

**FUNCTIONAL SERVICING & STORMWATER  
MANAGEMENT REPORT**

**DUNDALK SOUTHEAST DEVELOPMENT  
FLATO GREENS INC.**

**TOWNSHIP OF SOUTHGATE**

**PREPARED BY:**

**C.F. CROZIER & ASSOCIATES INC.  
70 HURON STREET, SUITE 100  
COLLINGWOOD, ONTARIO  
L9Y 4L4**

**1<sup>st</sup> SUBMISSION: OCTOBER 2024**

**CFCA FILE NO. 1060-6489**

The material in this report reflects best judgment in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. C.F. Crozier & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.



**TABLE OF CONTENTS**

**1.0 INTRODUCTION.....1**

**2.0 DEVELOPMENT BACKGROUND .....1**

**3.0 PROPOSED DEVELOPMENT.....1**

**4.0 SITE DESCRIPTION .....1**

**5.0 ROAD STANDARD .....2**

**6.0 SANITARY SEWAGE SYSTEM.....2**

**6.1 Existing Sanitary Sewer Infrastructure .....2**

**6.2 Proposed Servicing Strategy .....3**

**7.0 POTABLE WATER SUPPLY.....4**

**7.1 Existing Potable Water Supply Infrastructure .....4**

**7.2 Proposed Servicing Strategy .....4**

**8.0 PROPOSED STORMWATER MANAGEMENT, SITE GRADING AND DRAINAGE.....5**

**8.1 Stormwater Management Criteria .....5**

**8.2 Site Grading Criteria.....6**

**8.3 Existing Drainage Conditions .....6**

**8.4 Proposed Drainage Conditions .....7**

        8.4.1 Quantity Control.....8

        8.4.2 Quality & Erosion Control.....10

**9.0 WATER BALANCE AND INFILTRATION .....11**

**10.0 EROSION AND SEDIMENT CONTROLS.....11**

**11.0 UTILITIES.....12**

**12.0 CONCLUSIONS & RECOMMENDATIONS.....12**

### **LIST OF APPENDICES**

Appendix A:	Sanitary Demand and WWTF Calculations
Appendix B:	Water Capacity and Demand Calculations
Appendix C:	Fire Flow Calculations
Appendix D:	Hydrologic Modelling Parameters
Appendix E:	Hydrologic Modelling Input & Output Files
Appendix F:	SWM Facility Design Calculations

### **LIST OF FIGURES**

Figure 1:	Site Location Plan
Figure 2:	Draft Plan
Figure 3:	Site Servicing Plan
Figure 4:	Site Grading Plan
Figure 5:	Pre-Development Catchment Plan
Figure 6:	Post Development Catchment Plan
Figure 7:	Stormwater Management Facilities Plans

## 1.0 INTRODUCTION

C.F. Crozier & Associates Inc. ("Crozier") has been retained by Flato Greens Inc. ("the Developer") to prepare a Functional Servicing and Stormwater Management Report in support of a Draft Plan of Subdivision Application for Dundalk Southeast Development ("Subject Development") located in the south end of the Community of Dundalk, Township of Southgate, County of Grey. The proposed development is herein referred to as the Subject Development. Please refer to **Figure 1** for the Site Location.

The Developer has assembled a multi-disciplinary consulting team to assist with the technical studies in support of this development. The consulting team includes:

- SLR Consulting Ltd. (SLR) (environmental and hydrogeological)
- Soil Engineers Ltd. (SEL) (geotechnical)
- MHBC (planning)
- CF Crozier & Associates Inc. (civil and transportation engineering)

This report should be read in conjunction with the studies, plans and reports prepared by other members of the development team.

This report has been prepared to provide information concerning the servicing (water, sewer, utilities, and roads) and stormwater management strategy for the development.

## 2.0 DEVELOPMENT BACKGROUND

The Subject Development lands are located in the southeast area of the Village Dundalk, totaling 60.4 ha which are owned by the Township and the Developer.

The Township of Southgate Official Plan – Schedule A Map 2 (2022), designate the land uses for the Subject Development as Arterial Commercial, Neighborhood Area, Industrial, and hazard lands. A MZO Application was approved on March 4, 2022, as part of Ontario Regulation 162/22 to rezone the Dundalk Southeast development and to bring it into the Township's Settlement Boundary.

