoff control. These systems may be eligible towards achieving water balance, quality, quantity or erosion control for the project. These stormwater best management objectives can be achieved by:

- **Decreasing Impervious Areas:** The Stormwater Engineering Division strongly supports reductions in impervious area as part of the runoff reduction strategy. This can be presented by demonstrating a decrease in the standard TIMP or XIMP values.
- **Intercepting Runoff:** Runoff from hard surfaces should be conveyed to landscape gardens or grassed area to promote onsite filtration and infiltration, and reduce the volume of water collected by the City storm sewer.

APPENDIX B

STORMWATER MANAGEMENT CALCULATIONS

&

PCSWMM RESULTS

TOTAL IMPERVIOUSNESS CALCULATIONS


N
EXT12
EXT14
EXT13
S21
S42
S20
S19
S18
S17
S41
S40
S39
S38
S37
S16
S15
S14
S13
S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
S22
S23
S24
S25
S26
S27
S28
S29
S30
S31
S33
S35
S4
EXT15
EXT5_1
EXT5_2
EXT6
EXT4
EXT3
EXT2
EXT1
S33
S32
EXT9
EXT8
EXT7
100 m

PROJECT NO. 205505
PROJECT NAME: OXFROD STREET WEST & GIDEON DRIVE

EXISTING CONDITION CALCULATIONS					
Right-of-Way Runoff Coefficient / TIMP Calculation					
Subcatchment	**Pervious Area (ha)**	**Impervious Area (ha)**	**Total Area (ha)**	**Runoff Coefficient**	**TIMP**
S1	0.008	0.054	0.063	0.815	88%
S2	0.007	0.019	0.026	0.729	76%
S3	0.000	0.015	0.015	0.900	100%
S4	0.029	0.053	0.082	0.668	67%
S5	0.014	0.027	0.040	0.681	69%
S6	0.003	0.083	0.086	0.874	96%
S7	0.018	0.036	0.054	0.680	69%
S8	0.014	0.033	0.048	0.705	72%
S9	0.021	0.044	0.065	0.693	70%
S10	0.009	0.032	0.041	0.752	79%
S11	0.017	0.037	0.054	0.698	71%
S12	0.009	0.016	0.025	0.663	66%
S13	0.018	0.031	0.049	0.658	65%
S14	0.006	0.017	0.023	0.731	76%
S15	0.007	0.022	0.029	0.749	78%
S16	0.008	0.019	0.028	0.707	72%
S17	0.012	0.029	0.041	0.716	74%
S18	0.011	0.027	0.037	0.716	74%
S19	0.007	0.017	0.024	0.703	72%
S20	0.012	0.032	0.044	0.727	75%
S21	0.013	0.036	0.050	0.725	75%
S22	0.028	0.040	0.068	0.631	62%
S23	0.021	0.010	0.031	0.455	36%
S24	0.020	0.008	0.029	0.440	34%
S25	0.104	0.055	0.159	0.475	39%
S26	0.102	0.050	0.152	0.463	38%
S27	0.060	0.087	0.146	0.635	62%
S28	0.132	0.017	0.149	0.326	18%
S29	0.005	0.009	0.014	0.660	66%
S30	0.019	0.012	0.031	0.495	42%
S31	0.063	0.015	0.079	0.377	25%
S32	0.095	0.069	0.164	0.524	46%
S33	0.134	0.152	0.286	0.595	56%
S34	0.105	0.062	0.166	0.491	42%
S35	0.000	0.068	0.068	0.900	100%
S36	0.142	0.000	0.142	0.250	7%
S37	0.049	0.015	0.064	0.403	29%
S38	0.162	0.000	0.162	0.250	7%
S39	0.040	0.013	0.053	0.407	30%
S40	0.013	0.010	0.023	0.537	48%
S41	0.020	0.014	0.035	0.518	45%
S42	0.040	0.022	0.062	0.479	40%
Total/Composite	**1.598**	**1.408**	**3.006**	**55%**	**50.6%**

PROJECT NO. 205505
PROJECT NAME: OXFROD STREET WEST & GIDEON DRIVE

POST-DEVELOPMENT CALCULATIONS					
Right-of-Way Runoff Coefficient / TIMP Calculation					
Subcatchment	**Pervious Area (ha)**	**Impervious Area (ha)**	**Total Area (ha)**	**Runoff Coefficient**	**TIMP**
S1	0.008	0.054	0.063	0.815	88%
S2	0.009	0.018	0.026	0.688	70%
S3	0.005	0.011	0.015	0.697	71%
S4	0.033	0.049	0.082	0.636	62%
S5	0.019	0.021	0.040	0.589	56%
S6	0.061	0.025	0.086	0.438	34%
S7	0.045	0.009	0.054	0.361	23%
S8	0.040	0.007	0.048	0.349	21%
S9	0.055	0.010	0.065	0.347	21%
S10	0.012	0.029	0.041	0.712	73%
S11	0.019	0.035	0.054	0.667	67%
S12	0.012	0.014	0.025	0.605	58%
S13	0.036	0.013	0.049	0.425	32%
S14	0.017	0.006	0.023	0.422	32%
S15	0.020	0.009	0.029	0.458	37%
S16	0.019	0.009	0.028	0.454	36%
S17	0.025	0.016	0.041	0.504	43%
S18	0.020	0.017	0.037	0.554	51%
S19	0.011	0.013	0.024	0.594	56%
S20	0.016	0.028	0.044	0.658	65%
S21	0.021	0.029	0.050	0.625	61%
S22	0.028	0.040	0.068	0.631	62%
S23	0.025	0.006	0.031	0.376	25%
S24	0.023	0.006	0.029	0.376	25%
S25	0.099	0.059	0.159	0.492	42%
S26	0.086	0.066	0.152	0.533	48%
S27	0.003	0.143	0.146	0.886	98%
S28	0.120	0.029	0.149	0.375	25%
S29	0.000	0.014	0.014	0.900	100%
S30	0.020	0.011	0.031	0.483	40%
S31	0.049	0.030	0.079	0.499	43%
S32	0.093	0.071	0.164	0.531	47%
S33	0.138	0.148	0.286	0.586	55%
S34	0.090	0.076	0.166	0.548	50%
S35	0.020	0.048	0.068	0.709	73%
S36	0.070	0.072	0.142	0.578	54%
S37	0.007	0.057	0.064	0.826	89%
S38	0.150	0.012	0.162	0.298	14%
S39	0.006	0.048	0.053	0.832	90%
S40	0.000	0.023	0.023	0.900	100%
S41	0.008	0.027	0.035	0.757	80%
S42	0.040	0.022	0.062	0.479	40%
Total/Composite	**1.579**	**1.427**	**3.006**	**56%**	**51.2%**

PCSWMM INPUT PARAMETERS

EXISTING CONDITION - PCSWMM INPUT PARAMETERS																
Name	Outlet	Area (ha)	Width (m)	Flow Length (m)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Dstore Imperv (mm)	Dstore Perv (mm)	Zero Imperv (%)	Subarea Routing	Percent Routed (%)	Infiltration Method	Curve Number	
EXT1	J41	2.3755	79.983	297	4.86	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT12	J29	0.3706	34.315	108	3.8	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT13	J26	0.4707	43.991	107	1.74	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT14	J22	0.6052	47.654	127	0.92	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT15	J36	4.2173	124.404	339	2.76	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT2	J41	0.4657	34.142	136	6.12	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT3	J44	0.29	24.723	117	8.57	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT4	J45	0.9083	44.744	203	6.79	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT5_1	J47	0.1353	11.108	122	6.73	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT5_2	J49	0.1314	10.788	122	6.73	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT6	J50	0.3514	27.978	126	7.42	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT7	J50	0.9176	48.143	191	5.83	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT8	J50	0.2475	19.832	125	6.78	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT9	J50	0.4354	25.627	170	3.99	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S1	J1	0.0625	16.026	39	0.593	88	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S10	DITCH_INLET	0.0409	15.731	26	1.44	79	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S11	J19	0.0542	22.583	24	0.7	66	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S12	J21	0.0254	14.941	17	3.74	90	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S13	J22	0.0494	17.643	28	8	65	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S14	J22	0.0231	11	21	10	76	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S15	J23	0.029	10.741	27	4	78	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S16	J24	0.0275	10.577	26	6	72	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S17	J27	0.0411	14.679	28	11	74	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S18	J28	0.0372	16.909	22	12	74	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S19	J29	0.0242	11	22	12	72	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S2	J2	0.0264	13.2	20	2.08	76	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S20	J29	0.0441	14.7	30	3	75	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S21	J30	0.0498	17.786	28	9	75	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S22	J41	0.0677	22.567	30	4.033	62	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S23	J42	0.0309	13.435	23	9	36	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S24	J43	0.0287	14.35	20	7.4	39	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S25	J44	0.1585	19.812	80	5.83	75	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S26	J44	0.1521	31.688	48	2.4	38	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S27	J13	0.1462	37.487	39	6	62	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S28	J47	0.149	29.8	50	11	18	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S29	J48	0.0139	4.633	30	9	66	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S3	J2	0.0154	10.267	15	1.69	100	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S30	J49	0.0308	10.267	30	9	42	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S31	J49	0.0788	14.868	53	5	25	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S32	J50	0.1636	9.512	172	0.5	46	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S33	J51	0.2858	16.713	171	1	56	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S34	J51	0.1663	29.591	56	3.393	42	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S35	J14	0.0683	16.659	41	4.18	100	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S36	J14	0.1418	32.977	43	1	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S37	J15	0.0641	14.568	44	0.09	29	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S38	J36	0.1618	11.725	138	4.38	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S39	J17	0.0532	17.733	30	9	30	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S4	J4	0.0823	19.14	43	2.54	67	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S40	J17	0.0228	7.862	29	2	48	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S41	J18	0.0345	8.214	42	8.04	45	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S42	J36	0.0624	9.455	66	5.73	40	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S5	J5	0.0404	14.963	27	1.29	69	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S6	J5	0.0862	18.34	47	2.46	96	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S7	J6	0.0538	16.812	32	2.31	72	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S8	J7	0.0476	15.867	30	3	90	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S9	J8	0.0645	17.432	37	4	70	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	

PROPOSED CONDITION - PCSWMM INPUT PARAMETERS																
Name	Outlet	Area (ha)	Width (m)	Flow Length (m)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Dstore Imperv (mm)	Dstore Perv (mm)	Zero Imperv (%)	Subarea Routing	Percent Routed (%)	Infiltration Method	Curve Number	
EXT12	J29	0.3706	34.315	108	3.8	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT13	J26	0.4707	43.991	107	1.74	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT14	J22	0.6052	47.654	127	0.92	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT15	J14	4.2173	124.404	339	2.76	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT7	J17	0.1731	9.083	191	5.83	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT8	J17	0.2483	19.9	125	6.78	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
EXT9	J17	0.4354	25.625	170	3.99	7	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S1	J1	0.0625	16.026	39	0.593	88	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S10	DITCH_INLET	0.0409	15.731	26	1.44	73	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S11	J20	0.0542	22.583	24	0.7	67	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S12	J21	0.0254	14.941	17	3.74	58	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S13	J22	0.0494	17.643	28	8	32	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S14	J22	0.0231	11	21	10	32	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S15	J23	0.029	10.741	27	4	37	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S16	J24	0.0275	10.577	26	6	36	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S17	J27	0.0411	14.679	28	11	43	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S18	J28	0.0372	16.909	22	12	51	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S19	J29	0.0242	11	22	12	56	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S2	J33	0.0264	13.2	20	2.08	70	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S20	J29	0.0441	14.7	30	3	65	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S21	J30	0.0498	17.786	28	9	61	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S22	J41	0.0677	22.567	30	4.033	62	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S23	J42	0.0309	13.435	23	9	25	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S24	J43	0.0287	14.35	20	7.4	25	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S25	J11	0.1585	19.812	80	5.83	42	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S26	J44	0.1521	31.688	48	2.4	48	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S27	J13	0.1462	37.487	39	6	98	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S28	J13	0.149	29.8	50	11	25	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S29	J48	0.0139	4.633	30	9	100	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S3	J2	0.0154	10.267	15	1.69	71	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S30	J49	0.0308	10.267	30	9	40	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S31	J49	0.0788	14.868	53	5	43	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S32	J17	0.1636	9.512	172	0.5	47	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S33	J14	0.2858	16.713	171	1	55	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S34	J51	0.1663	29.591	56	3.393	50	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S35	J51	0.0683	16.659	41	4.18	73	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S36	J18	0.1418	32.977	43	1	54	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S37	J18	0.0641	14.568	44	0.09	89	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S38	J15	0.1618	11.725	138	4.38	14	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S39	J15	0.0532	17.733	30	9	90	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S4	J4	0.0823	19.14	43	2.54	62	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S40	J15	0.0228	7.862	29	2	100	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S41	J9	0.0345	8.214	42	8.04	80	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S42	J9	0.0624	9.455	66	5.73	40	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S43	j32	4.09	136.333	300	0.05	59	0.01	0.1	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S5	J5	0.0404	14.963	27	1.29	56	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S6	J5	0.0862	18.34	47	2.46	34	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S7	J6	0.0538	16.812	32	2.31	23	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S8	J7	0.0476	15.867	30	3	21	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	
S9	DITCH_INLET	0.0645	17.432	37	4	21	0.013	0.25	2	7	25	OUTLET	100	CURVE_NUMBER	61	

PCSWMM FIGURES



FIGURE B1 - PRE-DEVELOPMENT HYCRAULIC ANALYSIS (2-YEAR)



FIGURE B2 - PRE-DEVELOPMENT HYCRAULIC ANALYSIS (10-YEAR)



FIGURE B3 - PRE-DEVELOPMENT HYCRAULIC ANALYSIS (100-YEAR)



FIGURE B4 - POST-DEVELOPMENT HYDRAULIC ANALYSIS (2-YEAR)



FIGURE B5 - POST-DEVELOPMENT HYDRAULIC ANALYSIS (10-YEAR)



FIGURE B6 - POST-DEVELOPMENT HYDRAULIC ANALYSIS (100-YEAR)

PCSWMM OUTPUT

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

WARNING 03: negative offset ignored for Link C1
WARNING 03: negative offset ignored for Link C1
WARNING 03: negative offset ignored for Link C2
WARNING 03: negative offset ignored for Link C44
WARNING 03: negative offset ignored for Link C45
WARNING 03: negative offset ignored for Link C7
WARNING 04: minimum elevation drop used for Conduit C7
WARNING 03: negative offset ignored for Link C8
WARNING 02: maximum depth increased for Node DITCH_INLET
WARNING 02: maximum depth increased for Node J10
WARNING 02: maximum depth increased for Node J12
WARNING 02: maximum depth increased for Node J14
WARNING 02: maximum depth increased for Node J15
WARNING 02: maximum depth increased for Node J16
WARNING 02: maximum depth increased for Node J17
WARNING 02: maximum depth increased for Node J18
WARNING 02: maximum depth increased for Node J21
WARNING 02: maximum depth increased for Node J22
WARNING 02: maximum depth increased for Node J23
WARNING 02: maximum depth increased for Node J24
WARNING 02: maximum depth increased for Node J25
WARNING 02: maximum depth increased for Node J26
WARNING 02: maximum depth increased for Node J27
WARNING 02: maximum depth increased for Node J28
WARNING 02: maximum depth increased for Node J29
WARNING 02: maximum depth increased for Node J3
WARNING 02: maximum depth increased for Node J30
WARNING 02: maximum depth increased for Node J36
WARNING 02: maximum depth increased for Node J37
WARNING 02: maximum depth increased for Node J4
WARNING 02: maximum depth increased for Node J41
WARNING 02: maximum depth increased for Node J42
WARNING 02: maximum depth increased for Node J43
WARNING 02: maximum depth increased for Node J44
WARNING 02: maximum depth increased for Node J45
WARNING 02: maximum depth increased for Node J46
WARNING 02: maximum depth increased for Node J47
WARNING 02: maximum depth increased for Node J49
WARNING 02: maximum depth increased for Node J5
WARNING 02: maximum depth increased for Node J50
WARNING 02: maximum depth increased for Node J51
WARNING 02: maximum depth increased for Node J6
WARNING 02: maximum depth increased for Node J7
WARNING 02: maximum depth increased for Node J8