The site lies within the regulatory boundary of the Grand River Conservation Authority (GRCA). It is acknowledged that the GRCA will be required to provide appropriate approvals and permits necessary for the development and will be circulated on all development submissions.

## 3.0 PROPOSED DEVELOPMENT

The Subject Development will consist of 188 single detached units, 154 townhouse units, 138 apartment units, and 3 future single detached units. The proposed development will also include 17.96 ha of Industrial zoned land along with 8.93 ha of commercial zoned land. There will also be a sanitary pumping station block, stormwater management pond blocks, park areas, landscape buffers, environmentally protected open space area, a collector road (extension of Eco Parkway) and a series of local residential rights-of-way. The Draft Plan prepared by MHBC Planning (October 9, 2024) has been included as **Figure 2**.

## 4.0 SITE DESCRIPTION

The Subject Lands consist primarily of active agricultural fields, a small forest located in the middle of the site as well as an environmental protection area along the southern border with a section stretching north in the center region of the site. The limits of the environmental protection lands

have been reviewed by SLR and GRCA and appropriate development setbacks have been applied to the Draft Plan. Refer to the Environmental Impact Study completed by SLR which has been provided under separate cover for more information. The property displays a drainage pattern comprised of rolling hills draining towards the central southern region of the site which has been identified as Blocks 225 within the Draft Plan.

This property is legally described as Part of Lots 238, 239, 240, Concession 1 Southwest Toronto and Sydenham Road Geographic Township of Proton, and Parts of Lot 238 and 239 Concession 2 Southwest Toronto and Sydenham Road Geographic Township of Proton, Township of Southgate, County of Grey.

## 5.0 ROAD STANDARD

The draft plan for the Subject Development proposes to extend the existing Eco Parkway at the west end of the property through to Highway 10 opposite Sideroad 240 at the east end of the property.

While detailed design has not yet been established for the internal roadways, the local roads will adhere to the standard urban cross section (Township of Southgate Std. R1. Internal intersections should be configured within the acceptable range of 70 degrees to 110 degrees. The vertical and horizontal alignment of the proposed roadways will be confirmed through detailed design.

Future analysis based on a detailed plan will review intersection spacing and sight distance requirements based on the MTO's Highway Corridor Management Manual and the Transportation Association of Canada's Geometric Design Guidelines for Canadian Roads. Per the MTO Highway Corridor Management Manual, for a 2B Arterial highway, new public roads should be at least 800 m from an existing signalized or unsignalized intersection, with 1600 m of spacing considered desirable.

A Traffic Impact Study has been prepared by our office under separate cover, which details transportation engineering considerations and mitigative measures related to the development. Roadway slopes will range between 0.5% and 8% in conformance with Township of Southgate Engineering Standards. Design criteria for the entrances will meet township guidelines as well as the applicable sections from the Ontario Building Code (i.e. fire routes). The internal roadways of the development will be assumed by the Township upon registration of the subdivision.

## 6.0 SANITARY SEWAGE SYSTEM

### 6.1 Existing Sanitary Sewer Infrastructure

The existing Dundalk Wastewater Treatment Facility (WWTF) is located on Eco Parkway at the south end of Dundalk. The plant treats sewage and discharges the treated effluent to the Foley Drain/Grand River. Per the Township of Southgate 2024 Reserve Capacity Calculations (Triton Engineering, 2024), the plant currently operates on average at 1,149 m<sup>3</sup>/day. The uncommitted reserve capacity for the sewage treatment facility is 464 new development ERU's (Equivalent Residential Units). The WWTF expansion project is currently in the detailed design stage and is expected to increase the sewage treatment capacity to 3,025 m<sup>3</sup>/day. The expectation is that this project will be tendered in 2024. (Triton Engineering, 2024). The increase in capacity would be able to bring more development online once the WWTF is expanded. Refer to **Appendix A** for relevant wastewater treatment facility reserve capacity calculations.

There is currently no existing sanitary infrastructure located at the limits of the Subject Development. The nearest sanitary infrastructure includes:

- 38 mm diameter forcemain along Eco Parkway which connects to a 250 mm diameter gravity sewer along Eco Parkway.
- 250 mm diameter gravity sewer along Eco Parkway.