*************
Element Count
*************
Number of rain gages ...... 8
Number of subcatchments ... 56
Number of nodes ........... 44
Number of links ........... 41
Number of pollutants ...... 0
```

Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
25mm_4HR	25mm_4HR	INTENSITY	5 min.
Chicago_3h_10_YR_LONDON	Chicago_3h_10_YR_LONDON	INTENSITY	5 min.
Chicago_3h_100YR_LONDON	Chicago_3h_100YR_LONDON	INTENSITY	5 min.
Chicago_3h_25_YR_LONDON	Chicago_3h_25_YR_LONDON	INTENSITY	5 min.
Chicago_3h_250_YR_LONDON	Chicago_3h_250_YR_LONDON	INTENSITY	5 min.
Chicago_3h_2YR_LONDON	Chicago_3h_2YR_LONDON	INTENSITY	5 min.
Chicago_3h_5_YR_LONDON	Chicago_3h_5_YR_LONDON	INTENSITY	5 min.
Chicago_3h_50_YR_LONDON	Chicago_3h_50_YR_LONDON	INTENSITY	5 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
EXT1	2.38	79.98	7.00	4.8600	Chicago_3h_2YR_LONDON	J41
EXT12	0.37	34.31	7.00	3.8000	Chicago_3h_2YR_LONDON	J29
EXT13	0.47	43.99	7.00	1.7400	Chicago_3h_2YR_LONDON	J26
EXT14	0.61	47.65	7.00	0.9200	Chicago_3h_2YR_LONDON	J22
EXT15	4.22	124.40	7.00	2.7600	Chicago_3h_2YR_LONDON	J36
EXT2	0.47	34.14	7.00	6.1200	Chicago_3h_2YR_LONDON	J41
EXT3	0.29	24.72	7.00	8.5700	Chicago_3h_2YR_LONDON	J44
EXT4	0.91	44.74	7.00	6.7900	Chicago_3h_2YR_LONDON	J45
EXT5_1	0.14	11.11	7.00	6.7300	Chicago_3h_2YR_LONDON	J47
EXT5_2	0.13	10.79	7.00	6.7300	Chicago_3h_2YR_LONDON	J49
EXT6	0.35	27.98	7.00	7.4200	Chicago_3h_2YR_LONDON	J50
EXT7	0.92	48.14	7.00	5.8300	Chicago_3h_2YR_LONDON	J50
EXT8	0.25	19.83	7.00	6.7800	Chicago_3h_2YR_LONDON	J50
EXT9	0.44	25.63	7.00	3.9900	Chicago_3h_2YR_LONDON	J50
S1	0.06	16.03	88.00	0.5930	Chicago_3h_2YR_LONDON	J1
S10	0.04	15.73	79.00	1.4400	Chicago_3h_2YR_LONDON	DITCH_INLET
S11	0.05	22.58	66.00	0.7000	Chicago_3h_2YR_LOND	

S12	0.03	14.94	90.00	3.7400
Chicago_3h_2YR_LONDON J21				
S13	0.05	17.64	65.00	8.0000
Chicago_3h_2YR_LONDON J22				
S14	0.02	11.00	76.00	10.0000
Chicago_3h_2YR_LONDON J22				
S15	0.03	10.74	78.00	4.0000
Chicago_3h_2YR_LONDON J23				
S16	0.03	10.58	72.00	6.0000
Chicago_3h_2YR_LONDON J24				
S17	0.04	14.68	74.00	11.0000
Chicago_3h_2YR_LONDON J27				
S18	0.04	16.91	74.00	12.0000
Chicago_3h_2YR_LONDON J28				
S19	0.02	11.00	72.00	12.0000
Chicago_3h_2YR_LONDON J29				
S2	0.03	13.20	76.00	2.0800
Chicago_3h_2YR_LONDON J2				
S20	0.04	14.70	75.00	3.0000
Chicago_3h_2YR_LONDON J29				
S21	0.05	17.79	75.00	9.0000
Chicago_3h_2YR_LONDON J30				
S22	0.07	22.57	62.00	4.0330
Chicago_3h_2YR_LONDON J41				
S23	0.03	13.43	36.00	9.0000
Chicago_3h_2YR_LONDON J42				
S24	0.03	14.35	39.00	7.4000
Chicago_3h_2YR_LONDON J43				
S25	0.16	19.81	75.00	5.8300
Chicago_3h_2YR_LONDON J44				
S26	0.15	31.69	38.00	2.4000
Chicago_3h_2YR_LONDON J44				
S27	0.15	37.49	62.00	6.0000
Chicago_3h_2YR_LONDON J13				
S28	0.15	29.80	18.00	11.0000
Chicago_3h_2YR_LONDON J47				
S29	0.01	4.63	66.00	9.0000
Chicago_3h_2YR_LONDON J48				
S3	0.02	10.27	100.00	1.6900
Chicago_3h_2YR_LONDON J2				
S30	0.03	10.27	42.00	9.0000
Chicago_3h_2YR_LONDON J49				
S31	0.08	14.87	25.00	5.0000
Chicago_3h_2YR_LONDON J49				
S32	0.16	9.51	46.00	0.5000
Chicago_3h_2YR_LONDON J50				
S33	0.29	16.71	56.00	1.0000
Chicago_3h_2YR_LONDON J51				
S34	0.17	29.59	42.00	3.3930
Chicago_3h_2YR_LONDON J51				
S35	0.07	16.66	100.00	4.1800
Chicago_3h_2YR_LONDON J14				
S36	0.14	32.98	7.00	1.0000
Chicago_3h_2YR_LONDON J14				
S37	0.06	14.57	29.00	0.0900
Chicago_3h_2YR_LONDON J15				
S38	0.16	11.73	7.00	4.3800
Chicago_3h_2YR_LONDON J36				
S39	0.05	17.73	30.00	9.0000
Chicago_3h_2YR_LONDON J17				

S4	0.08	19.14	67.00	2.5400
Chicago_3h_2YR_LONDON J4				
S40	0.02	7.86	48.00	2.0000
Chicago_3h_2YR_LONDON J17				
S41	0.03	8.21	45.00	8.0400
Chicago_3h_2YR_LONDON J18				
S42	0.06	9.46	40.00	5.7300
Chicago_3h_2YR_LONDON J36				
S5	0.04	14.96	69.00	1.2900
Chicago_3h_2YR_LONDON J5				
S6	0.09	18.34	96.00	2.4600
Chicago_3h_2YR_LONDON J5				
S7	0.05	16.81	72.00	2.3100
Chicago_3h_2YR_LONDON J6				
S8	0.05	15.87	90.00	3.0000
Chicago_3h_2YR_LONDON J7				
S9	0.06	17.43	70.00	4.0000
Chicago_3h_2YR_LONDON J8				

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
DITCH_INLET	JUNCTION	263.02	1.98	0.0	
J1	JUNCTION	267.92	0.50	0.0	
J10	JUNCTION	262.34	0.75	0.0	
J12	JUNCTION	264.31	0.88	0.0	
J13	JUNCTION	262.15	1.85	0.0	
J14	JUNCTION	260.73	1.33	0.0	
J15	JUNCTION	259.26	1.42	0.0	
J16	JUNCTION	258.13	1.62	0.0	
J17	JUNCTION	256.48	1.62	0.0	
J18	JUNCTION	253.78	1.54	0.0	
J2	JUNCTION	267.89	0.50	0.0	
J20	JUNCTION	260.33	0.50	0.0	
J21	JUNCTION	259.31	1.22	0.0	
J22	JUNCTION	258.41	1.22	0.0	
J23	JUNCTION	257.39	1.83	0.0	
J24	JUNCTION	256.54	1.83	0.0	
J25	JUNCTION	256.19	2.07	0.0	
J26	JUNCTION	255.72	2.07	0.0	
J27	JUNCTION	254.84	1.86	0.0	
J28	JUNCTION	254.52	1.84	0.0	
J29	JUNCTION	253.35	1.65	0.0	
J3	JUNCTION	267.72	1.17	0.0	
J30	JUNCTION	252.15	1.65	0.0	
J36	JUNCTION	253.22	1.98	0.0	
J37	JUNCTION	250.72	1.98	0.0	
J4	JUNCTION	267.23	1.16	0.0	
J41	JUNCTION	268.05	2.15	0.0	
J42	JUNCTION	267.90	2.15	0.0	
J43	JUNCTION	267.77	3.78	0.0	
J44	JUNCTION	265.23	3.78	0.0	
J45	JUNCTION	263.70	3.20	0.0	
J46	JUNCTION	263.08	1.99	0.0	

J47	JUNCTION	262.58	1.99	0.0
J48	JUNCTION	262.53	1.47	0.0
J49	JUNCTION	262.40	1.41	0.0
J5	JUNCTION	267.23	1.16	0.0
J50	JUNCTION	262.39	1.41	0.0
J51	JUNCTION	260.40	1.98	0.0
J6	JUNCTION	266.19	1.86	0.0
J7	JUNCTION	265.23	2.63	0.0
J8	JUNCTION	265.23	2.63	0.0
J11	OUTFALL	259.66	0.75	0.0
J31	OUTFALL	251.53	0.68	0.0
J38	OUTFALL	250.70	0.68	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	% Slope	Roughness
C1	J1	J2	CONDUIT	14.8	0.2032	0.0350
C10	J10	J11	CONDUIT	33.8	7.9484	0.0130
C12	J20	J21	CONDUIT	11.0	9.3129	0.0130
C13	J21	J22	CONDUIT	23.7	3.7927	0.0130
C14	J22	J23	CONDUIT	15.0	6.8021	0.0130
C15	J23	J24	CONDUIT	14.2	5.9785	0.0130
C16	J24	J25	CONDUIT	4.5	7.8066	0.0130
C17	J25	J26	CONDUIT	12.5	3.7720	0.0350
C18	J26	J27	CONDUIT	23.3	3.7789	0.0350
C19	J27	J28	CONDUIT	12.4	2.5834	0.0350
C2	J2	J3	CONDUIT	8.6	1.8515	0.0110
C20	J28	J29	CONDUIT	24.7	4.7376	0.0350
C21	J29	J30	CONDUIT	47.3	2.5367	0.0350
C22	J12	J13	CONDUIT	39.8	5.4416	0.0350
C23	J13	J14	CONDUIT	20.0	7.1226	0.0130
C24	J14	J15	CONDUIT	36.9	3.9890	0.0350
C25	J15	J16	CONDUIT	27.6	4.0981	0.0350
C26	J16	J17	CONDUIT	33.8	4.8933	0.0350
C27	J17	J18	CONDUIT	68.1	3.9682	0.0350

C28	J30	J31	CONDUIT	9.1	
6.8291	0.0130				
C29	J41	J42	CONDUIT	15.7	
0.9563	0.0350				
C3	J3	J4	CONDUIT	40.7	
1.2176	0.0350				
C30	J48	J47	CONDUIT	21.0	-
0.2381	0.0100				
C31	J47	J13	CONDUIT	28.1	
1.5327	0.0100				
C33	J18	J36	CONDUIT	4.4	
12.7579	0.0350				
C34	J36	J37	CONDUIT	107.3	
2.3308	0.0350				
C35	J37	J38	CONDUIT	6.2	
0.3226	0.0130				
C4	J4	J5	CONDUIT	19.8	
0.0050	0.0350				
C40	J42	J43	CONDUIT	6.7	
1.9407	0.0130				
C41	J43	J44	CONDUIT	88.7	
2.8662	0.0350				
C42	J44	J45	CONDUIT	40.7	
3.7639	0.0350				
C43	J51	J36	CONDUIT	177.9	
4.0393	0.0350				
C44	J45	J46	CONDUIT	17.3	
3.5838	0.0350				
C45	J46	J47	CONDUIT	14.4	
3.4816	0.0350				
C48	J49	J50	CONDUIT	44.2	
0.0226	0.0350				
C49	J50	J51	CONDUIT	18.4	
10.8719	0.0130				
C5	J5	J6	CONDUIT	45.3	
2.3037	0.0350				
C6	J6	J7	CONDUIT	28.6	
3.3579	0.0350				
C7	J7	J8	CONDUIT	25.0	
0.0012	0.0350				
C8	J8	DITCH_INLET	CONDUIT	33.9	
6.5350	0.0350				
C9	DITCH_INLET	J10	CONDUIT	20.4	
3.3360	0.0130				

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	Transect1	0.29	2.20	0.19	11.31	1	0.94
C10	CIRCULAR	0.75	0.44	0.19	0.75	1	3.14
C12	CIRCULAR	0.40	0.13	0.10	0.40	1	

C13	Transect7	1.22	6.67	0.50	11.00	1
63.09						
C14	CIRCULAR	0.40	0.13	0.10	0.40	1
0.54						
C15	Transect8	1.83	10.70	0.68	13.00	1
154.97						
C16	Transect8	1.83	10.70	0.68	13.00	1
177.09						
C17	Transect9	2.07	18.40	1.75	16.44	1
148.27						
C18	Transect10	1.86	15.55	1.51	16.26	1
113.61						
C19	Transect11	1.84	16.90	1.52	16.33	1
102.39						
C2	CIRCULAR	0.30	0.07	0.07	0.30	1
0.16						
C20	Transect12	1.65	11.09	1.09	13.79	1
73.14						
C21	Transect12	1.65	11.09	1.09	13.79	1
53.52						
C22	Transect20	0.88	8.26	0.85	15.55	1
49.53						
C23	CIRCULAR	0.45	0.16	0.11	0.45	1
0.76						
C24	Transect21	1.33	9.29	0.43	23.18	1
30.15						
C25	Transect22	1.42	14.40	0.84	18.71	1
73.98						
C26	Transect23	1.62	21.57	1.01	22.52	1
137.61						
C27	Transect24	1.54	11.50	0.80	14.05	1
56.39						
C28	CIRCULAR	0.68	0.36	0.17	0.68	1
2.20						
C29	Transect26	2.15	20.94	3.43	14.54	1
133.14						
C3	Transect2	1.16	8.81	0.75	13.76	1
22.83						
C30	CIRCULAR	0.30	0.07	0.07	0.30	1
0.06						
C31	CIRCULAR	0.40	0.13	0.10	0.40	1
0.34						
C33	Transect24	1.54	11.50	0.80	14.05	1
101.11						
C34	Transect25	1.98	18.19	1.05	17.46	1
82.19						
C35	CIRCULAR	0.68	0.36	0.17	0.68	1
0.48						
C4	Transect2	1.16	8.81	0.75	13.76	1
1.47						
C40	CIRCULAR	0.30	0.07	0.07	0.30	1
0.13						
C41	Transect14	3.78	28.78	3.88	13.00	1
343.67						
C42	Transect15	3.20	61.94	3.26	34.54	1
754.87						
C43	Transect25	1.98	18.19	1.05	17.46	1
108.19						
C44	Transect16	1.87	18.77	1.23	21.13	1
116.86						

C45	Transect17	1.99	20.03	1.34	20.24	1
129.71						
C48	Transect19	1.41	13.38	1.35	16.82	1
7.04						
C49	CIRCULAR	0.45	0.16	0.11	0.45	1
0.94						
C5	Transect2	1.16	8.81	0.75	13.76	1
31.41						
C6	Transect3	1.86	7.47	0.66	9.23	1
29.78						
C7	Transect4	2.63	15.79	1.54	10.78	1
2.10						
C8	Transect5	1.98	17.36	2.32	14.12	1
221.94						
C9	CIRCULAR	0.75	0.44	0.19	0.75	1
2.03						

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Transect Summary
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Transect Transect1
Area:

0.0032	0.0087	0.0165	0.0266	0.0378
0.0498	0.0627	0.0765	0.0911	0.1066
0.1226	0.1390	0.1559	0.1731	0.1907
0.2087	0.2272	0.2460	0.2652	0.2848
0.3048	0.3252	0.3459	0.3670	0.3882
0.4097	0.4315	0.4535	0.4757	0.4982
0.5209	0.5439	0.5672	0.5906	0.6144
0.6383	0.6624	0.6868	0.7114	0.7361
0.7611	0.7864	0.8118	0.8374	0.8633
0.8893	0.9156	0.9426	0.9707	1.0000

Hrad:

0.0219	0.0404	0.0550	0.0745	0.0982
0.1207	0.1423	0.1631	0.1832	0.2034
0.2283	0.2528	0.2768	0.3004	0.3236
0.3465	0.3690	0.3913	0.4132	0.4349
0.4563	0.4774	0.4994	0.5244	0.5480
0.5713	0.5945	0.6174	0.6401	0.6627
0.6850	0.7072	0.7292	0.7510	0.7732
0.7958	0.8182	0.8404	0.8625	0.8845
0.9063	0.9280	0.9496	0.9710	0.9923
1.0134	1.0309	1.0186	1.0084	1.0000

Width:

0.1493	0.2182	0.3034	0.3616	0.3902
0.4188	0.4473	0.4759	0.5045	0.5316
0.5448	0.5581	0.5714	0.5846	0.5979
0.6111	0.6244	0.6377	0.6509	0.6642
0.6774	0.6907	0.7023	0.7090	0.7173
0.7256	0.7338	0.7421	0.7504	0.7586
0.7669	0.7752	0.7835	0.7917	0.7994
0.8065	0.8136	0.8208	0.8279	0.8350
0.8421	0.8493	0.8564	0.8635	0.8706
0.8777	0.8880	0.9253	0.9627	1.0000

Transect Transect10
Area:

0.0015	0.0048	0.0088	0.0136	0.0191
0.0254	0.0326	0.0406	0.0495	0.0591
0.0707	0.0865	0.1026	0.1189	0.1355
0.1523	0.1694	0.1868	0.2044	0.2222
0.2403	0.2586	0.2771	0.2959	0.3150
0.3343	0.3538	0.3737	0.3940	0.4148
0.4361	0.4578	0.4807	0.5053	0.5305
0.5562	0.5825	0.6094	0.6369	0.6651
0.6939	0.7235	0.7541	0.7857	0.8185
0.8526	0.8878	0.9242	0.9616	1.0000

Hrad:

0.0132	0.0321	0.0486	0.0636	0.0779
0.0911	0.1034	0.1156	0.1287	0.1417
0.1333	0.1311	0.1529	0.1744	0.1956
0.2165	0.2371	0.2575	0.2777	0.2977
0.3174	0.3369	0.3562	0.3753	0.3942
0.4128	0.4313	0.4534	0.4767	0.4997
0.5226	0.5455	0.5661	0.5878	0.6109
0.6347	0.6592	0.6842	0.7094	0.7351
0.7613	0.7863	0.8116	0.8364	0.8604
0.8858	0.9123	0.9403	0.9698	1.0000

Width:

0.0736	0.0933	0.1130	0.1326	0.1523
0.1732	0.1955	0.2178	0.2381	0.2583
0.4006	0.4106	0.4171	0.4236	0.4301
0.4366	0.4432	0.4495	0.4558	0.4621
0.4683	0.4746	0.4809	0.4871	0.4934
0.4996	0.5059	0.5165	0.5290	0.5416
0.5542	0.5667	0.6168	0.6416	0.6557
0.6697	0.6837	0.6990	0.7163	0.7336
0.7509	0.7747	0.7998	0.8280	0.8611
0.8924	0.9221	0.9498	0.9749	1.0000

Transect Transect11
Area:

0.0035	0.0095	0.0183	0.0310	0.0441
0.0576	0.0714	0.0855	0.0997	0.1141
0.1288	0.1436	0.1586	0.1739	0.1893
0.2049	0.2208	0.2369	0.2534	0.2703
0.2876	0.3054	0.3235	0.3419	0.3606
0.3794	0.3985	0.4179	0.4374	0.4572
0.4772	0.4975	0.5183	0.5402	0.5632
0.5871	0.6119	0.6373	0.6634	0.6900
0.7173	0.7452	0.7738	0.8032	0.8337
0.8653	0.8976	0.9308	0.9649	1.0000

Hrad:

0.0192	0.0340	0.0406	0.0578	0.0800
0.1016	0.1235	0.1456	0.1673	0.1887
0.2098	0.2306	0.2512	0.2715	0.2915
0.3113	0.3309	0.3472	0.3620	0.3767
0.3913	0.4057	0.4221	0.4403	0.4584
0.4763	0.4941	0.5117	0.5291	0.5464
0.5636	0.5806	0.6035	0.6255	0.6469
0.6680	0.6894	0.7115	0.7341	0.7571
0.7805	0.8043	0.8286	0.8511	0.8732

0.8980 0.9236 0.9496 0.9745 1.0000
Width:
0.1332 0.2031 0.3180 0.3632 0.3733
0.3835 0.3910 0.3966 0.4022 0.4078
0.4134 0.4190 0.4247 0.4303 0.4359
0.4415 0.4471 0.4571 0.4688 0.4806
0.4924 0.5041 0.5132 0.5197 0.5261
0.5325 0.5390 0.5454 0.5519 0.5583
0.5647 0.5712 0.6000 0.6293 0.6573
0.6852 0.7055 0.7223 0.7392 0.7561
0.7743 0.7925 0.8108 0.8398 0.8735
0.8970 0.9192 0.9421 0.9710 1.0000

Transect Transect12
Area:
0.0005 0.0021 0.0047 0.0083 0.0129
0.0185 0.0249 0.0319 0.0396 0.0479
0.0569 0.0664 0.0766 0.0874 0.0991
0.1117 0.1252 0.1395 0.1552 0.1739
0.1949 0.2163 0.2379 0.2598 0.2820
0.3044 0.3272 0.3502 0.3735 0.3972
0.4212 0.4455 0.4703 0.4953 0.5207
0.5464 0.5725 0.5994 0.6271 0.6557
0.6853 0.7160 0.7478 0.7805 0.8141
0.8486 0.8842 0.9212 0.9598 1.0000
Hrad:
0.0148 0.0296 0.0444 0.0593 0.0741
0.0915 0.1093 0.1279 0.1459 0.1633
0.1803 0.1970 0.2134 0.2273 0.2389
0.2509 0.2633 0.2759 0.2669 0.2519
0.2706 0.2962 0.3216 0.3466 0.3714
0.3959 0.4202 0.4442 0.4669 0.4892
0.5112 0.5331 0.5547 0.5761 0.5974
0.6184 0.6411 0.6696 0.6974 0.7248
0.7518 0.7787 0.8057 0.8334 0.8616
0.8903 0.9178 0.9452 0.9724 1.0000
Width:
0.0252 0.0503 0.0755 0.1007 0.1259
0.1458 0.1638 0.1791 0.1944 0.2097
0.2250 0.2403 0.2556 0.2738 0.2954
0.3170 0.3386 0.3603 0.4153 0.4947
0.5164 0.5231 0.5299 0.5366 0.5433
0.5501 0.5568 0.5635 0.5716 0.5801
0.5885 0.5970 0.6054 0.6139 0.6223
0.6307 0.6421 0.6639 0.6857 0.7075
0.7336 0.7603 0.7860 0.8074 0.8288
0.8503 0.8829 0.9187 0.9587 1.0000

Transect Transect13
Area:
0.0014 0.0036 0.0062 0.0091 0.0125
0.0163 0.0205 0.0251 0.0301 0.0359
0.0423 0.0496 0.0593 0.0738 0.0955
0.1187 0.1421 0.1658 0.1895 0.2134
0.2375 0.2617 0.2861 0.3106 0.3353
0.3602 0.3851 0.4103 0.4356 0.4610
0.4866 0.5123 0.5381 0.5641 0.5902

0.6164 0.6428 0.6693 0.6959 0.7227
0.7496 0.7767 0.8040 0.8314 0.8591
0.8869 0.9149 0.9431 0.9714 1.0000
Hrad:
0.0074 0.0155 0.0226 0.0292 0.0355
0.0414 0.0472 0.0528 0.0564 0.0595
0.0630 0.0683 0.0748 0.0798 0.0872
0.1057 0.1280 0.1525 0.1783 0.2049
0.2320 0.2594 0.2870 0.3147 0.3425
0.3702 0.3979 0.4256 0.4532 0.4808
0.5083 0.5357 0.5630 0.5902 0.6173
0.6442 0.6710 0.6977 0.7242 0.7506
0.7768 0.8023 0.8276 0.8527 0.8777
0.9025 0.9271 0.9516 0.9759 1.0000
Width:
0.0689 0.0829 0.0970 0.1110 0.1250
0.1390 0.1530 0.1671 0.1880 0.2127
0.2373 0.2917 0.4301 0.6143 0.8079
0.8143 0.8207 0.8269 0.8322 0.8375
0.8428 0.8481 0.8535 0.8588 0.8641
0.8694 0.8747 0.8800 0.8852 0.8899
0.8946 0.8993 0.9041 0.9088 0.9135
0.9182 0.9230 0.9277 0.9324 0.9371
0.9419 0.9483 0.9548 0.9613 0.9677
0.9742 0.9806 0.9871 0.9935 1.0000

Transect Transect14
Area:
0.0004 0.0017 0.0038 0.0068 0.0107
0.0153 0.0207 0.0290 0.0430 0.0576
0.0725 0.0878 0.1035 0.1196 0.1361
0.1530 0.1704 0.1882 0.2065 0.2252
0.2444 0.2641 0.2842 0.3049 0.3261
0.3478 0.3701 0.3930 0.4165 0.4404
0.4648 0.4895 0.5147 0.5404 0.5664
0.5928 0.6195 0.6465 0.6738 0.7015
0.7294 0.7576 0.7861 0.8149 0.8442
0.8741 0.9044 0.9353 0.9668 1.0000
Hrad:
0.0088 0.0176 0.0264 0.0352 0.0439
0.0532 0.0627 0.0581 0.0763 0.1051
0.1361 0.1678 0.1994 0.2302 0.2605
0.2903 0.3195 0.3481 0.3760 0.4030
0.4293 0.4550 0.4802 0.5049 0.5281
0.5506 0.5726 0.5941 0.6154 0.6380
0.6603 0.6821 0.7036 0.7248 0.7457
0.7677 0.7895 0.8112 0.8325 0.8537
0.8745 0.8952 0.9157 0.9352 0.9516
0.9677 0.9836 0.9993 1.0074 1.0000
Width:
0.0249 0.0499 0.0748 0.0998 0.1247
0.1477 0.1690 0.3449 0.4216 0.4320
0.4425 0.4529 0.4638 0.4766 0.4894
0.5022 0.5149 0.5277 0.5407 0.5549
0.5691 0.5832 0.5974 0.6115 0.6276
0.6445 0.6614 0.6782 0.6944 0.7067
0.7190 0.7313 0.7436 0.7559 0.7682

0.7773 0.7861 0.7949 0.8037 0.8125
0.8214 0.8302 0.8390 0.8491 0.8649
0.8806 0.8964 0.9122 0.9412 1.0000

Transect Transect15
Area:
0.0003 0.0014 0.0031 0.0053 0.0080
0.0110 0.0145 0.0184 0.0228 0.0277
0.0334 0.0397 0.0466 0.0542 0.0627
0.0725 0.0866 0.1063 0.1263 0.1468
0.1677 0.1892 0.2114 0.2343 0.2578
0.2818 0.3062 0.3312 0.3566 0.3826
0.4092 0.4362 0.4637 0.4916 0.5199
0.5487 0.5779 0.6076 0.6380 0.6689
0.7001 0.7318 0.7637 0.7961 0.8288
0.8620 0.8956 0.9298 0.9646 1.0000
Hrad:
0.0096 0.0192 0.0292 0.0412 0.0529
0.0640 0.0746 0.0841 0.0934 0.0994
0.1059 0.1138 0.1218 0.1293 0.1310
0.1337 0.1327 0.1479 0.1711 0.1973
0.2256 0.2534 0.2809 0.3076 0.3387
0.3697 0.3998 0.4294 0.4580 0.4859
0.5150 0.5439 0.5726 0.6011 0.6292
0.6568 0.6841 0.7075 0.7320 0.7591
0.7859 0.8125 0.8388 0.8649 0.8899
0.9146 0.9375 0.9581 0.9791 1.0000
Width:
0.0191 0.0381 0.0563 0.0690 0.0804
0.0918 0.1032 0.1161 0.1294 0.1479
0.1674 0.1852 0.2034 0.2230 0.2552
0.3117 0.5270 0.5565 0.5676 0.5808
0.5940 0.6114 0.6309 0.6537 0.6658
0.6779 0.6915 0.7057 0.7214 0.7378
0.7508 0.7635 0.7759 0.7880 0.8001
0.8124 0.8246 0.8435 0.8596 0.8703
0.8809 0.8913 0.9017 0.9120 0.9236
0.9353 0.9496 0.9672 0.9838 1.0000

Transect Transect16
Area:
0.0012 0.0036 0.0066 0.0100 0.0138
0.0182 0.0230 0.0283 0.0342 0.0407
0.0477 0.0552 0.0634 0.0719 0.0809
0.0904 0.1002 0.1104 0.1211 0.1321
0.1436 0.1556 0.1684 0.1821 0.1969
0.2152 0.2383 0.2639 0.2901 0.3169
0.3444 0.3726 0.4015 0.4311 0.4615
0.4924 0.5240 0.5561 0.5889 0.6224
0.6564 0.6912 0.7267 0.7630 0.8004
0.8387 0.8778 0.9177 0.9584 1.0000
Hrad:
0.0163 0.0403 0.0613 0.0805 0.0985
0.1158 0.1325 0.1479 0.1620 0.1762
0.1905 0.2046 0.2199 0.2376 0.2551
0.2722 0.2891 0.3058 0.3223 0.3386
0.3548 0.3646 0.3668 0.3706 0.3758

0.3754 0.3479 0.3676 0.3918 0.4188
0.4475 0.4762 0.5049 0.5342 0.5664
0.5989 0.6314 0.6636 0.6955 0.7272
0.7580 0.7880 0.8177 0.8422 0.8647
0.8926 0.9209 0.9483 0.9743 1.0000
Width:
0.0524 0.0638 0.0752 0.0866 0.0980
0.1094 0.1207 0.1330 0.1465 0.1599
0.1734 0.1870 0.1995 0.2094 0.2192
0.2290 0.2389 0.2487 0.2585 0.2684
0.2782 0.2933 0.3163 0.3392 0.3621
0.4981 0.5995 0.6160 0.6316 0.6469
0.6621 0.6789 0.6969 0.7150 0.7295
0.7439 0.7583 0.7731 0.7882 0.8033
0.8194 0.8363 0.8533 0.8768 0.9028
0.9218 0.9400 0.9589 0.9795 1.0000

Transect Transect17
Area:
0.0008 0.0030 0.0060 0.0094 0.0135
0.0180 0.0231 0.0287 0.0348 0.0414
0.0485 0.0560 0.0641 0.0726 0.0815
0.0911 0.1013 0.1121 0.1236 0.1360
0.1496 0.1674 0.1884 0.2107 0.2334
0.2565 0.2800 0.3039 0.3282 0.3529
0.3782 0.4040 0.4304 0.4578 0.4860
0.5151 0.5450 0.5757 0.6071 0.6394
0.6723 0.7059 0.7401 0.7751 0.8107
0.8470 0.8840 0.9218 0.9604 1.0000
Hrad:
0.0147 0.0331 0.0541 0.0731 0.0908
0.1078 0.1242 0.1410 0.1573 0.1736
0.1898 0.2058 0.2216 0.2371 0.2519
0.2631 0.2747 0.2866 0.2963 0.3002
0.2999 0.2937 0.2919 0.3184 0.3475
0.3780 0.4096 0.4417 0.4733 0.5035
0.5339 0.5643 0.5895 0.6111 0.6348
0.6602 0.6854 0.7104 0.7351 0.7611
0.7879 0.8145 0.8406 0.8662 0.8916
0.9164 0.9408 0.9649 0.9829 1.0000
Width:
0.0389 0.0665 0.0799 0.0933 0.1067
0.1200 0.1333 0.1457 0.1582 0.1702
0.1820 0.1938 0.2055 0.2173 0.2296
0.2457 0.2618 0.2779 0.2966 0.3226
0.3645 0.4825 0.5512 0.5609 0.5704
0.5799 0.5895 0.5990 0.6099 0.6228
0.6358 0.6487 0.6682 0.6924 0.7142
0.7338 0.7535 0.7733 0.7932 0.8112
0.8277 0.8443 0.8611 0.8782 0.8952
0.9127 0.9304 0.9481 0.9735 1.0000

Transect Transect18
Area:
0.0015 0.0051 0.0098 0.0156 0.0221
0.0293 0.0373 0.0459 0.0553 0.0654
0.0777 0.0925 0.1079 0.1235 0.1395

0.1557 0.1722 0.1889 0.2060 0.2234
0.2411 0.2593 0.2779 0.2969 0.3165
0.3367 0.3575 0.3789 0.4007 0.4231
0.4459 0.4693 0.4932 0.5180 0.5436
0.5699 0.5968 0.6243 0.6524 0.6810
0.7102 0.7399 0.7702 0.8011 0.8326
0.8647 0.8975 0.9310 0.9652 1.0000
Hrad:
0.0135 0.0321 0.0495 0.0672 0.0849
0.1019 0.1184 0.1343 0.1501 0.1654
0.1666 0.1838 0.2100 0.2383 0.2675