## 6.2 Proposed Servicing Strategy

Sanitary servicing for the development will be provided via a network of gravity sewers that follow the alignment of the internal roadways and outlet to a proposed sanitary pumping station located centrally on the proposed Development Lands as noted as Block 218 on the Draft Plan. Sanitary sewers will be designed and constructed in accordance with the Township design standards, at a size and depth sufficient to service the entire site via gravity. The preliminary sanitary sewer layout and location of the sanitary pumping station block has been illustrated in the general site servicing plan included as **Figure 3**.

The proposed sanitary pumping station will collect the Subject Development wastewater flows and pump them via a forcemain to the existing gravity sanitary sewer along Eco Parkway. Design and details pertaining to the pumping station and forcemain system will be completed by the Township and the Township Engineering Consultants.

Preliminary sanitary flows for the site were estimated in conjunction with the proposed zoning, equivalent residential population calculations for the industrial, commercial, and residential zones for the Subject Development.

At this time, it is unknown what kind of types of industrial plants or facilities will be developed within the 17.96 ha of Industrial lands within the Subject Development. Industrial sanitary flow rates were calculated using an average industrial water demand that ranges from 35 m<sup>3</sup>/ha/day to 55 m<sup>3</sup>/ha/day as outlined in the Design Guidelines for Drinking Water Systems (MECP, 2008). An industrial water demand of 35 m<sup>3</sup>/ha/day was used for the calculations with an average peaking factor of 3.

Potential uses within the 8.93 ha of commercial lands within the Subject Development are also unknown at this time. Commercial sanitary flow rates were calculated using an average daily commercial design flow of 28 m<sup>3</sup>/ha/day as indicated in section 3.4.3 of the MOE Design Guidelines for Drinking-Water Systems 2008. Per Township of Southgate Standards, a peaking factor of 1.0 was applied to the average daily commercial flow.

For the residential portion of the Subject Development there are 188 single detached units, 154 townhouse units, 138 apartment units, and 3 future single detached units. Single detached and townhouse units account for one equivalent residential unit (ERU) each, however apartment units account for 0.7 ERUs. There is also an area of 22.66 ha to include for the inflow and infiltration calculations that includes the apartment block, single detached lots, townhouse lots, sanitary pumping station block, park, and all rights-of-way (ROW). Harmon peaking factor was applied to the average daily residential flow as per Township standards.

Applicable design criteria and sanitary design flows have been summarized in **Table 1** below.

**Table 1: Sanitary Design Flows**

Land Use	Average Daily Flow (L/s)	Peak Factor	Peak Flow (L/s)	Infiltration Allowance (L/s)	Total Sanitary Design Flow (L/s)
Industrial	7.28	3	24.53	2.69	24.53
Commercial	3.01	1	3.01	1.34	4.34
Residential	4.00	3.76	15.05	3.40	18.45

It is estimated that peak sanitary flow from the Subject Development is 47.32 L/s. Sanitary flow calculations have been provided in **Appendix A**.

## 7.0 POTABLE WATER SUPPLY

### 7.1 Existing Potable Water Supply Infrastructure

Potable water for the development will be supplied by the Township's municipal water distribution system.

Potable water for the Subject Development will be supplied by the Township's municipal water distribution system. The existing water treatment system in Dundalk includes three existing production wells, one on-grade reservoir and one elevated water tower. Per the 2024 Reserve Capacity Calculations, the water supply system has an available uncommitted reserve capacity of 1,714 ERU's. The Township's Permit to Take Water indicates an allowable daily water taking of 2,817 m<sup>3</sup>/day.

There is currently no existing water infrastructure along the portion of Highway 10 which bounds the Subject Development or along the CP Rail Trail. The nearest municipal water infrastructure includes:

- 150 mm watermain along Milliner Avenue that terminates at the Highway 10 and Milliner Avenue intersection.
- 150 mm watermain along Eco Parkway.

### 7.2 Proposed Servicing Strategy

There are currently no existing water connections available at the limits of Subject Development. The Eco Parkway watermain is proposed to be extended along with the roadway to the proposed development and will provide the primary connection to the development. A secondary connection along Highway 10 from Milliner Avenue will be required to meet sufficient flow requirements and to facilitate a looped distribution network per Township and Ministry of Environment, Conservation and Parks (MECP) standards. Internal watermain sizing will be subject to detailed design and confirmation by the Township's Engineering Consultant using the Township Water Model.