0.2971 0.3268 0.3565 0.3861 0.4132
0.4402 0.4669 0.4933 0.5152 0.5360
0.5570 0.5793 0.6014 0.6234 0.6460
0.6683 0.6904 0.7054 0.7179 0.7354
0.7533 0.7718 0.7913 0.8106 0.8300
0.8494 0.8686 0.8870 0.9045 0.9219
0.9377 0.9532 0.9687 0.9844 1.0000
Width:
0.0818 0.1198 0.1495 0.1744 0.1953
0.2159 0.2361 0.2562 0.2759 0.3053
0.3960 0.4316 0.4409 0.4490 0.4570
0.4649 0.4729 0.4808 0.4889 0.4999
0.5109 0.5220 0.5330 0.5493 0.5668
0.5839 0.5990 0.6141 0.6291 0.6429
0.6568 0.6706 0.6928 0.7182 0.7376
0.7562 0.7739 0.7900 0.8061 0.8219
0.8375 0.8530 0.8694 0.8867 0.9040
0.9231 0.9426 0.9619 0.9809 1.0000

Transect Transect19
Area:
0.0006 0.0025 0.0056 0.0096 0.0144
0.0197 0.0256 0.0319 0.0388 0.0462
0.0540 0.0623 0.0711 0.0803 0.0899
0.1001 0.1108 0.1221 0.1346 0.1520
0.1715 0.1926 0.2164 0.2406 0.2651
0.2898 0.3148 0.3401 0.3657 0.3916
0.4178 0.4443 0.4712 0.4983 0.5259
0.5538 0.5821 0.6108 0.6399 0.6696
0.7002 0.7315 0.7633 0.7957 0.8285
0.8619 0.8957 0.9300 0.9648 1.0000
Hrad:
0.0103 0.0206 0.0313 0.0442 0.0588
0.0728 0.0861 0.0990 0.1114 0.1239
0.1367 0.1492 0.1615 0.1735 0.1845
0.1947 0.2049 0.2151 0.2239 0.2287
0.2387 0.2349 0.2494 0.2774 0.3069
0.3373 0.3679 0.3987 0.4297 0.4610
0.4922 0.5235 0.5548 0.5849 0.6149
0.6446 0.6742 0.7036 0.7308 0.7517
0.7725 0.7968 0.8228 0.8486 0.8741
0.8995 0.9251 0.9503 0.9753 1.0000
Width:
0.0348 0.0696 0.1033 0.1265 0.1424
0.1570 0.1717 0.1863 0.2009 0.2148
0.2275 0.2402 0.2529 0.2656 0.2797

0.2950 0.3104 0.3257 0.4276 0.5299
0.5695 0.6427 0.6784 0.6856 0.6928
0.7001 0.7083 0.7171 0.7259 0.7346
0.7434 0.7522 0.7610 0.7713 0.7819
0.7924 0.8030 0.8135 0.8270 0.8500
0.8730 0.8903 0.9045 0.9187 0.9329
0.9467 0.9600 0.9734 0.9867 1.0000

Transect Transect2
Area:
0.0016 0.0057 0.0114 0.0186 0.0273
0.0376 0.0497 0.0635 0.0786 0.0949
0.1121 0.1295 0.1471 0.1649 0.1829
0.2011 0.2195 0.2381 0.2570 0.2760
0.2953 0.3149 0.3347 0.3547 0.3749
0.3954 0.4161 0.4370 0.4582 0.4797
0.5016 0.5237 0.5463 0.5691 0.5923
0.6158 0.6397 0.6641 0.6889 0.7142
0.7400 0.7662 0.7929 0.8202 0.8479
0.8761 0.9049 0.9343 0.9654 1.0000
Hrad:
0.0156 0.0365 0.0550 0.0734 0.0894
0.1046 0.1187 0.1395 0.1674 0.1959
0.2277 0.2617 0.2963 0.3311 0.3658
0.4001 0.4339 0.4666 0.4987 0.5302
0.5612 0.5917 0.6215 0.6509 0.6797
0.7081 0.7360 0.7634 0.7886 0.8118
0.8347 0.8572 0.8794 0.9012 0.9227
0.9439 0.9618 0.9781 0.9943 1.0104
1.0263 1.0421 1.0564 1.0706 1.0848
1.0990 1.1131 1.1158 1.1158 1.0000
Width:
0.0900 0.1344 0.1774 0.2166 0.2604
0.3065 0.3565 0.3988 0.4315 0.4643
0.4756 0.4810 0.4865 0.4919 0.4974
0.5028 0.5083 0.5146 0.5210 0.5273
0.5337 0.5401 0.5465 0.5529 0.5593
0.5657 0.5721 0.5785 0.5864 0.5957
0.6049 0.6142 0.6234 0.6327 0.6419
0.6512 0.6629 0.6757 0.6886 0.7014
0.7142 0.7271 0.7411 0.7551 0.7690
0.7830 0.7970 0.8207 0.9016 1.0000

Transect Transect20
Area:
0.0007 0.0028 0.0060 0.0100 0.0149
0.0206 0.0270 0.0342 0.0422 0.0510
0.0605 0.0708 0.0817 0.0934 0.1058
0.1206 0.1382 0.1570 0.1773 0.2001
0.2234 0.2469 0.2707 0.2947 0.3190
0.3436 0.3684 0.3934 0.4187 0.4441
0.4699 0.4958 0.5220 0.5484 0.5750
0.6018 0.6288 0.6560 0.6834 0.7110
0.7388 0.7667 0.7948 0.8231 0.8516
0.8803 0.9092 0.9387 0.9688 1.0000
Hrad:
0.0103 0.0206 0.0340 0.0462 0.0578

0.0690 0.0810 0.0923 0.1034 0.1143
0.1252 0.1364 0.1479 0.1589 0.1698
0.1784 0.1884 0.2023 0.2067 0.2202
0.2463 0.2732 0.3005 0.3281 0.3557
0.3836 0.4119 0.4400 0.4681 0.4961
0.5239 0.5516 0.5792 0.6066 0.6339
0.6618 0.6896 0.7172 0.7447 0.7720
0.7992 0.8262 0.8531 0.8798 0.9063
0.9327 0.9535 0.9692 0.9850 1.0000
Width:
0.0421 0.0840 0.1090 0.1341 0.1591
0.1842 0.2065 0.2296 0.2527 0.2758
0.2989 0.3208 0.3417 0.3635 0.3852
0.5114 0.5512 0.5886 0.6546 0.6983
0.7062 0.7141 0.7220 0.7299 0.7378
0.7454 0.7523 0.7592 0.7661 0.7730
0.7799 0.7868 0.7937 0.8006 0.8074
0.8130 0.8186 0.8241 0.8297 0.8353
0.8409 0.8464 0.8520 0.8576 0.8632
0.8687 0.8809 0.8992 0.9174 1.0000

Transect Transect21
Area:
0.0004 0.0017 0.0038 0.0068 0.0107
0.0151 0.0201 0.0255 0.0315 0.0379
0.0448 0.0523 0.0603 0.0688 0.0779
0.0875 0.0977 0.1084 0.1197 0.1316
0.1442 0.1572 0.1709 0.1851 0.1999
0.2153 0.2312 0.2478 0.2649 0.2828
0.3014 0.3210 0.3414 0.3627 0.3849
0.4081 0.4326 0.4585 0.4917 0.5279
0.5661 0.6061 0.6476 0.6908 0.7355
0.7818 0.8299 0.8806 0.9366 1.0000
Hrad:
0.0303 0.0607 0.0910 0.1214 0.1531
0.1941 0.2329 0.2701 0.3060 0.3409
0.3745 0.4057 0.4367 0.4675 0.4982
0.5288 0.5592 0.5886 0.6161 0.6443
0.6738 0.7034 0.7330 0.7626 0.7922
0.8218 0.8515 0.8796 0.9054 0.9288
0.9450 0.9624 0.9810 1.0004 1.0207
1.0290 1.0331 1.0399 0.8476 0.8597
0.8782 0.9026 0.9284 0.9545 0.9823
1.0103 1.0238 1.0195 1.0137 1.0000
Width:
0.0128 0.0257 0.0385 0.0513 0.0635
0.0709 0.0783 0.0857 0.0930 0.1004
0.1080 0.1162 0.1244 0.1326 0.1408
0.1490 0.1572 0.1657 0.1749 0.1839
0.1925 0.2012 0.2098 0.2184 0.2271
0.2357 0.2443 0.2535 0.2634 0.2741
0.2874 0.3007 0.3140 0.3273 0.3407
0.3586 0.3790 0.3995 0.5288 0.5603
0.5886 0.6134 0.6375 0.6617 0.6848
0.7080 0.7421 0.7914 0.9083 1.0000

Transect Transect22

Area:

0.0003	0.0011	0.0024	0.0043	0.0068
0.0098	0.0133	0.0174	0.0221	0.0274
0.0333	0.0397	0.0472	0.0577	0.0726
0.0897	0.1088	0.1298	0.1519	0.1749
0.1987	0.2229	0.2472	0.2718	0.2967
0.3217	0.3469	0.3724	0.3981	0.4240
0.4503	0.4768	0.5035	0.5306	0.5579
0.5854	0.6132	0.6412	0.6695	0.6980
0.7267	0.7556	0.7848	0.8142	0.8439
0.8739	0.9043	0.9350	0.9661	1.0000

Hrad:

0.0165	0.0331	0.0496	0.0662	0.0827
0.0993	0.1158	0.1308	0.1466	0.1626
0.1787	0.1925	0.1933	0.1379	0.1516
0.1654	0.1816	0.2002	0.2257	0.2501
0.2760	0.3061	0.3358	0.3652	0.3941
0.4228	0.4510	0.4790	0.5059	0.5323
0.5584	0.5842	0.6097	0.6350	0.6599
0.6850	0.7103	0.7354	0.7603	0.7849
0.8093	0.8335	0.8575	0.8813	0.9023
0.9228	0.9432	0.9633	0.9832	1.0000

Width:

0.0147	0.0295	0.0442	0.0589	0.0737
0.0884	0.1031	0.1196	0.1354	0.1512
0.1671	0.1852	0.2195	0.3789	0.4339
0.4924	0.5438	0.5888	0.6112	0.6348
0.6528	0.6587	0.6645	0.6703	0.6762
0.6820	0.6878	0.6937	0.7006	0.7079
0.7151	0.7224	0.7297	0.7369	0.7442
0.7510	0.7573	0.7635	0.7697	0.7760
0.7822	0.7885	0.7947	0.8010	0.8097
0.8188	0.8279	0.8371	0.8708	1.0000

Transect Transect23

Area:

0.0007	0.0027	0.0053	0.0084	0.0120
0.0163	0.0213	0.0271	0.0335	0.0423
0.0529	0.0649	0.0796	0.0952	0.1114
0.1283	0.1461	0.1648	0.1840	0.2038
0.2241	0.2451	0.2667	0.2891	0.3127
0.3376	0.3633	0.3891	0.4151	0.4412
0.4675	0.4939	0.5205	0.5472	0.5740
0.6010	0.6282	0.6555	0.6829	0.7106
0.7384	0.7663	0.7944	0.8227	0.8511
0.8797	0.9086	0.9379	0.9675	1.0000

Hrad:

0.0159	0.0372	0.0593	0.0794	0.0947
0.1098	0.1249	0.1396	0.1545	0.1324
0.1488	0.1522	0.1644	0.1889	0.2127
0.2333	0.2514	0.2741	0.2974	0.3204
0.3424	0.3624	0.3821	0.3958	0.4055
0.4161	0.4434	0.4712	0.4988	0.5261
0.5532	0.5801	0.6067	0.6332	0.6594
0.6853	0.7108	0.7361	0.7612	0.7861
0.8108	0.8353	0.8597	0.8838	0.9078
0.9280	0.9470	0.9658	0.9844	1.0000

Width:

0.0429	0.0685	0.0832	0.0979	0.1178
0.1381	0.1587	0.1800	0.2013	0.2973
0.3312	0.3977	0.4518	0.4700	0.4883
0.5125	0.5417	0.5603	0.5762	0.5922
0.6091	0.6293	0.6494	0.6796	0.7178
0.7552	0.7612	0.7655	0.7698	0.7742
0.7785	0.7829	0.7872	0.7916	0.7959
0.8004	0.8050	0.8097	0.8144	0.8190
0.8237	0.8284	0.8330	0.8377	0.8424
0.8506	0.8599	0.8693	0.9049	1.0000

Transect Transect24

Area:

0.0004	0.0015	0.0034	0.0060	0.0094
0.0136	0.0184	0.0240	0.0303	0.0373
0.0451	0.0537	0.0632	0.0736	0.0849
0.0969	0.1101	0.1251	0.1420	0.1641
0.1875	0.2111	0.2349	0.2591	0.2835
0.3082	0.3331	0.3584	0.3840	0.4098
0.4359	0.4624	0.4891	0.5161	0.5434
0.5710	0.5989	0.6272	0.6557	0.6845
0.7137	0.7431	0.7731	0.8036	0.8346
0.8662	0.8984	0.9314	0.9652	1.0000

Hrad:

0.0187	0.0373	0.0560	0.0746	0.0934
0.1128	0.1319	0.1509	0.1699	0.1887
0.2044	0.2206	0.2373	0.2535	0.2722
0.2912	0.3087	0.3237	0.3364	0.2633
0.2963	0.3287	0.3606	0.3919	0.4224
0.4525	0.4822	0.5114	0.5402	0.5686
0.5966	0.6242	0.6515	0.6781	0.7044
0.7304	0.7561	0.7815	0.8067	0.8315
0.8562	0.8785	0.8962	0.9138	0.9314
0.9489	0.9632	0.9741	0.9854	1.0000

Width:

0.0201	0.0401	0.0602	0.0803	0.1002
0.1192	0.1383	0.1573	0.1764	0.1954
0.2182	0.2411	0.2640	0.2880	0.3092
0.3301	0.3742	0.4213	0.4894	0.6159
0.6228	0.6298	0.6368	0.6440	0.6517
0.6593	0.6670	0.6746	0.6823	0.6899
0.6976	0.7052	0.7129	0.7210	0.7291
0.7372	0.7452	0.7533	0.7614	0.7694
0.7775	0.7876	0.8023	0.8171	0.8318
0.8465	0.8645	0.8860	0.9075	1.0000

Transect Transect25

Area:

0.0026	0.0083	0.0154	0.0233	0.0319
0.0413	0.0513	0.0618	0.0728	0.0843
0.0962	0.1085	0.1212	0.1344	0.1479
0.1619	0.1762	0.1909	0.2060	0.2214
0.2372	0.2534	0.2701	0.2871	0.3045
0.3224	0.3406	0.3593	0.3784	0.3979
0.4183	0.4398	0.4631	0.4901	0.5196
0.5494	0.5796	0.6100	0.6407	0.6716

0.7028 0.7343 0.7661 0.7982 0.8305
0.8631 0.8963 0.9300 0.9643 1.0000
Hrad:
0.0226 0.0464 0.0764 0.1046 0.1312
0.1565 0.1848 0.2121 0.2385 0.2642
0.2908 0.3166 0.3419 0.3667 0.3910
0.4149 0.4391 0.4633 0.4872 0.5107
0.5337 0.5551 0.5763 0.5973 0.6182
0.6388 0.6593 0.6797 0.6999 0.7152
0.7153 0.7171 0.6493 0.6203 0.6303
0.6586 0.6866 0.7142 0.7415 0.7684
0.7951 0.8214 0.8475 0.8733 0.8988
0.9202 0.9382 0.9562 0.9741 1.0000
Width:
0.1155 0.1757 0.1978 0.2178 0.2379
0.2577 0.2704 0.2831 0.2959 0.3086
0.3193 0.3301 0.3408 0.3516 0.3623
0.3731 0.3831 0.3927 0.4023 0.4118
0.4216 0.4325 0.4434 0.4543 0.4652
0.4761 0.4870 0.4980 0.5089 0.5235
0.5510 0.5785 0.6765 0.7520 0.7837
0.7908 0.7980 0.8051 0.8124 0.8196
0.8268 0.8341 0.8413 0.8485 0.8557
0.8671 0.8817 0.8963 0.9109 1.0000

Transect Transect26
Area:
0.0004 0.0016 0.0036 0.0065 0.0098
0.0136 0.0178 0.0225 0.0277 0.0336
0.0410 0.0529 0.0694 0.0907 0.1122
0.1339 0.1559 0.1779 0.2002 0.2227
0.2454 0.2683 0.2913 0.3146 0.3380
0.3616 0.3855 0.4096 0.4339 0.4584
0.4832 0.5082 0.5335 0.5590 0.5847
0.6106 0.6368 0.6632 0.6899 0.7167
0.7439 0.7712 0.7988 0.8266 0.8547
0.8831 0.9119 0.9409 0.9703 1.0000
Hrad:
0.0061 0.0122 0.0182 0.0250 0.0331
0.0407 0.0479 0.0548 0.0594 0.0644
0.0681 0.0721 0.0699 0.0891 0.1142
0.1409 0.1685 0.1965 0.2248 0.2532
0.2815 0.3098 0.3379 0.3659 0.3938
0.4214 0.4484 0.4753 0.5018 0.5282
0.5543 0.5802 0.6059 0.6313 0.6565
0.6815 0.7062 0.7307 0.7550 0.7791
0.8029 0.8265 0.8499 0.8725 0.8944
0.9160 0.9373 0.9584 0.9793 1.0000
Width:
0.0271 0.0542 0.0813 0.1050 0.1196
0.1343 0.1490 0.1638 0.1863 0.2088
0.3328 0.4529 0.6905 0.7182 0.7243
0.7307 0.7371 0.7435 0.7500 0.7564
0.7628 0.7693 0.7757 0.7821 0.7886
0.7953 0.8031 0.8109 0.8187 0.8265
0.8343 0.8421 0.8499 0.8577 0.8655
0.8733 0.8810 0.8888 0.8965 0.9043

0.9121 0.9198 0.9276 0.9368 0.9474
0.9579 0.9684 0.9789 0.9895 1.0000

Transect Transect3
Area:
0.0009 0.0036 0.0080 0.0143 0.0220
0.0304 0.0395 0.0491 0.0595 0.0704
0.0821 0.0944 0.1074 0.1210 0.1353
0.1503 0.1658 0.1817 0.1981 0.2151
0.2325 0.2504 0.2688 0.2876 0.3070
0.3269 0.3473 0.3684 0.3900 0.4123
0.4351 0.4586 0.4826 0.5073 0.5325
0.5583 0.5846 0.6115 0.6389 0.6669
0.6954 0.7245 0.7541 0.7846 0.8166
0.8499 0.8846 0.9210 0.9590 1.0000
Hrad:
0.0273 0.0545 0.0818 0.1091 0.1456
0.1832 0.2179 0.2505 0.2806 0.3095
0.3375 0.3645 0.3910 0.4168 0.4422
0.4696 0.4982 0.5260 0.5533 0.5800
0.6062 0.6320 0.6574 0.6824 0.7071
0.7302 0.7514 0.7725 0.7935 0.8146
0.8356 0.8566 0.8776 0.8987 0.9212
0.9435 0.9657 0.9878 1.0098 1.0317
1.0536 1.0754 1.0967 1.0963 1.0979
1.1010 1.1026 1.1013 1.1021 1.0000
Width:
0.0388 0.0776 0.1164 0.1552 0.1764
0.1900 0.2036 0.2173 0.2318 0.2463
0.2607 0.2752 0.2897 0.3042 0.3187
0.3310 0.3416 0.3523 0.3629 0.3735
0.3842 0.3948 0.4054 0.4161 0.4267
0.4383 0.4514 0.4645 0.4777 0.4908
0.5039 0.5170 0.5302 0.5431 0.5550
0.5669 0.5788 0.5907 0.6026 0.6144
0.6263 0.6382 0.6504 0.6802 0.7101
0.7399 0.7725 0.8095 0.8465 1.0000

Transect Transect4
Area:
0.0022 0.0080 0.0161 0.0269 0.0399
0.0536 0.0676 0.0820 0.0968 0.1120
0.1275 0.1435 0.1599 0.1766 0.1936
0.2109 0.2285 0.2463 0.2645 0.2829
0.3016 0.3206 0.3398 0.3594 0.3792
0.3994 0.4198 0.4406 0.4617 0.4832
0.5050 0.5270 0.5495 0.5722 0.5953
0.6187 0.6426 0.6669 0.6916 0.7168
0.7425 0.7686 0.7951 0.8222 0.8498
0.8780 0.9068 0.9361 0.9663 1.0000
Hrad:
0.0170 0.0389 0.0631 0.0917 0.1303
0.1751 0.2184 0.2594 0.2982 0.3349
0.3696 0.4026 0.4339 0.4653 0.4959
0.5253 0.5537 0.5811 0.6076 0.6332
0.6582 0.6824 0.7059 0.7289 0.7514
0.7723 0.7927 0.8126 0.8322 0.8515

0.8704 0.8890 0.9073 0.9254 0.9432
0.9583 0.9723 0.9862 1.0000 1.0138
1.0275 1.0411 1.0539 1.0640 1.0743
1.0847 1.0952 1.1058 1.0788 1.0000
Width:
0.1226 0.1924 0.2633 0.3390 0.3738
0.3846 0.3955 0.4064 0.4173 0.4282
0.4391 0.4500 0.4609 0.4696 0.4775
0.4853 0.4932 0.5011 0.5090 0.5168
0.5247 0.5326 0.5404 0.5483 0.5562
0.5652 0.5742 0.5833 0.5924 0.6014
0.6105 0.6195 0.6286 0.6376 0.6467
0.6581 0.6705 0.6830 0.6954 0.7078
0.7202 0.7326 0.7459 0.7616 0.7774
0.7931 0.8089 0.8246 0.8776 1.0000

Transect Transect5
Area:
0.0006 0.0024 0.0054 0.0093 0.0142
0.0200 0.0267 0.0346 0.0434 0.0533
0.0644 0.0768 0.0922 0.1102 0.1302
0.1521 0.1744 0.1967 0.2192 0.2419
0.2647 0.2876 0.3107 0.3340 0.3574
0.3810 0.4047 0.4286 0.4526 0.4768
0.5012 0.5257 0.5503 0.5752 0.6002
0.6253 0.6506 0.6761 0.7017 0.7274
0.7534 0.7795 0.8057 0.8321 0.8587
0.8854 0.9123 0.9394 0.9685 1.0000
Hrad:
0.0084 0.0168 0.0260 0.0356 0.0448
0.0537 0.0615 0.0695 0.0777 0.0852
0.0927 0.1029 0.1157 0.1309 0.1474
0.1690 0.1951 0.2226 0.2510 0.2799
0.3089 0.3377 0.3664 0.3949 0.4231
0.4509 0.4785 0.5056 0.5324 0.5588
0.5848 0.6104 0.6356 0.6605 0.6849
0.7089 0.7326 0.7558 0.7787 0.8013
0.8235 0.8453 0.8668 0.8880 0.9088
0.9294 0.9496 0.9695 0.9863 1.0000
Width:
0.0373 0.0745 0.1080 0.1364 0.1649
0.1933 0.2259 0.2584 0.2899 0.3249
0.3606 0.4256 0.5274 0.5858 0.6563
0.6865 0.6908 0.6951 0.6994 0.7037
0.7080 0.7129 0.7177 0.7226 0.7275
0.7324 0.7372 0.7421 0.7470 0.7518
0.7567 0.7616 0.7665 0.7713 0.7762
0.7811 0.7860 0.7909 0.7958 0.8008
0.8057 0.8106 0.8155 0.8204 0.8253
0.8303 0.8352 0.8401 0.9518 1.0000

Transect Transect6
Area:
0.0008 0.0031 0.0070 0.0124 0.0186
0.0257 0.0334 0.0416 0.0504 0.0597
0.0696 0.0800 0.0910 0.1025 0.1145
0.1271 0.1401 0.1535 0.1675 0.1822

0.1974 0.2132 0.2297 0.2467 0.2644
0.2829 0.3024 0.3228 0.3442 0.3665
0.3896 0.4134 0.4381 0.4636 0.4901
0.5183 0.5481 0.5791 0.6114 0.6449
0.6789 0.7132 0.7477 0.7825 0.8176
0.8529 0.8885 0.9243 0.9612 1.0000
Hrad:
0.0182 0.0364 0.0546 0.0772 0.1010
0.1260 0.1521 0.1771 0.2012 0.2246
0.2474 0.2696 0.2914 0.3128 0.3339
0.3574 0.3807 0.4017 0.4195 0.4373
0.4551 0.4729 0.4907 0.5084 0.5255
0.5335 0.5424 0.5522 0.5630 0.5785
0.5941 0.6099 0.6258 0.6419 0.6419
0.6447 0.6550 0.6693 0.6834 0.7014
0.7339 0.7659 0.7974 0.8284 0.8591
0.8893 0.9191 0.9483 0.9753 1.0000
Width:
0.0364 0.0729 0.1093 0.1360 0.1565
0.1729 0.1857 0.1985 0.2113 0.2241
0.2369 0.2498 0.2626 0.2754 0.2882
0.2984 0.3085 0.3201 0.3344 0.3486
0.3628 0.3770 0.3913 0.4055 0.4204
0.4431 0.4659 0.4887 0.5112 0.5297
0.5482 0.5668 0.5853 0.6038 0.6388
0.6780 0.7109 0.7394 0.7679 0.7917
0.7977 0.8037 0.8097 0.8157 0.8217
0.8277 0.8337 0.8449 0.8799 1.0000

Transect Transect7
Area:
0.0012 0.0047 0.0094 0.0147 0.0207
0.0273 0.0346 0.0426 0.0520 0.0626
0.0751 0.0897 0.1065 0.1241 0.1420
0.1601 0.1785 0.1971 0.2159 0.2350
0.2543 0.2738 0.2936 0.3135 0.3337
0.3542 0.3748 0.3957 0.4168 0.4382
0.4598 0.4816 0.5038 0.5264 0.5495
0.5730 0.5971 0.6215 0.6464 0.6718
0.6982 0.7258 0.7547 0.7847 0.8160
0.8485 0.8843 0.9218 0.9604 1.0000
Hrad:
0.0241 0.0507 0.0891 0.1241 0.1567
0.1876 0.2172 0.2439 0.2658 0.2840
0.2776 0.2770 0.2874 0.3188 0.3504
0.3819 0.4140 0.4459 0.4777 0.5092
0.5406 0.5717 0.6026 0.6334 0.6639
0.6942 0.7244 0.7543 0.7841 0.8137
0.8432 0.8710 0.8910 0.9112 0.9316
0.9521 0.9728 0.9936 1.0146 1.0307
1.0201 1.0130 1.0098 1.0113 1.0146
0.9995 0.9507 0.9667 0.9831 1.0000
Width:
0.0583 0.1101 0.1257 0.1413 0.1568
0.1724 0.1880 0.2174 0.2493 0.2815
0.3373 0.3930 0.4358 0.4423 0.4487
0.4551 0.4608 0.4665 0.4722 0.4779

0.4836 0.4893 0.4950 0.5007 0.5064
0.5121 0.5178 0.5236 0.5293 0.5350
0.5407 0.5473 0.5586 0.5700 0.5813
0.5927 0.6040 0.6153 0.6267 0.6410
0.6726 0.7043 0.7352 0.7643 0.7934
0.8389 0.9219 0.9479 0.9740 1.0000

Transect Transect8
Area:
0.0004 0.0018 0.0040 0.0071 0.0113
0.0173 0.0259 0.0384 0.0516 0.0652
0.0792 0.0935 0.1082 0.1232 0.1386
0.1543 0.1704 0.1869 0.2037 0.2208
0.2382 0.2559 0.2739 0.2921 0.3106
0.3294 0.3485 0.3678 0.3874 0.4073
0.4275 0.4479 0.4691 0.4912 0.5140
0.5378 0.5626 0.5884 0.6154 0.6433
0.6720 0.7017 0.7323 0.7644 0.7983
0.8354 0.8742 0.9146 0.9565 1.0000
Hrad:
0.0259 0.0518 0.0777 0.1036 0.1273
0.1409 0.1246 0.1385 0.1727 0.2067
0.2403 0.2735 0.3062 0.3386 0.3706
0.4022 0.4335 0.4645 0.4952 0.5275
0.5601 0.5923 0.6242 0.6559 0.6873
0.7184 0.7494 0.7801 0.8106 0.8409
0.8711 0.8925 0.8991 0.9074 0.9172
0.9253 0.9293 0.9353 0.9441 0.9596
0.9758 0.9926 1.0018 0.9955 0.9750
0.9524 0.9647 0.9777 0.9883 1.0000
Width:
0.0201 0.0401 0.0602 0.0802 0.1130
0.1593 0.2428 0.2948 0.3028 0.3108
0.3188 0.3268 0.3348 0.3428 0.3508
0.3588 0.3668 0.3748 0.3828 0.3894
0.3956 0.4018 0.4080 0.4142 0.4204
0.4266 0.4327 0.4389 0.4451 0.4513
0.4575 0.4682 0.4873 0.5064 0.5255
0.5463 0.5707 0.5952 0.6188 0.6387
0.6587 0.6786 0.7044 0.7435 0.7973
0.8597 0.8927 0.9261 0.9630 1.0000

Transect Transect9
Area:
0.0006 0.0023 0.0052 0.0093 0.0150
0.0225 0.0358 0.0509 0.0662 0.0817
0.0974 0.1134 0.1296 0.1460 0.1626
0.1794 0.1965 0.2138 0.2312 0.2489
0.2668 0.2849 0.3032 0.3218 0.3405
0.3595 0.3789 0.3990 0.4196 0.4408
0.4625 0.4848 0.5076 0.5309 0.5547
0.5791 0.6040 0.6295 0.6556 0.6824
0.7098 0.7380 0.7671 0.7972 0.8283
0.8605 0.8937 0.9281 0.9635 1.0000
Hrad:
0.0116 0.0233 0.0349 0.0443 0.0544
0.0602 0.0560 0.0783 0.1003 0.1219

	0.1433	0.1643	0.1850	0.2054	0.2256
	0.2456	0.2654	0.2849	0.3043	0.3234
	0.3422	0.3609	0.3794	0.3977	0.4159
	0.4351	0.4575	0.4795	0.5012	0.5230
	0.5449	0.5670	0.5894	0.6122	0.6351
	0.6584	0.6821	0.7062	0.7299	0.7540
	0.7786	0.8023	0.8259	0.8498	0.8731
	0.8971	0.9219	0.9473	0.9733	1.0000
Width:					
	0.0312	0.0623	0.0935	0.1328	0.1741
	0.2350	0.4043	0.4103	0.4162	0.4222
	0.4281	0.4340	0.4400	0.4459	0.4519
	0.4576	0.4633	0.4691	0.4748	0.4805
	0.4862	0.4919	0.4976	0.5034	0.5091
	0.5173	0.5332	0.5490	0.5649	0.5800
	0.5940	0.6080	0.6220	0.6361	0.6510
	0.6659	0.6808	0.6957	0.7141	0.7325
	0.7509	0.7738	0.7988	0.8249	0.8546
	0.8841	0.9131	0.9420	0.9710	1.0000

****
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 ..... NO
  Water Quality ..... NO
Infiltration Method ..... HORTON
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 11/04/2021 00:00:00
Ending Date 11/04/2021 06:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:05:00
Dry Time Step 00:05:00
Routing Time Step ..... 5.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 4
Head Tolerance ..... 0.001500 m

**********	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm

**************************	---------	-------
Total Precipitation	0.638	42.751
Evaporation Loss	0.000	0.000
Infiltration Loss	0.484	32.444
Surface Runoff	0.106	7.076
Final Storage	0.049	3.261
Continuity Error (%)	-0.073	

**************************	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
**************************	---------	---------
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.106	1.056
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.105	1.049
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	0.002
Continuity Error (%)	0.463	

****
Highest Continuity Errors
****
Node J48 (1.84%)

****
Time-Step Critical Elements
****
Link C33 (74.05%)
Link C16 (6.51%)

****
Highest Flow Instability Indexes
****
Link C31 (9)
Link C40 (7)
Link C23 (3)
Link C15 (3)
Link C35 (3)

****
Routing Time Step Summary
****

Minimum Time Step	:	0.50 sec
Average Time Step	:	2.79 sec
Maximum Time Step	:	5.00 sec
Percent in Steady State	:	0.00
Average Iterations per Step	:	2.01

```
  Percent Not Converging      :     0.03
  Time Step Frequencies       :
      5.000 -  3.155 sec      :    29.38 %
      3.155 -  1.991 sec      :    44.24 %
      1.991 -  1.256 sec      :    22.31 %
      1.256 -  0.792 sec      :     3.81 %
      0.792 -  0.500 sec      :     0.27 %


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

  ----------------------------------------------------------------------------------------
-----------------------------------------------
                                Total      Total      Total      Total     Imperv
Perv      Total       Total      Peak     Runoff
                              Precip      Runon       Evap      Infil     Runoff
Runoff     Runoff      Runoff    Runoff    Coeff
  Subcatchment                    mm         mm         mm         mm         mm
mm         mm    10^6 ltr       CMS
  ----------------------------------------------------------------------------------------
-----------------------------------------------
  EXT1                          42.75       0.00       0.00      36.03       2.90
0.26       3.16        0.08      0.06    0.074
  EXT12                         42.75       0.00       0.00      36.03       2.90
0.51       3.41        0.01      0.01    0.080
  EXT13                         42.75       0.00       0.00      36.03       2.89
0.39       3.29        0.02      0.01    0.077
  EXT14                         42.75       0.00       0.00      36.03       2.90
0.27       3.16        0.02      0.02    0.074
  EXT15                         42.75       0.00       0.00      36.03       2.90
0.19       3.08        0.13      0.11    0.072
  EXT2                          42.75       0.00       0.00      36.03       2.90
0.51       3.41        0.02      0.01    0.080
  EXT3                          42.75       0.00       0.00      36.03       2.90
0.63       3.52        0.01      0.01    0.082
  EXT4                          42.75       0.00       0.00      36.03       2.90
0.40       3.30        0.03      0.02    0.077
  EXT5_1                        42.75       0.00       0.00      36.03       2.90
0.57       3.47        0.00      0.00    0.081
  EXT5_2                        42.75       0.00       0.00      36.03       2.90
0.57       3.47        0.00      0.00    0.081
  EXT6                          42.75       0.00       0.00      36.03       2.90
0.58       3.47        0.01      0.01    0.081
  EXT7                          42.75       0.00       0.00      36.03       2.89
0.40       3.29        0.03      0.02    0.077
  EXT8                          42.75       0.00       0.00      36.03       2.90
0.56       3.46        0.01      0.01    0.081
  EXT9                          42.75       0.00       0.00      36.03       2.90
0.38       3.27        0.01      0.01    0.077
  S1                            42.75       0.00       0.00       4.65      36.61
0.17      36.78        0.02      0.02    0.860
  S10                           42.75       0.00       0.00       8.14      32.74
0.31      33.05        0.01      0.01    0.773
  S11                           42.75       0.00       0.00      13.17      27.43
0.42      27.85        0.02      0.01    0.651
  S12                           42.75       0.00       0.00       3.87      37.22
0.18      37.40        0.01      0.01    0.875
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S13			42.75	0.00	0.00	13.56	26.88
0.54	27.42	0.01	0.01	0.641			
S14			42.75	0.00	0.00	9.30	31.43
0.41	31.84	0.01	0.01	0.745			
S15			42.75	0.00	0.00	8.52	32.27
0.35	32.62	0.01	0.01	0.763			
S16			42.75	0.00	0.00	10.85	29.78
0.44	30.22	0.01	0.01	0.707			
S17			42.75	0.00	0.00	10.07	30.60
0.43	31.03	0.01	0.01	0.726			
S18			42.75	0.00	0.00	10.07	30.60
0.44	31.04	0.01	0.01	0.726			
S19			42.75	0.00	0.00	10.85	29.78
0.47	30.25	0.01	0.01	0.708			
S2			42.75	0.00	0.00	9.30	31.44
0.37	31.82	0.01	0.01	0.744			
S20			42.75	0.00	0.00	9.69	31.05
0.37	31.42	0.01	0.01	0.735			
S21			42.75	0.00	0.00	9.69	31.01
0.41	31.42	0.02	0.01	0.735			
S22			42.75	0.00	0.00	14.72	25.65
0.54	26.18	0.02	0.02	0.612			
S23			42.75	0.00	0.00	24.80	14.90
0.94	15.83	0.00	0.00	0.370			
S24			42.75	0.00	0.00	23.63	16.14
0.91	17.04	0.00	0.00	0.399			
S25			42.75	0.00	0.00	9.69	31.13
0.32	31.45	0.05	0.04	0.736			
S26			42.75	0.00	0.00	24.02	15.73
0.59	16.32	0.02	0.02	0.382			
S27			42.75	0.00	0.00	14.72	25.65
0.53	26.18	0.04	0.03	0.612			
S28			42.75	0.00	0.00	31.77	7.45
0.93	8.38	0.01	0.01	0.196			
S29			42.75	0.00	0.00	13.17	27.29
0.53	27.82	0.00	0.00	0.651			
S3			42.75	0.00	0.00	0.00	41.38
0.00	41.38	0.01	0.01	0.968			
S30			42.75	0.00	0.00	22.47	17.37
0.82	18.19	0.01	0.00	0.425			
S31			42.75	0.00	0.00	29.06	10.34
0.74	11.08	0.01	0.01	0.259			
S32			42.75	0.00	0.00	20.92	19.13
0.15	19.28	0.03	0.02	0.451			
S33			42.75	0.00	0.00	17.05	23.30
0.19	23.49	0.07	0.05	0.549			
S34			42.75	0.00	0.00	22.47	17.39
0.57	17.96	0.03	0.03	0.420			
S35			42.75	0.00	0.00	0.00	41.47
0.00	41.47	0.03	0.03	0.970			
S36			42.75	0.00	0.00	36.03	2.90
0.60	3.50	0.00	0.00	0.082			
S37			42.75	0.00	0.00	27.51	12.06
0.23	12.30	0.01	0.01	0.288			
S38			42.75	0.00	0.00	36.03	2.89
0.45	3.35	0.01	0.00	0.078			
S39			42.75	0.00	0.00	27.12	12.41
0.95	13.36	0.01	0.01	0.312			
S4			42.75	0.00	0.00	12.79	27.77
0.42	28.19	0.02	0.02	0.659			

S40		42.75	0.00	0.00	20.15	19.86	
0.62	20.48	0.00	0.00	0.479			
S41		42.75	0.00	0.00	21.31	18.61	
0.71	19.32	0.01	0.01	0.452			
S42		42.75	0.00	0.00	23.25	16.55	
0.61	17.16	0.01	0.01	0.401			
S5		42.75	0.00	0.00	12.01	28.59	
0.41	29.00	0.01	0.01	0.678			
S6		42.75	0.00	0.00	1.55	39.87	
0.07	39.94	0.03	0.03	0.934			
S7		42.75	0.00	0.00	10.85	29.82	
0.39	30.21	0.02	0.01	0.707			
S8		42.75	0.00	0.00	3.87	37.28	
0.17	37.45	0.02	0.02	0.876			
S9		42.75	0.00	0.00	11.62	28.98	
0.43	29.40	0.02	0.02	0.688			

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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
DITCH_INLET	JUNCTION	0.03	0.12	263.14	0 01:08	0.12
J1	JUNCTION	0.02	0.10	268.02	0 01:09	0.10
J10	JUNCTION	0.03	0.09	262.43	0 01:08	0.09
J12	JUNCTION	0.00	0.00	264.31	0 00:00	0.00
J13	JUNCTION	0.11	0.41	262.56	0 01:09	0.41
J14	JUNCTION	0.06	0.17	260.90	0 01:09	0.17
J15	JUNCTION	0.07	0.20	259.46	0 01:10	0.19
J16	JUNCTION	0.04	0.12	258.25	0 01:10	0.12
J17	JUNCTION	0.07	0.20	256.68	0 01:11	0.20
J18	JUNCTION	0.06	0.15	253.93	0 01:11	0.15
J2	JUNCTION	0.04	0.13	268.02	0 01:09	0.13
J20	JUNCTION	0.02	0.11	260.44	0 01:05	0.11
J21	JUNCTION	0.01	0.04	259.35	0 01:05	0.04
J22	JUNCTION	0.05	0.20	258.61	0 01:06	0.20
J23	JUNCTION	0.03	0.09	257.48	0 01:05	0.09
J24	JUNCTION	0.03	0.08	256.62	0 01:05	0.08
J25	JUNCTION	0.04	0.12	256.31	0 01:05	0.12
J26	JUNCTION	0.03	0.09	255.81	0 01:06	0.09
J27	JUNCTION	0.02	0.07	254.91	0 01:06	0.07
J28	JUNCTION	0.04	0.13	254.65	0 01:06	0.13
J29	JUNCTION	0.05	0.16	253.51	0 01:07	0.16
J3	JUNCTION	0.03	0.06	267.78	0 01:10	0.06
J30	JUNCTION	0.06	0.24	252.39	0 01:07	0.24
J36	JUNCTION	0.05	0.15	253.37	0 01:11	0.15
J37	JUNCTION	0.16	0.50	251.22	0 01:16	0.50
J4	JUNCTION	0.05	0.12	267.35	0 01:09	0.12
J41	JUNCTION	0.06	0.21	268.26	0 01:06	0.21
J42	JUNCTION	0.08	0.36	268.26	0 01:06	0.36
J43	JUNCTION	0.07	0.21	267.98	0 01:06	0.21
J44	JUNCTION	0.06	0.17	265.40	0 01:06	0.17
J45	JUNCTION	0.04	0.13	263.83	0 01:06	0.13

J46	JUNCTION	0.04	0.14	263.22	0	01:06	0.14
J47	JUNCTION	0.11	0.49	263.07	0	01:07	0.49
J48	JUNCTION	0.16	0.54	263.07	0	01:07	0.54
J49	JUNCTION	0.06	0.20	262.60	0	01:09	0.20
J5	JUNCTION	0.03	0.07	267.31	0	01:07	0.07
J50	JUNCTION	0.06	0.21	262.60	0	01:08	0.20
J51	JUNCTION	0.03	0.08	260.48	0	01:07	0.08
J6	JUNCTION	0.05	0.13	266.32	0	01:08	0.13
J7	JUNCTION	0.08	0.20	265.43	0	01:08	0.20
J8	JUNCTION	0.04	0.11	265.34	0	01:08	0.11
J11	OUTFALL	0.03	0.09	259.75	0	01:09	0.09
J31	OUTFALL	0.03	0.11	251.64	0	01:07	0.11
J38	OUTFALL	0.11	0.35	251.05	0	01:16	0.35

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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
DITCH_INLET	JUNCTION	0.012	0.100	0	01:08	0.0135	0.172	0.014
J1	JUNCTION	0.020	0.020	0	01:05	0.023	0.023	-0.111
J10	JUNCTION	0.000	0.099	0	01:08	0	0.172	0.004
J12	JUNCTION	0.000	0.000	0	00:00	0	0	0.000 ltr
J13	JUNCTION	0.035	0.334	0	01:09	0.0383	0.292	0.000
J14	JUNCTION	0.030	0.187	0	01:09	0.0333	0.325	0.033
J15	JUNCTION	0.007	0.190	0	01:09	0.00788	0.333	0.028
J16	JUNCTION	0.000	0.189	0	01:10	0	0.333	0.022
J17	JUNCTION	0.010	0.193	0	01:10	0.0118	0.345	0.083
J18	JUNCTION	0.006	0.194	0	01:11	0.00666	0.351	0.031
J2	JUNCTION	0.014	0.025	0	01:05	0.0148	0.0378	0.129
J20	JUNCTION	0.014	0.014	0	01:05	0.0151	0.0151	-0.300
J21	JUNCTION	0.009	0.026	0	01:04	0.0095	0.0246	0.164
J22	JUNCTION	0.035	0.057	0	01:05	0.04	0.0646	-0.011

J23		JUNCTION	0.009	0.060	0	01:05	0.00946
0.0741	0.040						
J24		JUNCTION	0.008	0.067	0	01:05	0.00831
0.0824	-0.007						
J25		JUNCTION	0.000	0.067	0	01:05	0
0.0824	0.012						
J26		JUNCTION	0.013	0.078	0	01:05	0.0155
0.0978	0.013						
J27		JUNCTION	0.012	0.088	0	01:06	0.0127
0.111	-0.004						
J28		JUNCTION	0.011	0.097	0	01:06	0.0115
0.122	0.067						
J29		JUNCTION	0.029	0.120	0	01:06	0.0338
0.156	-0.027						
J3		JUNCTION	0.000	0.021	0	01:09	0
0.0377	0.135						
J30		JUNCTION	0.014	0.130	0	01:06	0.0156
0.171	0.013						
J36		JUNCTION	0.126	0.370	0	01:08	0.146
0.709	-0.093						
J37		JUNCTION	0.000	0.360	0	01:11	0
0.71	0.685						
J4		JUNCTION	0.021	0.035	0	01:07	0.0232
0.0609	0.821						
J41		JUNCTION	0.092	0.092	0	01:05	0.109
0.109	-0.039						
J42		JUNCTION	0.004	0.090	0	01:05	0.00489
0.114	0.008						
J43		JUNCTION	0.004	0.089	0	01:06	0.00489
0.118	0.123						
J44		JUNCTION	0.075	0.153	0	01:05	0.0849
0.203	0.083						
J45		JUNCTION	0.024	0.174	0	01:06	0.03
0.233	0.020						
J46		JUNCTION	0.000	0.174	0	01:06	0
0.233	0.013						
J47		JUNCTION	0.014	0.188	0	01:06	0.0172
0.254	0.038						
J48		JUNCTION	0.004	0.004	0	01:05	0.00387
0.00433	1.875						
J49		JUNCTION	0.016	0.019	0	01:05	0.0189
0.0198	0.976						
J5		JUNCTION	0.041	0.062	0	01:06	0.0461
0.107	0.013						
J50		JUNCTION	0.075	0.075	0	01:05	0.0967
0.116	-0.086						
J51		JUNCTION	0.077	0.133	0	01:06	0.097
0.212	0.011						
J6		JUNCTION	0.015	0.073	0	01:06	0.0162
0.123	0.282						
J7		JUNCTION	0.016	0.082	0	01:07	0.0178
0.14	0.320						
J8		JUNCTION	0.017	0.092	0	01:08	0.019
0.159	0.158						
J11		OUTFALL	0.000	0.099	0	01:09	0
0.172	0.000						
J31		OUTFALL	0.000	0.127	0	01:07	0
0.171	0.000						
J38		OUTFALL	0.000	0.308	0	01:16	0
0.705	0.000						

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Node Surcharge Summary
****

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
J48	JUNCTION	0.27	0.241	0.929

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Node Flooding Summary
****

No nodes were flooded.