Watermain internal to the site will follow the alignment of the road network complete with individual service connections for each lot and building. Fire hydrants will be spaced as required to provide the necessary fire protection and to meet municipal standards. The preliminary water distribution layout has been presented in general site servicing plan as show in **Figure 3**.

Preliminary water demands for the Subject Development have been estimated in conjunction with Township Standards that concur with the MECP Design Guidelines for Drinking Water Systems.

Required domestic water flows have been calculated in conformance with the Township of Southgate's Engineering Design Standards and the "New Development Unit Flow Rates" specified

within the 2024 Reserve Capacity Study which calculates max day demand per capita to be 296 L/capita/day. Applicable design criteria and demands have been summarized in **Table 2** below.

**Table 2: Water Demand**

Land Use	Average Daily Flow (L/s)	Equivalent Population	Max Day Peak Factor	Max Day Domestic Demand (L/s)	Max Hour Peak Factor	Peak Hourly Domestic Demand (L/s)
Industrial	9.33	2125	2.25	16.37	3.38	24.60
Commercial	3.01	878	2.75	8.27	4.13	12.41
Residential	4.00	1169	2.50	10.01	3.75	15.01

Refer to **Appendix C** for the water demand calculations.

### Fire Flow Estimates

Water Supply for Fire Protection, A Guide to Recommend Practice (Fire Underwriters Survey (FUS), 2020) will be used to estimate fire flows for the Subject Development. Estimated flows are based on building floor area, construction type and structure exposure distance. The floor area and separation distances between buildings for the fire flow calculations were calculated using the maximum lot coverage and minimum front, side, and rear yard setbacks distance.

At this time, it is unknown what type of development will be built in the commercial and industrial areas of the Subject Development. Therefore, for commercial development a maximum 40% lot coverage was assumed based on Township of Southgate zoning for Commercial Zone (C2) and Community Facility (CF) and for industrial development, a maximum 50% lot coverage was assumed based on Township of Southgate zoning for General Industrial Zone (M1). To be conservative, the largest commercial block area of 7.38 ha was used to calculate lot coverage, which resulted in 29,536 m<sup>2</sup> of effective floor area which requires a fire flow of 216.7 L/s and 2,145 m<sup>3</sup> of fire storage volume. To be conservative, industrial block 215 with an area of 5.66 ha was used to calculate lot coverage, which resulted in 28,300 m<sup>2</sup> of effective floor area which requires a fire flow of 216.7 L/s and 2,145 m<sup>3</sup> of fire storage volume.

For the residential area, the maximum estimated fire flows are based on 6 back-to-back townhouse units before a fire wall break. The maximum required fire flow for the residential area is 150 L/s. Fire flow calculations have been provided in **Appendix C**.

Once more detail can be obtained regarding the uses of the industrial and commercial developments the fire flow and storage requirements can be refined. Hydrant flow testing or updates to the Township Water Model will be completed in detailed design and site plan application stages to confirm fire flows are available and any additional improvements to the water supply system required to sufficiently accommodate the proposed development.

## **8.0 PROPOSED STORMWATER MANAGEMENT, SITE GRADING AND DRAINAGE**

### **8.1 Stormwater Management Criteria**

The management of stormwater and site drainage for the proposed development must comply with the policies and standards of the various agencies including the Township of Southgate, Grand River Conservation Authority (GRCA), and the Ministry of Environment, Conservation and Parks (MECP).

The stormwater management criteria for the Subject Development includes:



- Water Quantity Control
  - Control of post development peak flows to pre-development levels for all storms up to and including the 100-year event.
- Water Quality Control
  - 80% removal efficiency of total suspended solids per MECP “Enhanced Protection” requirements.
- Erosion Control
  - 24-to-48-hour detention of the 25mm event.
- Development Standards
  - Urban cross section for public roadway with 5-year storm sewer system.
  - Lot grading at 2% optimum.
  - Minor and major drainage system to convey frequent and infrequent rainfall/runoff events, respectively.
- External Drainage Management
  - Manage the external drainage entering the site by safely routing these flows through or around the development to a suitable outlet.
- Water Balance
  - Best effort to achieve post-development annual infiltration volumes at or above pre-development levels.

In meeting the applicable policies and standards of the aforementioned agencies, the development will also be required to meet the following criteria:

- Manage the internal stormwater by safely conveying peak flows to suitable outlets and provide the necessary water quality and quantity controls.
- Manage any external drainage entering the site by providing safe conveyance across the Subject Development.
- Ensuring the development lands are not susceptible to flood inundation during all storm events.