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Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J11	98.04	0.015	0.099	0.172
J31	93.56	0.016	0.127	0.171
J38	92.16	0.062	0.308	0.705
System	94.59	0.093	0.480	1.049

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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
C1	CHANNEL	0.013	0 01:08	0.03	0.01	0.38
C10	CONDUIT	0.099	0 01:09	3.24	0.03	0.12
C12	CONDUIT	0.018	0 01:04	1.28	0.03	0.19
C13	CHANNEL	0.022	0 01:05	0.19	0.00	0.10
C14	CONDUIT	0.052	0 01:06	1.41	0.10	0.35
C15	CHANNEL	0.060	0 01:05	2.25	0.00	0.05
C16	CHANNEL	0.067	0 01:05	1.82	0.00	0.06
C17	CHANNEL	0.067	0 01:06	0.97	0.00	0.05
C18	CHANNEL	0.078	0 01:06	0.94	0.00	0.04
C19	CHANNEL	0.088	0 01:06	0.32	0.00	0.05

C2	CONDUIT	0.021	0	01:09	1.01	0.13	0.33
C20	CHANNEL	0.096	0	01:06	0.82	0.00	0.09
C21	CHANNEL	0.119	0	01:07	0.57	0.00	0.12
C22	CHANNEL	0.000	0	00:00	0.00	0.00	0.24
C23	CONDUIT	0.170	0	01:09	1.56	0.22	0.65
C24	CHANNEL	0.186	0	01:10	1.03	0.01	0.14
C25	CHANNEL	0.189	0	01:10	1.53	0.00	0.11
C26	CHANNEL	0.188	0	01:10	0.75	0.00	0.10
C27	CHANNEL	0.192	0	01:11	1.35	0.00	0.11
C28	CONDUIT	0.127	0	01:07	1.69	0.06	0.26
C29	CHANNEL	0.086	0	01:05	0.35	0.00	0.13
C3	CHANNEL	0.021	0	01:10	0.15	0.00	0.07
C30	CONDUIT	0.004	0	01:02	0.08	0.06	1.00
C31	CONDUIT	0.314	0	01:09	2.50	0.94	1.00
C33	CHANNEL	0.194	0	01:11	1.87	0.00	0.10
C34	CHANNEL	0.360	0	01:11	0.45	0.00	0.16
C35	CONDUIT	0.308	0	01:16	1.34	0.64	0.63
C4	CHANNEL	0.032	0	01:09	0.19	0.02	0.08
C40	CONDUIT	0.085	0	01:06	1.34	0.63	0.85
C41	CHANNEL	0.088	0	01:06	1.09	0.00	0.05
C42	CHANNEL	0.152	0	01:06	1.22	0.00	0.05
C43	CHANNEL	0.123	0	01:07	0.50	0.00	0.06
C44	CHANNEL	0.174	0	01:06	1.02	0.00	0.07
C45	CHANNEL	0.173	0	01:06	0.34	0.00	0.16
C48	CHANNEL	0.017	0	01:14	0.06	0.00	0.14
C49	CONDUIT	0.065	0	01:08	1.62	0.07	0.32
C5	CHANNEL	0.061	0	01:07	0.32	0.00	0.09
C6	CHANNEL	0.071	0	01:08	0.54	0.00	0.09
C7	CHANNEL	0.081	0	01:08	0.33	0.04	0.06
C8	CHANNEL	0.092	0	01:08	1.05	0.00	0.06
C9	CONDUIT	0.099	0	01:08	2.68	0.05	0.14

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Flow Classification Summary
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Inlet 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
C1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.70	0.00
C10	1.00	0.01	0.00	0.00	0.01	0.98	0.00	0.00	0.63	0.00
C12	1.00	0.00	0.00	0.00	0.32	0.68	0.00	0.00	0.00	1.00
C13	1.00	0.00	0.00	0.00	0.85	0.15	0.00	0.00	0.70	0.00
C14	1.00	0.00	0.00	0.00	0.69	0.31	0.00	0.00	0.00	1.00
C15	1.00	0.00	0.00	0.00	0.03	0.97	0.00	0.00	0.36	0.00

C16	1.00	0.00	0.00	0.00	0.01	0.99	0.00	0.00	0.96
0.00									
C17	1.00	0.00	0.01	0.00	0.00	0.98	0.00	0.00	0.00
0.00									
C18	1.00	0.00	0.00	0.00	0.17	0.83	0.00	0.00	0.00
0.00									
C19	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
0.00									
C2	1.00	0.00	0.00	0.00	0.33	0.01	0.00	0.65	0.00
0.96									
C20	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.98
0.00									
C21	1.00	0.00	0.00	0.00	0.67	0.33	0.00	0.00	0.19
0.00									
C22	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
C23	1.00	0.00	0.00	0.00	0.85	0.15	0.00	0.00	0.00
1.00									
C24	1.00	0.00	0.00	0.00	0.92	0.08	0.00	0.00	0.94
0.00									
C25	1.00	0.00	0.00	0.00	0.02	0.98	0.00	0.00	0.00
0.00									
C26	1.00	0.00	0.03	0.00	0.95	0.02	0.00	0.00	0.92
0.00									
C27	1.00	0.00	0.00	0.00	0.02	0.98	0.00	0.00	0.05
0.00									
C28	1.00	0.00	0.00	0.00	0.07	0.93	0.00	0.00	0.00
0.99									
C29	1.00	0.00	0.00	0.00	0.80	0.20	0.00	0.00	0.48
0.00									
C3	1.00	0.00	0.03	0.00	0.97	0.00	0.00	0.00	0.95
0.00									
C30	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.08									
C31	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.00
0.97									
C33	1.00	0.00	0.00	0.00	0.02	0.98	0.00	0.00	0.00
0.00									
C34	1.00	0.00	0.00	0.00	0.93	0.07	0.00	0.00	0.86
0.00									
C35	1.00	0.02	0.00	0.00	0.97	0.01	0.00	0.00	0.00
0.86									
C4	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.03
0.00									
C40	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.00
0.98									
C41	1.00	0.00	0.00	0.00	0.40	0.60	0.00	0.00	0.32
0.00									
C42	1.00	0.00	0.00	0.00	0.01	0.99	0.00	0.00	0.00
0.00									
C43	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.93
0.00									
C44	1.00	0.00	0.00	0.00	0.93	0.07	0.00	0.00	0.92
0.00									
C45	1.00	0.00	0.01	0.00	0.86	0.13	0.00	0.00	0.77
0.00									
C48	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.09
0.00									
C49	1.00	0.00	0.00	0.00	0.17	0.83	0.00	0.00	0.00
0.99									

C5	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.91
0.00									
C6	1.00	0.00	0.00	0.00	0.96	0.04	0.00	0.00	0.96
0.00									
C7	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00									
C8	1.00	0.00	0.00	0.00	0.02	0.98	0.00	0.00	0.05
0.00									
C9	1.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00
0.00									

****
Conduit Surcharge Summary
****

	Hours Full			Hours Above Full	Hours Capacity
Conduit	Both Ends	Upstream	Dnstream	Normal Flow	Limited
C30	0.20	0.20	0.27	0.01	0.01
C31	0.01	0.08	0.06	0.01	0.01
C40	0.01	0.09	0.01	0.01	0.01

Analysis begun on: Tue Apr 12 17:03:51 2022
Analysis ended on: Tue Apr 12 17:03:53 2022
Total elapsed time: 00:00:02

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

Model revised as per comments from City of London

WARNING 02: maximum depth increased for Node DITCH_INLET
WARNING 02: maximum depth increased for Node J62

****
Element Count
****
Number of rain gages 9
Number of subcatchments ... 50
Number of nodes 66
Number of links 65
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
25mm_4HR	25mm_4HR	INTENSITY	5 min.
Chicago_3h_10_YR_LONDON	Chicago_3h_10_YR_LONDON	INTENSITY	5 min.
Chicago_3h_100YR_LONDON	Chicago_3h_100YR_LONDON	INTENSITY	5 min.
Chicago_3h_2_YR_LONDON	Chicago_3h_2_YR_LONDON	INTENSITY	5 min.
Chicago_3h_25_YR_LONDON	Chicago_3h_25_YR_LONDON	INTENSITY	5 min.
Chicago_3h_250_YR_LONDON	Chicago_3h_250_YR_LONDON	INTENSITY	5 min.
Chicago_3h_2YR_LONDON	Chicago_3h_2YR_LONDON	INTENSITY	5 min.
Chicago_3h_5_YR_LONDON	Chicago_3h_5_YR_LONDON	INTENSITY	5 min.
Chicago_3h_50_YR_LONDON	Chicago_3h_50_YR_LONDON	INTENSITY	5 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
EXT12	0.37	34.31	7.00	3.8000	Chicago_3h_2_YR_LONDON	J29
EXT13	0.47	43.99	7.00	1.7400	Chicago_3h_2_YR_LONDON	J26
EXT14	0.61	47.65	7.00	0.9200	Chicago_3h_2_YR_LONDON	J22
EXT15	4.22	124.40	7.00	2.7600	Chicago_3h_2_YR_LONDON	J14
EXT7	0.17	9.08	7.00	5.8300	Chicago_3h_2_YR_LONDON	J17
EXT8	0.25	19.90	7.00	6.7800	Chicago_3h_2_YR_LONDON	J17
EXT9	0.44	25.63	7.00	3.9900	Chicago_3h_2_YR_LONDON	J17

S1	0.06	16.03	88.00	0.5930
Chicago_3h_2_YR_LONDON J1				
S10	0.04	15.73	73.00	1.4400
Chicago_3h_2_YR_LONDON DITCH_INLET				
S11	0.05	22.58	67.00	0.7000
Chicago_3h_2_YR_LONDON J62				
S12	0.03	14.94	58.00	3.7400
Chicago_3h_2_YR_LONDON J21				
S13	0.05	17.64	32.00	8.0000
Chicago_3h_2_YR_LONDON J22				
S14	0.02	11.00	32.00	10.0000
Chicago_3h_2_YR_LONDON J22				
S15	0.03	10.74	37.00	4.0000
Chicago_3h_2_YR_LONDON J23				
S16	0.03	10.58	36.00	6.0000
Chicago_3h_2_YR_LONDON J24				
S17	0.04	14.68	43.00	11.0000
Chicago_3h_2_YR_LONDON J27				
S18	0.04	16.91	51.00	12.0000
Chicago_3h_2_YR_LONDON J28				
S19	0.02	11.00	56.00	12.0000
Chicago_3h_2_YR_LONDON J29				
S2	0.03	13.20	70.00	2.0800
Chicago_3h_2_YR_LONDON J33				
S20	0.04	14.70	65.00	3.0000
Chicago_3h_2_YR_LONDON J29				
S21	0.05	17.79	61.00	9.0000
Chicago_3h_2_YR_LONDON J30				
S22	0.07	22.32	62.00	4.0330
Chicago_3h_2_YR_LONDON J41				
S23	0.03	13.43	35.00	9.0000
Chicago_3h_2_YR_LONDON J42				
S24	0.03	14.35	35.00	7.4000
Chicago_3h_2_YR_LONDON J43				
S25	0.16	19.81	49.00	5.8300
Chicago_3h_2_YR_LONDON J11				
S26	0.15	31.69	59.00	2.4000
Chicago_3h_2_YR_LONDON J44				
S27	0.15	37.49	98.00	6.0000
Chicago_3h_2_YR_LONDON J13				
S28	0.15	29.80	92.00	11.0000
Chicago_3h_2_YR_LONDON J13				
S29	0.01	4.63	100.00	9.0000
Chicago_3h_2_YR_LONDON J48				
S3	0.02	10.27	71.00	1.6900
Chicago_3h_2_YR_LONDON J2				
S30	0.03	10.27	65.00	9.0000
Chicago_3h_2_YR_LONDON J49				
S31	0.08	14.87	52.00	5.0000
Chicago_3h_2_YR_LONDON J49				
S32	0.16	9.51	47.00	0.5000
Chicago_3h_2_YR_LONDON J17				
S33	0.29	16.71	55.00	1.0000
Chicago_3h_2_YR_LONDON J14				
S34	0.17	29.58	50.00	3.3930
Chicago_3h_2_YR_LONDON J51				
S35	0.07	16.66	73.00	4.1800
Chicago_3h_2_YR_LONDON J51				
S36	0.14	32.98	54.00	1.0000
Chicago_3h_2_YR_LONDON J51				

S37		0.06	14.57	89.00	0.0900
Chicago_3h_2_YR_LONDON	J51				
S38		0.16	11.73	14.00	4.3800
Chicago_3h_2_YR_LONDON	J16				
S39		0.05	17.73	90.00	9.0000
Chicago_3h_2_YR_LONDON	J16				
S4		0.08	19.14	62.00	2.5400
Chicago_3h_2_YR_LONDON	J4				
S40		0.02	7.86	100.00	2.0000
Chicago_3h_2_YR_LONDON	J16				
S41		0.03	8.21	80.00	8.0400
Chicago_3h_2_YR_LONDON	J9				
S42		0.06	9.46	40.00	5.7300
Chicago_3h_2_YR_LONDON	J32				
S43		5.80	280.00	59.00	0.5000
Chicago_3h_2_YR_LONDON	J63				
S5		0.04	14.96	56.00	1.2900
Chicago_3h_2_YR_LONDON	J5				
S6		0.09	18.34	34.00	2.4600
Chicago_3h_2_YR_LONDON	J5				
S7		0.05	16.81	23.00	2.3100
Chicago_3h_2_YR_LONDON	J6				
S8		0.05	15.87	21.00	3.0000
Chicago_3h_2_YR_LONDON	J7				
S9		0.06	17.43	21.00	4.0000
Chicago_3h_2_YR_LONDON	DITCH_INLET				

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
DITCH_INLET	JUNCTION	263.02	0.75	0.0	
J1	JUNCTION	267.92	1.50	0.0	
J10	JUNCTION	267.90	1.50	0.0	
J11	JUNCTION	265.23	1.50	0.0	
J12	JUNCTION	263.70	1.50	0.0	
J13	JUNCTION	262.58	1.50	0.0	
J14	JUNCTION	262.60	1.50	0.0	
J15	JUNCTION	255.92	1.50	0.0	
J16	JUNCTION	255.92	1.91	0.0	
J17	JUNCTION	262.60	1.50	0.0	
J18	JUNCTION	258.01	1.50	0.0	
J19	JUNCTION	258.07	1.79	0.0	
J2	JUNCTION	267.89	1.50	0.0	
J20	JUNCTION	252.03	1.50	0.0	
J21	JUNCTION	259.31	1.50	0.0	
J22	JUNCTION	258.41	1.50	0.0	
J23	JUNCTION	257.39	1.50	0.0	
J24	JUNCTION	256.54	1.50	0.0	
J25	JUNCTION	256.19	1.50	0.0	
J26	JUNCTION	255.72	1.50	0.0	
J27	JUNCTION	254.84	1.50	0.0	
J28	JUNCTION	254.52	1.50	0.0	
J29	JUNCTION	253.35	1.50	0.0	
J3	JUNCTION	267.72	1.50	0.0	

J30	JUNCTION	252.15	1.50	0.0
J32	JUNCTION	252.06	2.44	0.0
J33	JUNCTION	267.89	1.50	0.0
J34	JUNCTION	267.74	1.49	0.0
J35	JUNCTION	267.25	1.50	0.0
J36	JUNCTION	253.22	1.98	0.0
J37	JUNCTION	250.72	1.33	0.0
J38	JUNCTION	250.55	1.50	0.0
J39	JUNCTION	267.23	1.50	0.0
J4	JUNCTION	267.23	1.50	0.0
J40	JUNCTION	266.23	1.50	0.0
J41	JUNCTION	268.05	1.50	0.0
J42	JUNCTION	267.90	1.50	0.0
J43	JUNCTION	267.77	1.50	0.0
J44	JUNCTION	265.23	1.50	0.0
J45	JUNCTION	263.70	1.50	0.0
J46	JUNCTION	265.30	1.50	0.0
J47	JUNCTION	262.58	1.50	0.0
J48	JUNCTION	262.40	1.50	0.0
J49	JUNCTION	262.20	1.50	0.0
J5	JUNCTION	267.23	1.50	0.0
J50	JUNCTION	262.00	1.50	0.0
J51	JUNCTION	260.40	1.50	0.0
J52	JUNCTION	264.12	1.50	0.0
J53	JUNCTION	263.05	1.50	0.0
J54	JUNCTION	258.44	1.50	0.0
J55	JUNCTION	256.56	1.50	0.0
J56	JUNCTION	256.20	1.50	0.0
J57	JUNCTION	255.74	1.50	0.0
J58	JUNCTION	254.86	1.50	0.0
J59	JUNCTION	254.53	1.50	0.0
J6	JUNCTION	266.19	1.50	0.0
J60	JUNCTION	253.45	1.50	0.0
J61	JUNCTION	252.20	1.50	0.0
J62	JUNCTION	257.14	5.95	0.0
J63	JUNCTION	260.00	4.50	0.0
J7	JUNCTION	265.23	1.50	0.0
J8	JUNCTION	264.01	1.50	0.0
J9	JUNCTION	253.22	1.50	0.0
J31	OUTFALL	251.53	0.68	0.0
OF1	OUTFALL	256.73	0.75	0.0
OF2	OUTFALL	250.50	0.75	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	% Slope	Roughness
C1	DITCH_INLET	J62	CONDUIT	20.4	3.3360	0.0130
C1_1	J1	J33	CONDUIT	14.3	0.2023	0.0350
C10	J45	J13	CONDUIT	27.8	4.0369	0.0350

C11_1	J14	J51	CONDUIT	61.3	3.5362	0.0100
C12	J17	J50	CONDUIT	62.9	0.9537	0.0100
C13_1	J21	J54	CONDUIT	18.2	4.7847	0.0350
C14	J22	J23	CONDUIT	13.0	8.0932	0.0130
C15_1	J23	J55	CONDUIT	14.8	5.6015	0.0350
C16_1	J24	J56	CONDUIT	15.4	2.3600	0.0350
C17_1	J25	J57	CONDUIT	7.7	5.9563	0.0350
C18_1	J26	J58	CONDUIT	14.4	6.1241	0.0350
C19_1	J27	J59	CONDUIT	21.6	1.5463	0.0350
C2	J62	OF1	CONDUIT	74.0	0.5541	0.0130
C2_1	J2	J34	CONDUIT	7.8	1.9062	0.0350
C20_1	J28	J60	CONDUIT	13.6	7.9304	0.0350
C21_1	J29	J61	CONDUIT	36.2	3.4592	0.0350
C28	J30	J31	CONDUIT	20.9	3.1985	0.0130
C29	J41	J10	CONDUIT	33.6	0.4464	0.0350
C3	J63	J62	CONDUIT	80.0	0.6250	0.0130
C3_1	J3	J35	CONDUIT	39.8	1.2391	0.0350
C30	J47	J48	CONDUIT	23.9	0.7538	0.0350
C31	J48	J49	CONDUIT	13.8	1.4535	0.0130
C34_2	J20	J37	CONDUIT	58.5	2.2442	0.0350
C34_3	J9	J32	CONDUIT	51.9	2.2446	0.0350
C35	J37	J38	CONDUIT	9.9	1.7218	0.0130
C4	J38	OF2	CONDUIT	5.5	0.9050	0.0350
C4_1	J4	J39	CONDUIT	18.6	0.0859	0.0350
C40	J42	J43	CONDUIT	8.7	1.4905	0.0130
C41	J43	J11	CONDUIT	88.2	2.8812	0.0350
C42	J44	J12	CONDUIT	41.0	3.7357	0.0350
C43_2	J15	J36	CONDUIT	73.5	3.6762	0.0350
C43_3	J51	J19	CONDUIT	65.2	3.5733	0.0350
C43_5	J18	J16	CONDUIT	58.5	3.5756	0.0350

C48	J49	J50	CONDUIT	49.3	
0.4060	0.0350				
C49	J50	J51	CONDUIT	18.4	
8.7230	0.0130				
C5_1	J5	J40	CONDUIT	43.8	
2.2992	0.0350				
C6_1	J6	J46	CONDUIT	27.5	
3.3745	0.0350				
C7_1	J7	J52	CONDUIT	23.2	
5.0750	0.0350				
C8_1	J8	J53	CONDUIT	34.3	
3.1210	0.0350				
W6	J63	J47	CONDUIT	38.0	
1.3159	0.0130				
C1_2	J33	J2	WEIR		
C13_2	J54	J22	WEIR		
C15_2	J55	J24	WEIR		
C16_2	J56	J25	WEIR		
C17_2	J57	J26	WEIR		
C18_2	J58	J27	WEIR		
C19_2	J59	J28	WEIR		
C2_2	J34	J3	WEIR		
C20_2	J60	J29	WEIR		
C21_2	J61	J30	WEIR		
C3_2	J35	J4	WEIR		
C34_4	J32	J20	WEIR		
C4_2	J39	J5	WEIR		
C43_4	J16	J15	WEIR		
C43_6	J19	J18	WEIR		
C5_2	J40	J6	WEIR		
C6_2	J46	J7	WEIR		
C7_2	J52	J8	WEIR		
C8_2	J53	DITCH_INLET	WEIR		
W1	J36	J9	WEIR		
W2	J10	J42	WEIR		
W3	J11	J44	WEIR		
W4	J12	J45	WEIR		
W5	J13	J47	WEIR		
W7	J37	J38	WEIR		

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.75	0.44	0.19	0.75	1	2.03
C1_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1	2.49
C10	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1	11.11
C11_1	TRAPEZOIDAL	0.75	2.44	0.42	5.50	1	25.89

C12	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
18.89						
C13_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
12.09						
C14	CIRCULAR	0.45	0.16	0.11	0.45	1
0.81						
C15_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
13.08						
C16_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
8.49						
C17_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
13.49						
C18_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
13.68						
C19_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
6.87						
C2	CIRCULAR	0.75	0.44	0.19	0.75	1
0.83						
C2_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
7.63						
C20_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
15.56						
C21_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
10.28						
C28	CIRCULAR	0.68	0.36	0.17	0.68	1
1.50						
C29	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
3.69						
C3	CIRCULAR	0.53	0.22	0.13	0.53	1
0.34						
C3_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
6.15						
C30	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
4.80						
C31	CIRCULAR	0.75	0.44	0.19	0.75	2
1.34						
C34_2	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
8.28						
C34_3	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
8.28						
C35	CIRCULAR	0.68	0.36	0.17	0.68	1
1.10						
C4	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
5.26						
C4_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
1.62						
C40	CIRCULAR	0.45	0.16	0.11	0.45	1
0.35						
C41	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
9.38						
C42	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
10.68						
C43_2	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
10.60						
C43_3	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
10.45						
C43_5	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
10.45						
C48	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
3.52						

C49	CIRCULAR	0.75	0.44	0.19	0.75	1
3.29						
C5_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
8.38						
C6_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
10.15						
C7_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
12.45						
C8_1	TRAPEZOIDAL	0.75	3.19	0.47	6.50	1
9.76						
W6	CIRCULAR	0.75	0.44	0.19	0.75	1
1.28						

****
Transect Summary
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Transect Transect1
Area:

0.0032	0.0087	0.0165	0.0266	0.0378
0.0498	0.0627	0.0765	0.0911	0.1066
0.1226	0.1390	0.1559	0.1731	0.1907
0.2087	0.2272	0.2460	0.2652	0.2848
0.3048	0.3252	0.3459	0.3670	0.3882
0.4097	0.4315	0.4535	0.4757	0.4982
0.5209	0.5439	0.5672	0.5906	0.6144
0.6383	0.6624	0.6868	0.7114	0.7361
0.7611	0.7864	0.8118	0.8374	0.8633
0.8893	0.9156	0.9426	0.9707	1.0000

Hrad:

0.0219	0.0404	0.0550	0.0745	0.0982
0.1207	0.1423	0.1631	0.1832	0.2034
0.2283	0.2528	0.2768	0.3004	0.3236
0.3465	0.3690	0.3913	0.4132	0.4349
0.4563	0.4774	0.4994	0.5244	0.5480
0.5713	0.5945	0.6174	0.6401	0.6627
0.6850	0.7072	0.7292	0.7510	0.7732
0.7958	0.8182	0.8404	0.8625	0.8845
0.9063	0.9280	0.9496	0.9710	0.9923
1.0134	1.0309	1.0186	1.0084	1.0000

Width:

0.1493	0.2182	0.3034	0.3616	0.3902
0.4188	0.4473	0.4759	0.5045	0.5316
0.5448	0.5581	0.5714	0.5846	0.5979
0.6111	0.6244	0.6377	0.6509	0.6642
0.6774	0.6907	0.7023	0.7090	0.7173
0.7256	0.7338	0.7421	0.7504	0.7586
0.7669	0.7752	0.7835	0.7917	0.7994
0.8065	0.8136	0.8208	0.8279	0.8350
0.8421	0.8493	0.8564	0.8635	0.8706
0.8777	0.8880	0.9253	0.9627	1.0000

Transect Transect10
Area:

0.0015	0.0048	0.0088	0.0136	0.0191
0.0254	0.0326	0.0406	0.0495	0.0591

0.0707 0.0865 0.1026 0.1189 0.1355
0.1523 0.1694 0.1868 0.2044 0.2222
0.2403 0.2586 0.2771 0.2959 0.3150
0.3343 0.3538 0.3737 0.3940 0.4148
0.4361 0.4578 0.4807 0.5053 0.5305
0.5562 0.5825 0.6094 0.6369 0.6651
0.6939 0.7235 0.7541 0.7857 0.8185
0.8526 0.8878 0.9242 0.9616 1.0000
Hrad:
0.0132 0.0321 0.0486 0.0636 0.0779
0.0911 0.1034 0.1156 0.1287 0.1417
0.1333 0.1311 0.1529 0.1744 0.1956
0.2165 0.2371 0.2575 0.2777 0.2977
0.3174 0.3369 0.3562 0.3753 0.3942
0.4128 0.4313 0.4534 0.4767 0.4997
0.5226 0.5455 0.5661 0.5878 0.6109
0.6347 0.6592 0.6842 0.7094 0.7351
0.7613 0.7863 0.8116 0.8364 0.8604
0.8858 0.9123 0.9403 0.9698 1.0000
Width:
0.0736 0.0933 0.1130 0.1326 0.1523
0.1732 0.1955 0.2178 0.2381 0.2583
0.4006 0.4106 0.4171 0.4236 0.4301
0.4366 0.4432 0.4495 0.4558 0.4621
0.4683 0.4746 0.4809 0.4871 0.4934
0.4996 0.5059 0.5165 0.5290 0.5416
0.5542 0.5667 0.6168 0.6416 0.6557
0.6697 0.6837 0.6990 0.7163 0.7336
0.7509 0.7747 0.7998 0.8280 0.8611
0.8924 0.9221 0.9498 0.9749 1.0000

Transect Transect11
Area:
0.0035 0.0095 0.0183 0.0310 0.0441
0.0576 0.0714 0.0855 0.0997 0.1141
0.1288 0.1436 0.1586 0.1739 0.1893
0.2049 0.2208 0.2369 0.2534 0.2703
0.2876 0.3054 0.3235 0.3419 0.3606
0.3794 0.3985 0.4179 0.4374 0.4572
0.4772 0.4975 0.5183 0.5402 0.5632
0.5871 0.6119 0.6373 0.6634 0.6900
0.7173 0.7452 0.7738 0.8032 0.8337
0.8653 0.8976 0.9308 0.9649 1.0000
Hrad:
0.0192 0.0340 0.0406 0.0578 0.0800
0.1016 0.1235 0.1456 0.1673 0.1887
0.2098 0.2306 0.2512 0.2715 0.2915
0.3113 0.3309 0.3472 0.3620 0.3767
0.3913 0.4057 0.4221 0.4403 0.4584
0.4763 0.4941 0.5117 0.5291 0.5464
0.5636 0.5806 0.6035 0.6255 0.6469
0.6680 0.6894 0.7115 0.7341 0.7571
0.7805 0.8043 0.8286 0.8511 0.8732
0.8980 0.9236 0.9496 0.9745 1.0000
Width:
0.1332 0.2031 0.3180 0.3632 0.3733
0.3835 0.3910 0.3966 0.4022 0.4078

0.4134 0.4190 0.4247 0.4303 0.4359
0.4415 0.4471 0.4571 0.4688 0.4806
0.4924 0.5041 0.5132 0.5197 0.5261
0.5325 0.5390 0.5454 0.5519 0.5583
0.5647 0.5712 0.6000 0.6293 0.6573
0.6852 0.7055 0.7223 0.7392 0.7561
0.7743 0.7925 0.8108 0.8398 0.8735
0.8970 0.9192 0.9421 0.9710 1.0000

Transect Transect12
Area:
0.0005 0.0021 0.0047 0.0083 0.0129
0.0185 0.0249 0.0319 0.0396 0.0479
0.0569 0.0664 0.0766 0.0874 0.0991
0.1117 0.1252 0.1395 0.1552 0.1739
0.1949 0.2163 0.2379 0.2598 0.2820
0.3044 0.3272 0.3502 0.3735 0.3972
0.4212 0.4455 0.4703 0.4953 0.5207
0.5464 0.5725 0.5994 0.6271 0.6557
0.6853 0.7160 0.7478 0.7805 0.8141
0.8486 0.8842 0.9212 0.9598 1.0000
Hrad:
0.0148 0.0296 0.0444 0.0593 0.0741
0.0915 0.1093 0.1279 0.1459 0.1633
0.1803 0.1970 0.2134 0.2273 0.2389
0.2509 0.2633 0.2759 0.2669 0.2519
0.2706 0.2962 0.3216 0.3466 0.3714
0.3959 0.4202 0.4442 0.4669 0.4892
0.5112 0.5331 0.5547 0.5761 0.5974
0.6184 0.6411 0.6696 0.6974 0.7248
0.7518 0.7787 0.8057 0.8334 0.8616
0.8903 0.9178 0.9452 0.9724 1.0000
Width:
0.0252 0.0503 0.0755 0.1007 0.1259
0.1458 0.1638 0.1791 0.1944 0.2097
0.2250 0.2403 0.2556 0.2738 0.2954
0.3170 0.3386 0.3603 0.4153 0.4947
0.5164 0.5231 0.5299 0.5366 0.5433
0.5501 0.5568 0.5635 0.5716 0.5801
0.5885 0.5970 0.6054 0.6139 0.6223
0.6307 0.6421 0.6639 0.6857 0.7075
0.7336 0.7603 0.7860 0.8074 0.8288
0.8503 0.8829 0.9187 0.9587 1.0000

Transect Transect13
Area:
0.0014 0.0036 0.0062 0.0091 0.0125
0.0163 0.0205 0.0251 0.0301 0.0359
0.0423 0.0496 0.0593 0.0738 0.0955
0.1187 0.1421 0.1658 0.1895 0.2134
0.2375 0.2617 0.2861 0.3106 0.3353
0.3602 0.3851 0.4103 0.4356 0.4610
0.4866 0.5123 0.5381 0.5641 0.5902
0.6164 0.6428 0.6693 0.6959 0.7227
0.7496 0.7767 0.8040 0.8314 0.8591
0.8869 0.9149 0.9431 0.9714 1.0000
Hrad:

0.0074 0.0155 0.0226 0.0292 0.0355
0.0414 0.0472 0.0528 0.0564 0.0595
0.0630 0.0683 0.0748 0.0798 0.0872
0.1057 0.1280 0.1525 0.1783 0.2049
0.2320 0.2594 0.2870 0.3147 0.3425
0.3702 0.3979 0.4256 0.4532 0.4808
0.5083 0.5357 0.5630 0.5902 0.6173
0.6442 0.6710 0.6977 0.7242 0.7506
0.7768 0.8023 0.8276 0.8527 0.8777
0.9025 0.9271 0.9516 0.9759 1.0000
Width:
0.0689 0.0829 0.0970 0.1110 0.1250
0.1390 0.1530 0.1671 0.1880 0.2127
0.2373 0.2917 0.4301 0.6143 0.8079
0.8143 0.8207 0.8269 0.8322 0.8375
0.8428 0.8481 0.8535 0.8588 0.8641
0.8694 0.8747 0.8800 0.8852 0.8899
0.8946 0.8993 0.9041 0.9088 0.9135
0.9182 0.9230 0.9277 0.9324 0.9371
0.9419 0.9483 0.9548 0.9613 0.9677
0.9742 0.9806 0.9871 0.9935 1.0000

Transect Transect14
Area:
0.0004 0.0017 0.0038 0.0068 0.0107
0.0153 0.0207 0.0290 0.0430 0.0576
0.0725 0.0878 0.1035 0.1196 0.1361
0.1530 0.1704 0.1882 0.2065 0.2252
0.2444 0.2641 0.2842 0.3049 0.3261
0.3478 0.3701 0.3930 0.4165 0.4404
0.4648 0.4895 0.5147 0.5404 0.5664
0.5928 0.6195 0.6465 0.6738 0.7015
0.7294 0.7576 0.7861 0.8149 0.8442
0.8741 0.9044 0.9353 0.9668 1.0000
Hrad:
0.0088 0.0176 0.0264 0.0352 0.0439
0.0532 0.0627 0.0581 0.0763 0.1051
0.1361 0.1678 0.1994 0.2302 0.2605
0.2903 0.3195 0.3481 0.3760 0.4030
0.4293 0.4550 0.4802 0.5049 0.5281
0.5506 0.5726 0.5941 0.6154 0.6380
0.6603 0.6821 0.7036 0.7248 0.7457
0.7677 0.7895 0.8112 0.8325 0.8537
0.8745 0.8952 0.9157 0.9352 0.9516
0.9677 0.9836 0.9993 1.0074 1.0000
Width:
0.0249 0.0499 0.0748 0.0998 0.1247
0.1477 0.1690 0.3449 0.4216 0.4320
0.4425 0.4529 0.4638 0.4766 0.4894
0.5022 0.5149 0.5277 0.5407 0.5549
0.5691 0.5832 0.5974 0.6115 0.6276
0.6445 0.6614 0.6782 0.6944 0.7067
0.7190 0.7313 0.7436 0.7559 0.7682
0.7773 0.7861 0.7949 0.8037 0.8125
0.8214 0.8302 0.8390 0.8491 0.8649
0.8806 0.8964 0.9122 0.9412 1.0000

Transect Transect15
Area:

0.0003	0.0014	0.0031	0.0053	0.0080
0.0110	0.0145	0.0184	0.0228	0.0277
0.0334	0.0397	0.0466	0.0542	0.0627
0.0725	0.0866	0.1063	0.1263	0.1468
0.1677	0.1892	0.2114	0.2343	0.2578
0.2818	0.3062	0.3312	0.3566	0.3826
0.4092	0.4362	0.4637	0.4916	0.5199
0.5487	0.5779	0.6076	0.6380	0.6689
0.7001	0.7318	0.7637	0.7961	0.8288
0.8620	0.8956	0.9298	0.9646	1.0000

Hrad:

0.0096	0.0192	0.0292	0.0412	0.0529
0.0640	0.0746	0.0841	0.0934	0.0994
0.1059	0.1138	0.1218	0.1293	0.1310
0.1337	0.1327	0.1479	0.1711	0.1973
0.2256	0.2534	0.2809	0.3076	0.3387
0.3697	0.3998	0.4294	0.4580	0.4859
0.5150	0.5439	0.5726	0.6011	0.6292
0.6568	0.6841	0.7075	0.7320	0.7591
0.7859	0.8125	0.8388	0.8649	0.8899
0.9146	0.9375	0.9581	0.9791	1.0000

Width:

0.0191	0.0381	0.0563	0.0690	0.0804
0.0918	0.1032	0.1161	0.1294	0.1479
0.1674	0.1852	0.2034	0.2230	0.2552
0.3117	0.5270	0.5565	0.5676	0.5808
0.5940	0.6114	0.6309	0.6537	0.6658
0.6779	0.6915	0.7057	0.7214	0.7378
0.7508	0.7635	0.7759	0.7880	0.8001
0.8124	0.8246	0.8435	0.8596	0.8703
0.8809	0.8913	0.9017	0.9120	0.9236
0.9353	0.9496	0.9672	0.9838	1.0000

Transect Transect16
Area:

0.0012	0.0036	0.0066	0.0100	0.0138
0.0182	0.0230	0.0283	0.0342	0.0407
0.0477	0.0552	0.0634	0.0719	0.0809
0.0904	0.1002	0.1104	0.1211	0.1321
0.1436	0.1556	0.1684	0.1821	0.1969
0.2152	0.2383	0.2639	0.2901	0.3169
0.3444	0.3726	0.4015	0.4311	0.4615
0.4924	0.5240	0.5561	0.5889	0.6224
0.6564	0.6912	0.7267	0.7630	0.8004
0.8387	0.8778	0.9177	0.9584	1.0000

Hrad:

0.0163	0.0403	0.0613	0.0805	0.0985
0.1158	0.1325	0.1479	0.1620	0.1762
0.1905	0.2046	0.2199	0.2376	0.2551
0.2722	0.2891	0.3058	0.3223	0.3386
0.3548	0.3646	0.3668	0.3706	0.3758
0.3754	0.3479	0.3676	0.3918	0.4188
0.4475	0.4762	0.5049	0.5342	0.5664
0.5989	0.6314	0.6636	0.6955	0.7272
0.7580	0.7880	0.8177	0.8422	0.8647

0.8926 0.9209 0.9483 0.9743 1.0000
Width:
0.0524 0.0638 0.0752 0.0866 0.0980
0.1094 0.1207 0.1330 0.1465 0.1599
0.1734 0.1870 0.1995 0.2094 0.2192
0.2290 0.2389 0.2487 0.2585 0.2684
0.2782 0.2933 0.3163 0.3392 0.3621
0.4981 0.5995 0.6160 0.6316 0.6469
0.6621 0.6789 0.6969 0.7150 0.7295
0.7439 0.7583 0.7731 0.7882 0.8033
0.8194 0.8363 0.8533 0.8768 0.9028
0.9218 0.9400 0.9589 0.9795 1.0000

Transect Transect17
Area:
0.0008 0.0030 0.0060 0.0094 0.0135
0.0180 0.0231 0.0287 0.0348 0.0414
0.0485 0.0560 0.0641 0.0726 0.0815
0.0911 0.1013 0.1121 0.1236 0.1360
0.1496 0.1674 0.1884 0.2107 0.2334
0.2565 0.2800 0.3039 0.3282 0.3529
0.3782 0.4040 0.4304 0.4578 0.4860
0.5151 0.5450 0.5757 0.6071 0.6394
0.6723 0.7059 0.7401 0.7751 0.8107
0.8470 0.8840 0.9218 0.9604 1.0000
Hrad:
0.0147 0.0331 0.0541 0.0731 0.0908
0.1078 0.1242 0.1410 0.1573 0.1736
0.1898 0.2058 0.2216 0.2371 0.2519
0.2631 0.2747 0.2866 0.2963 0.3002
0.2999 0.2937 0.2919 0.3184 0.3475
0.3780 0.4096 0.4417 0.4733 0.5035
0.5339 0.5643 0.5895 0.6111 0.6348
0.6602 0.6854 0.7104 0.7351 0.7611
0.7879 0.8145 0.8406 0.8662 0.8916
0.9164 0.9408 0.9649 0.9829 1.0000
Width:
0.0389 0.0665 0.0799 0.0933 0.1067
0.1200 0.1333 0.1457 0.1582 0.1702
0.1820 0.1938 0.2055 0.2173 0.2296
0.2457 0.2618 0.2779 0.2966 0.3226
0.3645 0.4825 0.5512 0.5609 0.5704
0.5799 0.5895 0.5990 0.6099 0.6228
0.6358 0.6487 0.6682 0.6924 0.7142
0.7338 0.7535 0.7733 0.7932 0.8112
0.8277 0.8443 0.8611 0.8782 0.8952
0.9127 0.9304 0.9481 0.9735 1.0000

Transect Transect18
Area:
0.0015 0.0051 0.0098 0.0156 0.0221
0.0293 0.0373 0.0459 0.0553 0.0654
0.0777 0.0925 0.1079 0.1235 0.1395
0.1557 0.1722 0.1889 0.2060 0.2234
0.2411 0.2593 0.2779 0.2969 0.3165
0.3367 0.3575 0.3789 0.4007 0.4231
0.4459 0.4693 0.4932 0.5180 0.5436

0.5699 0.5968 0.6243 0.6524 0.6810
0.7102 0.7399 0.7702 0.8011 0.8326
0.8647 0.8975 0.9310 0.9652 1.0000
Hrad:
0.0135 0.0321 0.0495 0.0672 0.0849
0.1019 0.1184 0.1343 0.1501 0.1654
0.1666 0.1838 0.2100 0.2383 0.2675
0.2971 0.3268 0.3565 0.3861 0.4132
0.4402 0.4669 0.4933 0.5152 0.5360
0.5570 0.5793 0.6014 0.6234 0.6460
0.6683 0.6904 0.7054 0.7179 0.7354
0.7533 0.7718 0.7913 0.8106 0.8300
0.8494 0.8686 0.8870 0.9045 0.9219
0.9377 0.9532 0.9687 0.9844 1.0000
Width:
0.0818 0.1198 0.1495 0.1744 0.1953
0.2159 0.2361 0.2562 0.2759 0.3053
0.3960 0.4316 0.4409 0.4490 0.4570
0.4649 0.4729 0.4808 0.4889 0.4999
0.5109 0.5220 0.5330 0.5493 0.5668
0.5839 0.5990 0.6141 0.6291 0.6429
0.6568 0.6706 0.6928 0.7182 0.7376
0.7562 0.7739 0.7900 0.8061 0.8219
0.8375 0.8530 0.8694 0.8867 0.9040
0.9231 0.9426 0.9619 0.9809 1.0000

Transect Transect19
Area:
0.0006 0.0025 0.0056 0.0096 0.0144
0.0197 0.0256 0.0319 0.0388 0.0462
0.0540 0.0623 0.0711 0.0803 0.0899
0.1001 0.1108 0.1221 0.1346 0.1520
0.1715 0.1926 0.2164 0.2406 0.2651
0.2898 0.3148 0.3401 0.3657 0.3916
0.4178 0.4443 0.4712 0.4983 0.5259
0.5538 0.5821 0.6108 0.6399 0.6696
0.7002 0.7315 0.7633 0.7957 0.8285
0.8619 0.8957 0.9300 0.9648 1.0000
Hrad:
0.0103 0.0206 0.0313 0.0442 0.0588
0.0728 0.0861 0.0990 0.1114 0.1239
0.1367 0.1492 0.1615 0.1735 0.1845
0.1947 0.2049 0.2151 0.2239 0.2287
0.2387 0.2349 0.2494 0.2774 0.3069
0.3373 0.3679 0.3987 0.4297 0.4610
0.4922 0.5235 0.5548 0.5849 0.6149
0.6446 0.6742 0.7036 0.7308 0.7517
0.7725 0.7968 0.8228 0.8486 0.8741
0.8995 0.9251 0.9503 0.9753 1.0000
Width:
0.0348 0.0696 0.1033 0.1265 0.1424
0.1570 0.1717 0.1863 0.2009 0.2148
0.2275 0.2402 0.2529 0.2656 0.2797
0.2950 0.3104 0.3257 0.4276 0.5299
0.5695 0.6427 0.6784 0.6856 0.6928
0.7001 0.7083 0.7171 0.7259 0.7346
0.7434 0.7522 0.7610 0.7713 0.7819

0.7924 0.8030 0.8135 0.8270 0.8500
0.8730 0.8903 0.9045 0.9187 0.9329
0.9467 0.9600 0.9734 0.9867 1.0000

Transect Transect2
Area:
0.0016 0.0057 0.0114 0.0186 0.0273
0.0376 0.0497 0.0635 0.0786 0.0949
0.1121 0.1295 0.1471 0.1649 0.1829
0.2011 0.2195 0.2381 0.2570 0.2760
0.2953 0.3149 0.3347 0.3547 0.3749
0.3954 0.4161 0.4370 0.4582 0.4797
0.5016 0.5237 0.5463 0.5691 0.5923
0.6158 0.6397 0.6641 0.6889 0.7142
0.7400 0.7662 0.7929 0.8202 0.8479
0.8761 0.9049 0.9343 0.9654 1.0000
Hrad:
0.0156 0.0365 0.0550 0.0734 0.0894
0.1046 0.1187 0.1395 0.1674 0.1959
0.2277 0.2617 0.2963 0.3311 0.3658
0.4001 0.4339 0.4666 0.4987 0.5302
0.5612 0.5917 0.6215 0.6509 0.6797
0.7081 0.7360 0.7634 0.7886 0.8118
0.8347 0.8572 0.8794 0.9012 0.9227
0.9439 0.9618 0.9781 0.9943 1.0104
1.0263 1.0421 1.0564 1.0706 1.0848
1.0990 1.1131 1.1158 1.1158 1.0000
Width:
0.0900 0.1344 0.1774 0.2166 0.2604
0.3065 0.3565 0.3988 0.4315 0.4643
0.4756 0.4810 0.4865 0.4919 0.4974
0.5028 0.5083 0.5146 0.5210 0.5273
0.5337 0.5401 0.5465 0.5529 0.5593
0.5657 0.5721 0.5785 0.5864 0.5957
0.6049 0.6142 0.6234 0.6327 0.6419
0.6512 0.6629 0.6757 0.6886 0.7014
0.7142 0.7271 0.7411 0.7551 0.7690
0.7830 0.7970 0.8207 0.9016 1.0000

Transect Transect20
Area:
0.0007 0.0028 0.0060 0.0100 0.0149
0.0206 0.0270 0.0342 0.0422 0.0510
0.0605 0.0708 0.0817 0.0934 0.1058
0.1206 0.1382 0.1570 0.1773 0.2001
0.2234 0.2469 0.2707 0.2947 0.3190
0.3436 0.3684 0.3934 0.4187 0.4441
0.4699 0.4958 0.5220 0.5484 0.5750
0.6018 0.6288 0.6560 0.6834 0.7110
0.7388 0.7667 0.7948 0.8231 0.8516
0.8803 0.9092 0.9387 0.9688 1.0000
Hrad:
0.0103 0.0206 0.0340 0.0462 0.0578
0.0690 0.0810 0.0923 0.1034 0.1143
0.1252 0.1364 0.1479 0.1589 0.1698
0.1784 0.1884 0.2023 0.2067 0.2202
0.2463 0.2732 0.3005 0.3281 0.3557

0.3836 0.4119 0.4400 0.4681 0.4961
0.5239 0.5516 0.5792 0.6066 0.6339
0.6618 0.6896 0.7172 0.7447 0.7720
0.7992 0.8262 0.8531 0.8798 0.9063
0.9327 0.9535 0.9692 0.9850 1.0000
Width:
0.0421 0.0840 0.1090 0.1341 0.1591
0.1842 0.2065 0.2296 0.2527 0.2758
0.2989 0.3208 0.3417 0.3635 0.3852
0.5114 0.5512 0.5886 0.6546 0.6983
0.7062 0.7141 0.7220 0.7299 0.7378
0.7454 0.7523 0.7592 0.7661 0.7730
0.7799 0.7868 0.7937 0.8006 0.8074
0.8130 0.8186 0.8241 0.8297 0.8353
0.8409 0.8464 0.8520 0.8576 0.8632
0.8687 0.8809 0.8992 0.9174 1.0000

Transect Transect21
Area:
0.0004 0.0017 0.0038 0.0068 0.0107
0.0151 0.0201 0.0255 0.0315 0.0379
0.0448 0.0523 0.0603 0.0688 0.0779
0.0875 0.0977 0.1084 0.1197 0.1316
0.1442 0.1572 0.1709 0.1851 0.1999
0.2153 0.2312 0.2478 0.2649 0.2828
0.3014 0.3210 0.3414 0.3627 0.3849
0.4081 0.4326 0.4585 0.4917 0.5279
0.5661 0.6061 0.6476 0.6908 0.7355
0.7818 0.8299 0.8806 0.9366 1.0000
Hrad:
0.0303 0.0607 0.0910 0.1214 0.1531
0.1941 0.2329 0.2701 0.3060 0.3409
0.3745 0.4057 0.4367 0.4675 0.4982
0.5288 0.5592 0.5886 0.6161 0.6443
0.6738 0.7034 0.7330 0.7626 0.7922
0.8218 0.8515 0.8796 0.9054 0.9288
0.9450 0.9624 0.9810 1.0004 1.0207
1.0290 1.0331 1.0399 0.8476 0.8597
0.8782 0.9026 0.9284 0.9545 0.9823
1.0103 1.0238 1.0195 1.0137 1.0000
Width:
0.0128 0.0257 0.0385 0.0513 0.0635
0.0709 0.0783 0.0857 0.0930 0.1004
0.1080 0.1162 0.1244 0.1326 0.1408
0.1490 0.1572 0.1657 0.1749 0.1839
0.1925 0.2012 0.2098 0.2184 0.2271
0.2357 0.2443 0.2535 0.2634 0.2741
0.2874 0.3007 0.3140 0.3273 0.3407
0.3586 0.3790 0.3995 0.5288 0.5603
0.5886 0.6134 0.6375 0.6617 0.6848
0.7080 0.7421 0.7914 0.9083 1.0000

Transect Transect22
Area:
0.0003 0.0011 0.0024 0.0043 0.0068
0.0098 0.0133 0.0174 0.0221 0.0274
0.0333 0.0397 0.0472 0.0577 0.0726

0.0897 0.1088 0.1298 0.1519 0.1749
0.1987 0.2229 0.2472 0.2718 0.2967
0.3217 0.3469 0.3724 0.3981 0.4240
0.4503 0.4768 0.5035 0.5306 0.5579
0.5854 0.6132 0.6412 0.6695 0.6980
0.7267 0.7556 0.7848 0.8142 0.8439
0.8739 0.9043 0.9350 0.9661 1.0000
Hrad:
0.0165 0.0331 0.0496 0.0662 0.0827
0.0993 0.1158 0.1308 0.1466 0.1626
0.1787 0.1925 0.1933 0.1379 0.1516
0.1654 0.1816 0.2002 0.2257 0.2501
0.2760 0.3061 0.3358 0.3652 0.3941
0.4228 0.4510 0.4790 0.5059 0.5323
0.5584 0.5842 0.6097 0.6350 0.6599
0.6850 0.7103 0.7354 0.7603 0.7849
0.8093 0.8335 0.8575 0.8813 0.9023
0.9228 0.9432 0.9633 0.9832 1.0000
Width:
0.0147 0.0295 0.0442 0.0589 0.0737
0.0884 0.1031 0.1196 0.1354 0.1512
0.1671 0.1852 0.2195 0.3789 0.4339
0.4924 0.5438 0.5888 0.6112 0.6348
0.6528 0.6587 0.6645 0.6703 0.6762
0.6820 0.6878 0.6937 0.7006 0.7079
0.7151 0.7224 0.7297 0.7369 0.7442
0.7510 0.7573 0.7635 0.7697 0.7760
0.7822 0.7885 0.7947 0.8010 0.8097
0.8188 0.8279 0.8371 0.8708 1.0000

Transect Transect23
Area:
0.0007 0.0027 0.0053 0.0084 0.0120
0.0163 0.0213 0.0271 0.0335 0.0423
0.0529 0.0649 0.0796 0.0952 0.1114
0.1283 0.1461 0.1648 0.1840 0.2038
0.2241 0.2451 0.2667 0.2891 0.3127
0.3376 0.3633 0.3891 0.4151 0.4412
0.4675 0.4939 0.5205 0.5472 0.5740
0.6010 0.6282 0.6555 0.6829 0.7106
0.7384 0.7663 0.7944 0.8227 0.8511
0.8797 0.9086 0.9379 0.9675 1.0000
Hrad:
0.0159 0.0372 0.0593 0.0794 0.0947
0.1098 0.1249 0.1396 0.1545 0.1324
0.1488 0.1522 0.1644 0.1889 0.2127
0.2333 0.2514 0.2741 0.2974 0.3204
0.3424 0.3624 0.3821 0.3958 0.4055
0.4161 0.4434 0.4712 0.4988 0.5261
0.5532 0.5801 0.6067 0.6332 0.6594
0.6853 0.7108 0.7361 0.7612 0.7861
0.8108 0.8353 0.8597 0.8838 0.9078
0.9280 0.9470 0.9658 0.9844 1.0000
Width:
0.0429 0.0685 0.0832 0.0979 0.1178
0.1381 0.1587 0.1800 0.2013 0.2973
0.3312 0.3977 0.4518 0.4700 0.4883

0.5125 0.5417 0.5603 0.5762 0.5922
0.6091 0.6293 0.6494 0.6796 0.7178
0.7552 0.7612 0.7655 0.7698 0.7742
0.7785 0.7829 0.7872 0.7916 0.7959
0.8004 0.8050 0.8097 0.8144 0.8190
0.8237 0.8284 0.8330 0.8377 0.8424
0.8506 0.8599 0.8693 0.9049 1.0000

Transect Transect24
Area:
0.0004 0.0015 0.0034 0.0060 0.0094
0.0136 0.0184 0.0240 0.0303 0.0373
0.0451 0.0537 0.0632 0.0736 0.0849
0.0969 0.1101 0.1251 0.1420 0.1641
0.1875 0.2111 0.2349 0.2591 0.2835
0.3082 0.3331 0.3584 0.3840 0.4098
0.4359 0.4624 0.4891 0.5161 0.5434
0.5710 0.5989 0.6272 0.6557 0.6845
0.7137 0.7431 0.7731 0.8036 0.8346
0.8662 0.8984 0.9314 0.9652 1.0000
Hrad:
0.0187 0.0373 0.0560 0.0746 0.0934
0.1128 0.1319 0.1509 0.1699 0.1887
0.2044 0.2206 0.2373 0.2535 0.2722
0.2912 0.3087 0.3237 0.3364 0.2633
0.2963 0.3287 0.3606 0.3919 0.4224
0.4525 0.4822 0.5114 0.5402 0.5686
0.5966 0.6242 0.6515 0.6781 0.7044
0.7304 0.7561 0.7815 0.8067 0.8315
0.8562 0.8785 0.8962 0.9138 0.9314
0.9489 0.9632 0.9741 0.9854 1.0000
Width:
0.0201 0.0401 0.0602 0.0803 0.1002
0.1192 0.1383 0.1573 0.1764 0.1954
0.2182 0.2411 0.2640 0.2880 0.3092
0.3301 0.3742 0.4213 0.4894 0.6159
0.6228 0.6298 0.6368 0.6440 0.6517
0.6593 0.6670 0.6746 0.6823 0.6899
0.6976 0.7052 0.7129 0.7210 0.7291
0.7372 0.7452 0.7533 0.7614 0.7694
0.7775 0.7876 0.8023 0.8171 0.8318
0.8465 0.8645 0.8860 0.9075 1.0000

Transect Transect25
Area:
0.0026 0.0083 0.0154 0.0233 0.0319
0.0413 0.0513 0.0618 0.0728 0.0843
0.0962 0.1085 0.1212 0.1344 0.1479
0.1619 0.1762 0.1909 0.2060 0.2214
0.2372 0.2534 0.2701 0.2871 0.3045
0.3224 0.3406 0.3593 0.3784 0.3979
0.4183 0.4398 0.4631 0.4901 0.5196
0.5494 0.5796 0.6100 0.6407 0.6716
0.7028 0.7343 0.7661 0.7982 0.8305
0.8631 0.8963 0.9300 0.9643 1.0000
Hrad:
0.0226 0.0464 0.0764 0.1046 0.1312

0.1565 0.1848 0.2121 0.2385 0.2642
0.2908 0.3166 0.3419 0.3667 0.3910
0.4149 0.4391 0.4633 0.4872 0.5107
0.5337 0.5551 0.5763 0.5973 0.6182
0.6388 0.6593 0.6797 0.6999 0.7152
0.7153 0.7171 0.6493 0.6203 0.6303
0.6586 0.6866 0.7142 0.7415 0.7684
0.7951 0.8214 0.8475 0.8733 0.8988
0.9202 0.9382 0.9562 0.9741 1.0000
Width:
0.1155 0.1757 0.1978 0.2178 0.2379
0.2577 0.2704 0.2831 0.2959 0.3086
0.3193 0.3301 0.3408 0.3516 0.3623
0.3731 0.3831 0.3927 0.4023 0.4118
0.4216 0.4325 0.4434 0.4543 0.4652
0.4761 0.4870 0.4980 0.5089 0.5235
0.5510 0.5785 0.6765 0.7520 0.7837
0.7908 0.7980 0.8051 0.8124 0.8196
0.8268 0.8341 0.8413 0.8485 0.8557
0.8671 0.8817 0.8963 0.9109 1.0000

Transect Transect26
Area:
0.0004 0.0016 0.0036 0.0065 0.0098
0.0136 0.0178 0.0225 0.0277 0.0336
0.0410 0.0529 0.0694 0.0907 0.1122
0.1339 0.1559 0.1779 0.2002 0.2227
0.2454 0.2683 0.2913 0.3146 0.3380
0.3616 0.3855 0.4096 0.4339 0.4584
0.4832 0.5082 0.5335 0.5590 0.5847
0.6106 0.6368 0.6632 0.6899 0.7167
0.7439 0.7712 0.7988 0.8266 0.8547
0.8831 0.9119 0.9409 0.9703 1.0000
Hrad:
0.0061 0.0122 0.0182 0.0250 0.0331
0.0407 0.0479 0.0548 0.0594 0.0644
0.0681 0.0721 0.0699 0.0891 0.1142
0.1409 0.1685 0.1965 0.2248 0.2532
0.2815 0.3098 0.3379 0.3659 0.3938
0.4214 0.4484 0.4753 0.5018 0.5282
0.5543 0.5802 0.6059 0.6313 0.6565
0.6815 0.7062 0.7307 0.7550 0.7791
0.8029 0.8265 0.8499 0.8725 0.8944
0.9160 0.9373 0.9584 0.9793 1.0000
Width:
0.0271 0.0542 0.0813 0.1050 0.1196
0.1343 0.1490 0.1638 0.1863 0.2088
0.3328 0.4529 0.6905 0.7182 0.7243
0.7307 0.7371 0.7435 0.7500 0.7564
0.7628 0.7693 0.7757 0.7821 0.7886
0.7953 0.8031 0.8109 0.8187 0.8265
0.8343 0.8421 0.8499 0.8577 0.8655
0.8733 0.8810 0.8888 0.8965 0.9043
0.9121 0.9198 0.9276 0.9368 0.9474
0.9579 0.9684 0.9789 0.9895 1.0000

Transect Transect3

Area:

0.0009	0.0036	0.0080	0.0143	0.0220
0.0304	0.0395	0.0491	0.0595	0.0704
0.0821	0.0944	0.1074	0.1210	0.1353
0.1503	0.1658	0.1817	0.1981	0.2151
0.2325	0.2504	0.2688	0.2876	0.3070
0.3269	0.3473	0.3684	0.3900	0.4123
0.4351	0.4586	0.4826	0.5073	0.5325
0.5583	0.5846	0.6115	0.6389	0.6669
0.6954	0.7245	0.7541	0.7846	0.8166
0.8499	0.8846	0.9210	0.9590	1.0000

Hrad:

0.0273	0.0545	0.0818	0.1091	0.1456
0.1832	0.2179	0.2505	0.2806	0.3095
0.3375	0.3645	0.3910	0.4168	0.4422
0.4696	0.4982	0.5260	0.5533	0.5800
0.6062	0.6320	0.6574	0.6824	0.7071
0.7302	0.7514	0.7725	0.7935	0.8146
0.8356	0.8566	0.8776	0.8987	0.9212
0.9435	0.9657	0.9878	1.0098	1.0317
1.0536	1.0754	1.0967	1.0963	1.0979
1.1010	1.1026	1.1013	1.1021	1.0000

Width:

0.0388	0.0776	0.1164	0.1552	0.1764
0.1900	0.2036	0.2173	0.2318	0.2463
0.2607	0.2752	0.2897	0.3042	0.3187
0.3310	0.3416	0.3523	0.3629	0.3735
0.3842	0.3948	0.4054	0.4161	0.4267
0.4383	0.4514	0.4645	0.4777	0.4908
0.5039	0.5170	0.5302	0.5431	0.5550
0.5669	0.5788	0.5907	0.6026	0.6144
0.6263	0.6382	0.6504	0.6802	0.7101
0.7399	0.7725	0.8095	0.8465	1.0000

Transect Transect4

Area:

0.0022	0.0080	0.0161	0.0269	0.0399
0.0536	0.0676	0.0820	0.0968	0.1120
0.1275	0.1435	0.1599	0.1766	0.1936
0.2109	0.2285	0.2463	0.2645	0.2829
0.3016	0.3206	0.3398	0.3594	0.3792
0.3994	0.4198	0.4406	0.4617	0.4832
0.5050	0.5270	0.5495	0.5722	0.5953
0.6187	0.6426	0.6669	0.6916	0.7168
0.7425	0.7686	0.7951	0.8222	0.8498
0.8780	0.9068	0.9361	0.9663	1.0000

Hrad:

0.0170	0.0389	0.0631	0.0917	0.1303
0.1751	0.2184	0.2594	0.2982	0.3349
0.3696	0.4026	0.4339	0.4653	0.4959
0.5253	0.5537	0.5811	0.6076	0.6332
0.6582	0.6824	0.7059	0.7289	0.7514
0.7723	0.7927	0.8126	0.8322	0.8515
0.8704	0.8890	0.9073	0.9254	0.9432
0.9583	0.9723	0.9862	1.0000	1.0138
1.0275	1.0411	1.0539	1.0640	1.0743
1.0847	1.0952	1.1058	1.0788	1.0000

Width:

0.1226	0.1924	0.2633	0.3390	0.3738
0.3846	0.3955	0.4064	0.4173	0.4282
0.4391	0.4500	0.4609	0.4696	0.4775
0.4853	0.4932	0.5011	0.5090	0.5168
0.5247	0.5326	0.5404	0.5483	0.5562
0.5652	0.5742	0.5833	0.5924	0.6014
0.6105	0.6195	0.6286	0.6376	0.6467
0.6581	0.6705	0.6830	0.6954	0.7078
0.7202	0.7326	0.7459	0.7616	0.7774
0.7931	0.8089	0.8246	0.8776	1.0000

Transect Transect5
Area:

0.0006	0.0024	0.0054	0.0093	0.0142
0.0200	0.0267	0.0346	0.0434	0.0533
0.0644	0.0768	0.0922	0.1102	0.1302
0.1521	0.1744	0.1967	0.2192	0.2419
0.2647	0.2876	0.3107	0.3340	0.3574
0.3810	0.4047	0.4286	0.4526	0.4768
0.5012	0.5257	0.5503	0.5752	0.6002
0.6253	0.6506	0.6761	0.7017	0.7274
0.7534	0.7795	0.8057	0.8321	0.8587
0.8854	0.9123	0.9394	0.9685	1.0000

Hrad:

0.0084	0.0168	0.0260	0.0356	0.0448
0.0537	0.0615	0.0695	0.0777	0.0852
0.0927	0.1029	0.1157	0.1309	0.1474
0.1690	0.1951	0.2226	0.2510	0.2799
0.3089	0.3377	0.3664	0.3949	0.4231
0.4509	0.4785	0.5056	0.5324	0.5588
0.5848	0.6104	0.6356	0.6605	0.6849
0.7089	0.7326	0.7558	0.7787	0.8013
0.8235	0.8453	0.8668	0.8880	0.9088
0.9294	0.9496	0.9695	0.9863	1.0000

Width:

0.0373	0.0745	0.1080	0.1364	0.1649
0.1933	0.2259	0.2584	0.2899	0.3249
0.3606	0.4256	0.5274	0.5858	0.6563
0.6865	0.6908	0.6951	0.6994	0.7037
0.7080	0.7129	0.7177	0.7226	0.7275
0.7324	0.7372	0.7421	0.7470	0.7518
0.7567	0.7616	0.7665	0.7713	0.7762
0.7811	0.7860	0.7909	0.7958	0.8008
0.8057	0.8106	0.8155	0.8204	0.8253
0.8303	0.8352	0.8401	0.9518	1.0000

Transect Transect6
Area:

0.0008	0.0031	0.0070	0.0124	0.0186
0.0257	0.0334	0.0416	0.0504	0.0597
0.0696	0.0800	0.0910	0.1025	0.1145
0.1271	0.1401	0.1535	0.1675	0.1822
0.1974	0.2132	0.2297	0.2467	0.2644
0.2829	0.3024	0.3228	0.3442	0.3665
0.3896	0.4134	0.4381	0.4636	0.4901
0.5183	0.5481	0.5791	0.6114	0.6449

0.6789 0.7132 0.7477 0.7825 0.8176
0.8529 0.8885 0.9243 0.9612 1.0000
Hrad:
0.0182 0.0364 0.0546 0.0772 0.1010
0.1260 0.1521 0.1771 0.2012 0.2246
0.2474 0.2696 0.2914 0.3128 0.3339
0.3574 0.3807 0.4017 0.4195 0.4373
0.4551 0.4729 0.4907 0.5084 0.5255
0.5335 0.5424 0.5522 0.5630 0.5785
0.5941 0.6099 0.6258 0.6419 0.6419
0.6447 0.6550 0.6693 0.6834 0.7014
0.7339 0.7659 0.7974 0.8284 0.8591
0.8893 0.9191 0.9483 0.9753 1.0000
Width:
0.0364 0.0729 0.1093 0.1360 0.1565
0.1729 0.1857 0.1985 0.2113 0.2241
0.2369 0.2498 0.2626 0.2754 0.2882
0.2984 0.3085 0.3201 0.3344 0.3486
0.3628 0.3770 0.3913 0.4055 0.4204
0.4431 0.4659 0.4887 0.5112 0.5297
0.5482 0.5668 0.5853 0.6038 0.6388
0.6780 0.7109 0.7394 0.7679 0.7917
0.7977 0.8037 0.8097 0.8157 0.8217
0.8277 0.8337 0.8449 0.8799 1.0000

Transect Transect7
Area:
0.0012 0.0047 0.0094 0.0147 0.0207
0.0273 0.0346 0.0426 0.0520 0.0626
0.0751 0.0897 0.1065 0.1241 0.1420
0.1601 0.1785 0.1971 0.2159 0.2350
0.2543 0.2738 0.2936 0.3135 0.3337
0.3542 0.3748 0.3957 0.4168 0.4382
0.4598 0.4816 0.5038 0.5264 0.5495
0.5730 0.5971 0.6215 0.6464 0.6718
0.6982 0.7258 0.7547 0.7847 0.8160
0.8485 0.8843 0.9218 0.9604 1.0000
Hrad:
0.0241 0.0507 0.0891 0.1241 0.1567
0.1876 0.2172 0.2439 0.2658 0.2840
0.2776 0.2770 0.2874 0.3188 0.3504
0.3819 0.4140 0.4459 0.4777 0.5092
0.5406 0.5717 0.6026 0.6334 0.6639
0.6942 0.7244 0.7543 0.7841 0.8137
0.8432 0.8710 0.8910 0.9112 0.9316
0.9521 0.9728 0.9936 1.0146 1.0307
1.0201 1.0130 1.0098 1.0113 1.0146
0.9995 0.9507 0.9667 0.9831 1.0000
Width:
0.0583 0.1101 0.1257 0.1413 0.1568
0.1724 0.1880 0.2174 0.2493 0.2815
0.3373 0.3930 0.4358 0.4423 0.4487
0.4551 0.4608 0.4665 0.4722 0.4779
0.4836 0.4893 0.4950 0.5007 0.5064
0.5121 0.5178 0.5236 0.5293 0.5350
0.5407 0.5473 0.5586 0.5700 0.5813
0.5927 0.6040 0.6153 0.6267 0.6410

0.6726 0.7043 0.7352 0.7643 0.7934
0.8389 0.9219 0.9479 0.9740 1.0000

Transect Transect8
Area:
0.0004 0.0018 0.0040 0.0071 0.0113
0.0173 0.0259 0.0384 0.0516 0.0652
0.0792 0.0935 0.1082 0.1232 0.1386
0.1543 0.1704 0.1869 0.2037 0.2208
0.2382 0.2559 0.2739 0.2921 0.3106
0.3294 0.3485 0.3678 0.3874 0.4073
0.4275 0.4479 0.4691 0.4912 0.5140
0.5378 0.5626 0.5884 0.6154 0.6433
0.6720 0.7017 0.7323 0.7644 0.7983
0.8354 0.8742 0.9146 0.9565 1.0000
Hrad:
0.0259 0.0518 0.0777 0.1036 0.1273
0.1409 0.1246 0.1385 0.1727 0.2067
0.2403 0.2735 0.3062 0.3386 0.3706
0.4022 0.4335 0.4645 0.4952 0.5275
0.5601 0.5923 0.6242 0.6559 0.6873
0.7184 0.7494 0.7801 0.8106 0.8409
0.8711 0.8925 0.8991 0.9074 0.9172
0.9253 0.9293 0.9353 0.9441 0.9596
0.9758 0.9926 1.0018 0.9955 0.9750
0.9524 0.9647 0.9777 0.9883 1.0000
Width:
0.0201 0.0401 0.0602 0.0802 0.1130
0.1593 0.2428 0.2948 0.3028 0.3108
0.3188 0.3268 0.3348 0.3428 0.3508
0.3588 0.3668 0.3748 0.3828 0.3894
0.3956 0.4018 0.4080 0.4142 0.4204
0.4266 0.4327 0.4389 0.4451 0.4513
0.4575 0.4682 0.4873 0.5064 0.5255
0.5463 0.5707 0.5952 0.6188 0.6387
0.6587 0.6786 0.7044 0.7435 0.7973
0.8597 0.8927 0.9261 0.9630 1.0000

Transect Transect9
Area:
0.0006 0.0023 0.0052 0.0093 0.0150
0.0225 0.0358 0.0509 0.0662 0.0817
0.0974 0.1134 0.1296 0.1460 0.1626
0.1794 0.1965 0.2138 0.2312 0.2489
0.2668 0.2849 0.3032 0.3218 0.3405
0.3595 0.3789 0.3990 0.4196 0.4408
0.4625 0.4848 0.5076 0.5309 0.5547
0.5791 0.6040 0.6295 0.6556 0.6824
0.7098 0.7380 0.7671 0.7972 0.8283
0.8605 0.8937 0.9281 0.9635 1.0000
Hrad:
0.0116 0.0233 0.0349 0.0443 0.0544
0.0602 0.0560 0.0783 0.1003 0.1219
0.1433 0.1643 0.1850 0.2054 0.2256
0.2456 0.2654 0.2849 0.3043 0.3234
0.3422 0.3609 0.3794 0.3977 0.4159
0.4351 0.4575 0.4795 0.5012 0.5230

```
            0.5449     0.5670     0.5894     0.6122     0.6351
            0.6584     0.6821     0.7062     0.7299     0.7540
            0.7786     0.8023     0.8259     0.8498     0.8731
            0.8971     0.9219     0.9473     0.9733     1.0000
Width:
            0.0312     0.0623     0.0935     0.1328     0.1741
            0.2350     0.4043     0.4103     0.4162     0.4222
            0.4281     0.4340     0.4400     0.4459     0.4519
            0.4576     0.4633     0.4691     0.4748     0.4805
            0.4862     0.4919     0.4976     0.5034     0.5091
            0.5173     0.5332     0.5490     0.5649     0.5800
            0.5940     0.6080     0.6220     0.6361     0.6510
            0.6659     0.6808     0.6957     0.7141     0.7325
            0.7509     0.7738     0.7988     0.8249     0.8546
            0.8841     0.9131     0.9420     0.9710     1.0000


**********************************************************
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 ........ NO
  Water Quality .......... NO
Infiltration Method ...... HORTON
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 11/04/2021 00:00:00
Ending Date .............. 11/04/2021 06:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:05:00
Dry Time Step ............ 00:05:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 4
Head Tolerance ........... 0.001524 m


**************************        Volume         Depth
Runoff Quantity Continuity     hectare-m            mm
**************************     ---------       -------
Total Precipitation ......         0.503        32.838
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         0.309        20.141
```

Surface Runoff	0.175	11.441
Final Storage	0.021	1.342
Continuity Error (%)	-0.265	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.175	1.753
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.139	1.386
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	0.040	0.395
Continuity Error (%)	-1.600	

Highest Continuity Errors

Node J11 (100.00%)
Node J39 (100.00%)
Node J40 (100.00%)
Node J46 (100.00%)
Node J52 (100.00%)

Time-Step Critical Elements

Link C4 (14.80%)
Link C35 (8.88%)

Highest Flow Instability Indexes

Link C16_1 (11)
Link C4 (6)
Link C35 (6)
Link C2_1 (3)
Link C29 (2)

Routing Time Step Summary

Minimum Time Step	:	0.33 sec
Average Time Step	:	4.70 sec
Maximum Time Step	:	5.00 sec
Percent in Steady State	:	-0.00
Average Iterations per Step	:	2.07

```
  Percent Not Converging      :     0.00
  Time Step Frequencies       :
      5.000 -  3.155 sec      :    91.88 %
      3.155 -  1.991 sec      :     8.12 %
      1.991 -  1.256 sec      :     0.00 %
      1.256 -  0.792 sec      :     0.00 %
      0.792 -  0.500 sec      :     0.00 %


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

  ----------------------------------------------------------------------------------------
-----------------------------------------------
                             Total      Total      Total      Total     Imperv
Perv      Total       Total     Peak  Runoff
                          Precip      Runon       Evap      Infil     Runoff
Runoff     Runoff      Runoff   Runoff   Coeff
  Subcatchment                 mm         mm         mm         mm         mm
mm         mm    10^6 ltr      CMS
  ----------------------------------------------------------------------------------------
-----------------------------------------------
  EXT12                       32.84       0.00       0.00      29.42       2.20
0.00       2.20        0.01     0.01   0.067
  EXT13                       32.84       0.00       0.00      29.42       2.20
0.00       2.20        0.01     0.01   0.067
  EXT14                       32.84       0.00       0.00      29.42       2.20
0.00       2.20        0.01     0.01   0.067
  EXT15                       32.84       0.00       0.00      29.42       2.20
0.00       2.20        0.09     0.09   0.067
  EXT7                        32.84       0.00       0.00      29.42       2.20
0.00       2.20        0.00     0.00   0.067
  EXT8                        32.84       0.00       0.00      29.42       2.20
0.00       2.20        0.01     0.01   0.067
  EXT9                        32.84       0.00       0.00      29.42       2.20
0.00       2.20        0.01     0.01   0.067
  S1                          32.84       0.00       0.00       3.80      27.86
0.00      27.86        0.02     0.02   0.848
  S10                         32.84       0.00       0.00       8.54      23.00
0.00      23.00        0.01     0.01   0.701
  S11                         32.84       0.00       0.00      10.44      21.13
0.00      21.13        0.01     0.01   0.644
  S12                         32.84       0.00       0.00      13.29      18.22
0.00      18.22        0.00     0.00   0.555
  S13                         32.84       0.00       0.00      21.51      10.05
0.00      10.05        0.00     0.00   0.306
  S14                         32.84       0.00       0.00      21.51      10.05
0.00      10.05        0.00     0.00   0.306
  S15                         32.84       0.00       0.00      19.93      11.62
0.00      11.62        0.00     0.00   0.354
  S16                         32.84       0.00       0.00      20.24      11.31
0.00      11.31        0.00     0.00   0.344
  S17                         32.84       0.00       0.00      18.03      13.51
0.00      13.51        0.01     0.01   0.411
  S18                         32.84       0.00       0.00      15.50      16.02
0.00      16.02        0.01     0.01   0.488
  S19                         32.84       0.00       0.00      13.92      17.59
0.00      17.59        0.00     0.00   0.536
```

S2			32.84	0.00	0.00	9.49	22.02	
0.00	22.02	0.01	0.01	0.670				
S20			32.84	0.00	0.00	11.07	20.45	
0.00	20.45	0.01	0.01	0.623				
S21			32.84	0.00	0.00	12.34	19.17	
0.00	19.17	0.01	0.01	0.584				
S22			32.84	0.00	0.00	12.02	19.50	
0.00	19.50	0.01	0.01	0.594				
S23			32.84	0.00	0.00	20.56	10.99	
0.00	10.99	0.00	0.00	0.335				
S24			32.84	0.00	0.00	20.56	10.99	
0.00	10.99	0.00	0.00	0.335				
S25			32.84	0.00	0.00	16.13	15.44	
0.00	15.44	0.02	0.02	0.470				
S26			32.84	0.00	0.00	12.97	18.61	
0.00	18.61	0.03	0.03	0.567				
S27			32.84	0.00	0.00	0.63	30.88	
0.00	30.88	0.05	0.04	0.940				
S28			32.84	0.00	0.00	2.53	28.97	
0.00	28.97	0.04	0.04	0.882				
S29			32.84	0.00	0.00	0.00	31.45	
0.00	31.45	0.00	0.00	0.958				
S3			32.84	0.00	0.00	9.17	22.32	
0.00	22.32	0.00	0.00	0.680				
S30			32.84	0.00	0.00	11.07	20.43	
0.00	20.43	0.01	0.01	0.622				
S31			32.84	0.00	0.00	15.18	16.37	
0.00	16.37	0.01	0.01	0.498				
S32			32.84	0.00	0.00	16.76	14.85	
0.00	14.85	0.02	0.02	0.452				
S33			32.84	0.00	0.00	14.23	17.39	
0.00	17.39	0.05	0.04	0.530				
S34			32.84	0.00	0.00	15.82	15.75	
0.00	15.75	0.03	0.02	0.480				
S35			32.84	0.00	0.00	8.54	23.00	
0.00	23.00	0.02	0.01	0.700				
S36			32.84	0.00	0.00	14.55	17.05	
0.00	17.05	0.02	0.02	0.519				
S37			32.84	0.00	0.00	3.48	28.09	
0.00	28.09	0.02	0.01	0.855				
S38			32.84	0.00	0.00	27.20	4.40	
0.00	4.40	0.01	0.01	0.134				
S39			32.84	0.00	0.00	3.16	28.30	
0.00	28.30	0.02	0.01	0.862				
S4			32.84	0.00	0.00	12.02	19.54	
0.00	19.54	0.02	0.02	0.595				
S40			32.84	0.00	0.00	0.00	31.56	
0.00	31.56	0.01	0.01	0.961				
S41			32.84	0.00	0.00	6.33	25.18	
0.00	25.18	0.01	0.01	0.767				
S42			32.84	0.00	0.00	18.98	12.59	
0.00	12.59	0.01	0.01	0.383				
S43			32.84	0.00	0.00	12.97	18.58	
0.00	18.58	1.08	0.63	0.566				
S5			32.84	0.00	0.00	13.92	17.63	
0.00	17.63	0.01	0.01	0.537				
S6			32.84	0.00	0.00	20.88	10.69	
0.00	10.69	0.01	0.01	0.326				
S7			32.84	0.00	0.00	24.36	7.23	
0.00	7.23	0.00	0.00	0.220				

```
  S8                       32.84       0.00       0.00      24.99       6.60
0.00       6.60       0.00     0.00    0.201
  S9                       32.84       0.00       0.00      24.99       6.60
0.00       6.60       0.00     0.00    0.201
```

****
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
DITCH_INLET	JUNCTION	0.01	0.04	263.06	0 01:05	0.04
J1	JUNCTION	0.34	0.43	268.35	0 02:27	0.43
J10	JUNCTION	0.18	0.23	268.13	0 04:41	0.23
J11	JUNCTION	0.21	0.27	265.50	0 06:00	0.27
J12	JUNCTION	0.36	0.45	264.15	0 03:11	0.45
J13	JUNCTION	0.40	0.58	263.16	0 01:07	0.58
J14	JUNCTION	0.01	0.05	262.65	0 01:05	0.05
J15	JUNCTION	0.01	0.09	256.01	0 01:10	0.08
J16	JUNCTION	0.31	0.49	256.41	0 01:10	0.49
J17	JUNCTION	0.00	0.02	262.62	0 01:05	0.02
J18	JUNCTION	0.01	0.09	258.10	0 01:07	0.09
J19	JUNCTION	0.32	0.49	258.56	0 01:07	0.49
J2	JUNCTION	0.12	0.20	268.09	0 06:00	0.20
J20	JUNCTION	0.02	0.09	252.12	0 01:20	0.09
J21	JUNCTION	0.00	0.01	259.32	0 01:05	0.01
J22	JUNCTION	0.05	0.16	258.57	0 01:04	0.16
J23	JUNCTION	0.00	0.02	257.41	0 01:05	0.02
J24	JUNCTION	0.09	0.12	256.66	0 02:02	0.12
J25	JUNCTION	0.01	0.01	256.20	0 02:00	0.01
J26	JUNCTION	0.02	0.03	255.75	0 01:05	0.03
J27	JUNCTION	0.02	0.03	254.87	0 01:05	0.03
J28	JUNCTION	0.01	0.02	254.54	0 01:05	0.02
J29	JUNCTION	0.10	0.12	253.47	0 01:05	0.12
J3	JUNCTION	0.00	0.00	267.72	0 00:00	0.00
J30	JUNCTION	0.06	0.13	252.28	0 01:05	0.13
J32	JUNCTION	0.39	0.57	252.62	0 01:19	0.57
J33	JUNCTION	0.37	0.46	268.35	0 02:27	0.46
J34	JUNCTION	0.25	0.34	268.09	0 06:00	0.34
J35	JUNCTION	0.00	0.00	267.25	0 00:00	0.00
J36	JUNCTION	0.31	0.48	253.70	0 01:16	0.48
J37	JUNCTION	0.07	0.25	250.97	0 01:23	0.25
J38	JUNCTION	0.02	0.10	250.65	0 01:23	0.10
J39	JUNCTION	0.24	0.31	267.54	0 06:00	0.31
J4	JUNCTION	0.24	0.30	267.54	0 06:00	0.30
J40	JUNCTION	0.22	0.28	266.51	0 06:00	0.28
J41	JUNCTION	0.06	0.08	268.13	0 04:31	0.08
J42	JUNCTION	0.01	0.06	267.96	0 01:05	0.06
J43	JUNCTION	0.00	0.01	267.78	0 01:07	0.01
J44	JUNCTION	0.00	0.03	265.26	0 01:05	0.03
J45	JUNCTION	0.00	0.00	263.70	0 03:15	0.00
J46	JUNCTION	0.10	0.12	265.42	0 05:59	0.12
J47	JUNCTION	0.01	0.07	262.65	0 01:07	0.07

J48	JUNCTION	0.02	0.17	262.57	0	01:08	0.17
J49	JUNCTION	0.01	0.09	262.29	0	01:09	0.09
J5	JUNCTION	0.00	0.02	267.25	0	01:05	0.02
J50	JUNCTION	0.04	0.19	262.19	0	01:11	0.19
J51	JUNCTION	0.02	0.09	260.49	0	01:06	0.09
J52	JUNCTION	0.09	0.12	264.24	0	06:00	0.12
J53	JUNCTION	0.00	0.00	263.05	0	00:00	0.00
J54	JUNCTION	0.16	0.21	258.65	0	06:00	0.21
J55	JUNCTION	0.39	0.49	257.05	0	01:10	0.49
J56	JUNCTION	0.36	0.46	256.66	0	02:00	0.46
J57	JUNCTION	0.23	0.41	256.15	0	06:00	0.41
J58	JUNCTION	0.36	0.45	255.32	0	02:44	0.45
J59	JUNCTION	0.17	0.23	254.75	0	06:00	0.23
J6	JUNCTION	0.04	0.05	266.24	0	01:05	0.05
J60	JUNCTION	0.25	0.32	253.77	0	05:59	0.32
J61	JUNCTION	0.32	0.40	252.60	0	06:00	0.40
J62	JUNCTION	0.10	0.48	257.62	0	01:07	0.48
J63	JUNCTION	0.13	1.45	261.45	0	01:07	1.45
J7	JUNCTION	0.06	0.08	265.31	0	01:05	0.08
J8	JUNCTION	0.00	0.00	264.01	0	00:00	0.00
J9	JUNCTION	0.02	0.09	253.31	0	01:16	0.09
J31	OUTFALL	0.01	0.04	251.57	0	01:05	0.04
OF1	OUTFALL	0.09	0.48	257.21	0	01:07	0.48
OF2	OUTFALL	0.02	0.10	250.60	0	01:23	0.10

****
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 Volume 10^6 ltr	Flow Balance Error Percent
DITCH_INLET	JUNCTION	0.013	0.013	0	01:05	0.0137	0.0137	-0.014
J1	JUNCTION	0.015	0.015	0	01:05	0.0174	0.0174	134.230
J10	JUNCTION	0.000	0.011	0	01:06	0	0.0108	1102.262
J11	JUNCTION	0.023	0.027	0	01:05	0.0245	0.0311	31121.090 ltr
J12	JUNCTION	0.000	0.026	0	01:05	0	0.0285	5647.251
J13	JUNCTION	0.084	0.084	0	01:05	0.0883	0.0888	26.951
J14	JUNCTION	0.125	0.125	0	01:05	0.143	0.143	0.607
J15	JUNCTION	0.000	0.189	0	01:10	0	0.331	-0.519

J16	JUNCTION	0.028	0.210	0	01:07	0.0294	0.361	8.943
J17	JUNCTION	0.035	0.035	0	01:05	0.0431	0.0431	-0.212
J18	JUNCTION	0.000	0.191	0	01:07	0	0.33	-0.252
J19	JUNCTION	0.000	0.208	0	01:06	0	0.363	9.874
J2	JUNCTION	0.003	0.003	0	01:05	0.00344	0.00599	55.872
J20	JUNCTION	0.000	0.149	0	01:19	0	0.276	-0.172
J21	JUNCTION	0.004	0.004	0	01:05	0.00463	0.00463	-0.262
J22	JUNCTION	0.020	0.020	0	01:05	0.0206	0.0206	0.191
J23	JUNCTION	0.003	0.025	0	01:04	0.00337	0.0239	-0.270
J24	JUNCTION	0.003	0.013	0	01:10	0.00311	0.0172	12.158
J25	JUNCTION	0.000	0.001	0	02:00	0	0.00463	0.022
J26	JUNCTION	0.010	0.010	0	01:05	0.0104	0.0104	-0.094
J27	JUNCTION	0.005	0.005	0	01:05	0.00555	0.00613	0.013
J28	JUNCTION	0.006	0.006	0	01:05	0.00596	0.00596	-0.106
J29	JUNCTION	0.020	0.020	0	01:05	0.0214	0.0214	-0.121
J3	JUNCTION	0.000	0.000	0	00:00	0	0	0.000 ltr
J30	JUNCTION	0.009	0.009	0	01:05	0.00954	0.00954	0.589
J32	JUNCTION	0.007	0.171	0	01:16	0.00785	0.312	13.241
J33	JUNCTION	0.006	0.011	0	01:05	0.00581	0.0132	418.046
J34	JUNCTION	0.000	0.003	0	01:05	0	0.00385	3843.973 ltr
J35	JUNCTION	0.000	0.000	0	00:00	0	0	0.000 ltr
J36	JUNCTION	0.000	0.188	0	01:10	0	0.333	12.857
J37	JUNCTION	0.000	0.148	0	01:20	0	0.276	0.503
J38	JUNCTION	0.000	0.129	0	01:23	0	0.275	-0.029
J39	JUNCTION	0.000	0.008	0	01:05	0	0.00826	8262.860 ltr
J4	JUNCTION	0.015	0.015	0	01:05	0.0161	0.0161	94.615
J40	JUNCTION	0.000	0.015	0	01:05	0	0.0164	16443.709 ltr
J41	JUNCTION	0.013	0.013	0	01:05	0.0132	0.0141	30.031
J42	JUNCTION	0.003	0.003	0	01:05	0.0034	0.0034	0.007
J43	JUNCTION	0.003	0.006	0	01:05	0.00315	0.00655	-1.496

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  J44                  JUNCTION     0.027    0.027     0  01:05      0.0283
0.0283      -0.674
  J45                  JUNCTION     0.000    0.000     0  03:11           0
0.000496       1.063
  J46                  JUNCTION     0.000    0.003     0  01:05           0
0.00386    3855.058 ltr
  J47                  JUNCTION     0.000    0.066     0  01:07           0
0.0699      -0.073
  J48                  JUNCTION     0.004    0.069     0  01:07     0.00437
0.0744       0.116
  J49                  JUNCTION     0.018    0.076     0  01:08      0.0192
0.0935      -0.189
  J5                   JUNCTION     0.016    0.016     0  01:05      0.0163
0.0163      -0.636
  J50                  JUNCTION     0.000    0.097     0  01:09           0
0.137       0.570
  J51                  JUNCTION     0.074    0.216     0  01:05      0.0841
0.362      -0.299
  J52                  JUNCTION     0.000    0.003     0  01:05           0
0.00307    3069.819 ltr
  J53                  JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  J54                  JUNCTION     0.000    0.004     0  01:05           0
0.00464    4639.365 ltr
  J55                  JUNCTION     0.000    0.023     0  01:05           0
0.024      72.517
  J56                  JUNCTION     0.000    0.013     0  01:10           0
0.0153     220.498
  J57                  JUNCTION     0.000    0.001     0  02:00           0
0.00463    4626.768 ltr
  J58                  JUNCTION     0.000    0.010     0  01:05           0
0.0104    1681.986
  J59                  JUNCTION     0.000    0.005     0  01:05           0
0.00613    6130.282 ltr
  J6                   JUNCTION     0.004    0.004     0  01:05     0.00389
0.00389       0.814
  J60                  JUNCTION     0.000    0.006     0  01:05           0
0.00596    5963.608 ltr
  J61                  JUNCTION     0.000    0.020     0  01:05           0
0.0214   21446.057 ltr
  J62                  JUNCTION     0.011    0.610     0  01:07      0.0115
1.1       0.029
  J63                  JUNCTION     0.629    0.629     0  01:05        1.08
1.08       0.047
  J7                   JUNCTION     0.003    0.003     0  01:05     0.00314
0.00314       2.253
  J8                   JUNCTION     0.000    0.000     0  00:00           0
0       0.000 ltr
  J9                   JUNCTION     0.008    0.170     0  01:16     0.00868
0.304      -0.354
  J31                  OUTFALL      0.000    0.009     0  01:05           0
0.00949       0.000
  OF1                  OUTFALL      0.000    0.611     0  01:07           0
1.1       0.000
  OF2                  OUTFALL      0.000    0.129     0  01:23           0
0.275       0.000


  **********************
  Node Surcharge Summary
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No nodes were surcharged.

****
Node Flooding Summary
****

No nodes were flooded.

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J31	49.83	0.001	0.009	0.009
OF1	98.96	0.057	0.611	1.101
OF2	79.70	0.021	0.129	0.275
System	76.16	0.079	0.618	1.386

****
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
C1	CONDUIT	0.013	0 01:05	1.28	0.01	0.06
C1_1	CONDUIT	0.005	0 01:05	0.01	0.00	0.59
C10	CONDUIT	0.000	0 03:15	0.00	0.00	0.39
C11_1	CONDUIT	0.124	0 01:05	2.11	0.00	0.07
C12	CONDUIT	0.034	0 01:05	0.30	0.00	0.14
C13_1	CONDUIT	0.004	0 01:05	0.05	0.00	0.14
C14	CONDUIT	0.021	0 01:04	1.34	0.03	0.16
C15_1	CONDUIT	0.023	0 01:05	0.05	0.00	0.34
C16_1	CONDUIT	0.013	0 01:10	0.08	0.00	0.37
C17_1	CONDUIT	0.001	0 02:00	0.08	0.00	0.27
C18_1	CONDUIT	0.010	0 01:05	0.04	0.00	0.30
C19_1	CONDUIT	0.005	0 01:05	0.06	0.00	0.15
C2	CONDUIT	0.611	0 01:07	2.05	0.74	0.64
C2_1	CONDUIT	0.003	0 01:05	0.02	0.00	0.36
C20_1	CONDUIT	0.006	0 01:05	0.04	0.00	0.21
C21_1	CONDUIT	0.020	0 01:05	0.10	0.00	0.27
C28	CONDUIT	0.009	0 01:05	0.70	0.01	0.09
C29	CONDUIT	0.011	0 01:06	0.09	0.00	0.21
C3	CONDUIT	0.591	0 01:07	2.76	1.74	0.97
C3_1	CONDUIT	0.000	0 00:00	0.00	0.00	0.00

C30	CONDUIT	0.066	0	01:07	0.29	0.01	0.16
C31	CONDUIT	0.065	0	01:08	0.65	0.02	0.17
C34_2	CONDUIT	0.148	0	01:20	0.74	0.02	0.22
C34_3	CONDUIT	0.170	0	01:16	0.31	0.02	0.44
C35	CONDUIT	0.129	0	01:23	1.71	0.12	0.26
C4	CONDUIT	0.129	0	01:23	0.54	0.02	0.14
C4_1	CONDUIT	0.008	0	01:05	0.03	0.00	0.40
C40	CONDUIT	0.003	0	01:05	0.59	0.01	0.08
C41	CONDUIT	0.005	0	01:07	0.04	0.00	0.18
C42	CONDUIT	0.026	0	01:05	0.12	0.00	0.30
C43_2	CONDUIT	0.188	0	01:10	0.94	0.02	0.37
C43_3	CONDUIT	0.208	0	01:06	0.26	0.02	0.38
C43_5	CONDUIT	0.190	0	01:07	0.34	0.02	0.38
C48	CONDUIT	0.073	0	01:09	0.24	0.02	0.19
C49	CONDUIT	0.089	0	01:11	1.65	0.03	0.18
C5_1	CONDUIT	0.015	0	01:05	0.12	0.00	0.19
C6_1	CONDUIT	0.003	0	01:05	0.08	0.00	0.08
C7_1	CONDUIT	0.003	0	01:05	0.07	0.00	0.08
C8_1	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
W6	CONDUIT	0.000	0	00:00	0.00	0.00	0.00
C1_2	WEIR	0.001	0	02:27			0.02
C13_2	WEIR	0.000	0	00:00			0.00
C15_2	WEIR	0.011	0	01:10			0.14
C16_2	WEIR	0.001	0	02:00			0.03
C17_2	WEIR	0.000	0	00:00			0.00
C18_2	WEIR	0.000	0	02:44			0.01
C19_2	WEIR	0.000	0	00:00			0.00
C2_2	WEIR	0.000	0	00:00			0.00
C20_2	WEIR	0.000	0	00:00			0.00
C21_2	WEIR	0.000	0	00:00			0.00
C3_2	WEIR	0.000	0	00:00			0.00
C34_4	WEIR	0.149	0	01:19			0.39
C4_2	WEIR	0.000	0	00:00			0.00
C43_4	WEIR	0.189	0	01:10			0.35
C43_6	WEIR	0.191	0	01:07			0.35
C5_2	WEIR	0.000	0	00:00			0.00
C6_2	WEIR	0.000	0	00:00			0.00
C7_2	WEIR	0.000	0	00:00			0.00
C8_2	WEIR	0.000	0	00:00			0.00
W1	WEIR	0.168	0	01:16			0.32
W2	WEIR	0.000	0	00:00			0.00
W3	WEIR	0.000	0	00:00			0.00
W4	WEIR	0.000	0	03:11			0.01
W5	WEIR	0.066	0	01:07			0.44
W7	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
C1	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00 0.00
C1_1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.13 0.00
C10	1.00	0.00	0.53	0.00	0.47	0.00	0.00	0.00	0.50 0.00
C11_1	1.00	0.00	0.00	0.00	0.00	0.06	0.00	0.94	0.05 0.00
C12	1.00	0.00	0.00	0.00	0.95	0.05	0.00	0.00	0.94 0.00
C13_1	1.00	0.00	0.20	0.00	0.79	0.00	0.00	0.00	0.97 0.00
C14	1.00	0.01	0.02	0.00	0.31	0.67	0.00	0.00	0.00 0.97
C15_1	1.00	0.00	0.08	0.00	0.92	0.00	0.00	0.00	0.98 0.00
C16_1	1.00	0.07	0.00	0.00	0.93	0.00	0.00	0.00	0.13 0.00
C17_1	1.00	0.33	0.00	0.00	0.67	0.00	0.00	0.00	0.70 0.00
C18_1	1.00	0.03	0.10	0.00	0.87	0.00	0.00	0.00	0.97 0.00
C19_1	1.00	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.91 0.00
C2	1.00	0.00	0.00	0.00	0.08	0.91	0.00	0.00	0.22 0.00
C2_1	1.00	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.00 0.15
C20_1	1.00	0.02	0.23	0.00	0.75	0.00	0.00	0.00	0.98 0.00
C21_1	1.00	0.05	0.00	0.00	0.95	0.00	0.00	0.00	0.92 0.00
C28	1.00	0.05	0.00	0.00	0.54	0.40	0.00	0.00	0.00 0.94
C29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.11 0.00
C3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00 0.00
C3_1	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	0.16	0.00	0.83	0.00	0.00	0.00	0.82 0.00
C31	1.00	0.00	0.00	0.00	0.85	0.15	0.00	0.00	0.00 0.59
C34_2	1.00	0.20	0.00	0.00	0.80	0.00	0.00	0.00	0.78 0.00
C34_3	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.99 0.00
C35	1.00	0.20	0.00	0.00	0.04	0.76	0.00	0.00	0.00 0.79
C4	1.00	0.20	0.00	0.00	0.80	0.00	0.00	0.00	0.19 0.00
C4_1	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.00 0.00
C40	1.00	0.00	0.00	0.00	0.46	0.54	0.00	0.00	0.00 0.62

C41	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.99
0.00									
C42	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.95
0.00									
C43_2	1.00	0.17	0.00	0.00	0.82	0.00	0.00	0.00	0.81
0.00									
C43_3	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.95
0.00									
C43_5	1.00	0.00	0.16	0.00	0.84	0.00	0.00	0.00	0.83
0.00									
C48	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.92
0.00									
C49	1.00	0.00	0.02	0.00	0.17	0.81	0.00	0.00	0.00
0.98									
C5_1	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.93
0.00									
C6_1	1.00	0.08	0.15	0.00	0.76	0.00	0.00	0.00	0.88
0.00									
C7_1	1.00	0.11	0.23	0.00	0.66	0.00	0.00	0.00	0.87
0.00									
C8_1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
W6	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C3	0.01	0.22	0.01	0.26	0.01

Analysis begun on: Tue Apr 12 17:00:46 2022
Analysis ended on: Tue Apr 12 17:00:47 2022
Total elapsed time: 00:00:01