## 8.2 Site Grading Criteria

The site grading for the development will be influenced by the sanitary and storm sewer networks and is designed to provide sufficient cover for the services.

The road network will have slopes at or greater than 0.5% and less than 5%. Grading of roadways will be completed to ensure no flooding of private property or ponding depths greater than 0.30 m during the 100-year storm event. The general grading strategy for the development is presented in **Figure 4**.

A groundwater monitoring program has been initiated to determine the seasonally high groundwater level. Once the seasonally high groundwater level has been established, the basement floor elevations will be set to ensure sufficient clearance.

## 8.3 Existing Drainage Conditions

The existing drainage patterns of the site have been reflected in the Pre-Development Drainage Plan (**Figure 5**). The existing topography indicates that the majority of the developable area of the site (55.2 ha) drains south towards the wetland feature. A portion of the Lands at the northwest corner of the Site drains northwest towards the Foley Drain. To the west of the site lies the CP Rail Trail and to the

east, the Highway 10 corridor. These features represent elevated linear structures bounding the east and west property lines with ditches preventing external flows from the west and east entering the development site. Northwest of the proposed development gradient generally drains away from the proposed development and west towards the Foley Drain. Northeast of the development the contours indicate drainage towards a draw in the middle of the Subject Lands. Lands to the south drain towards the Provincially Significant Wetland.

To facilitate the pre-development stormwater analysis, the following four catchments have been discretized based on the existing drainage conditions.

- **Catchment PRE-1:** This catchment area is approximately 55.2 ha and is located in the central portion of the subject lands. It consists of cultivated lands, wetlands, and woodlands and is made up entirely of Listowell Silt Loam. Stormwater from this catchment drains south to the wetland, where flows ultimately enter the Foley Drain. A curve number of 70.6 was utilized when representing this area.
- **Catchment PRE-2:** This catchment area is approximately 5.02 ha and is located in the west corner of the subject lands. It consists of cultivated lands and is made up of Listowell Silt Loam. Stormwater from this catchment drains northwest and towards the CP Rail Trail before discharging to the Foley Drain. A curve number of 70.3 was used when representing this area.
- **Catchment EXT-1:** This catchment area is approximately 24.2 ha and is located to the northeast of the subject lands. It consists of forested, and cultivated areas and is entirely made up of Listowell Silt Loam. Runoff from this catchment drains south towards the draw south before discharging to the wetland. A curve number of 64.7 was used to represent this area.
- **Catchment EXT-2:** This catchment area is approximately 2.33 ha and is located within the Subject Lands towards the northeast. It consists of an existing 1 storey dwelling with a driveway and is made up entirely of Listowell Silt Loam. Runoff from this catchment drains towards the Subject Lands and to the east towards the Highway 10 ditch. A curve number of 71.5 was used to represent this area.

#### 8.4 Proposed Drainage Conditions

The Subject Development will be constructed to a fully urbanized system complete with curb and gutter and storm sewers. A dual drainage approach will consist of minor and major stormwater flow routes to ensure adequate conveyance of runoff. The minor drainage system will consist of storm sewers and catch basins sized to convey the 5-year design storm event. The major drainage system will provide overland stormwater flow routes within the road allowance directing drainage toward the appropriate Stormwater Management Facility.

The criteria listed in Section 8.1 will be utilized to appropriately size the required Stormwater Management Blocks. It is anticipated that two (2) stormwater management (SWM) blocks will be required to support the Dundalk Southeast Development. Based on the existing topography, the low point of Subject Development is in the south center section of the site. The proposed SWM ponds will discharge from the east and west to the central environmental protection lands. There is a poorly defined watercourse originating from the sites environmental protection lands that discharges to a wetland area south of the proposed development. This wetland ultimately drains through a CP Rail Trail cross culvert entering a more well-defined tributary to the Foley Drain and ultimately the Grand River.

Preliminary site grading and storm sewer routing have been completed to ensure that the provided minor and major storm drainage systems to the SWM Facilities are feasible. The outlet location and storm sewer sizing will be confirmed at the detailed design stage.

To facilitate the post-development stormwater analysis, the following seven (7) catchments have been discretized based on the proposed drainage conditions.

- **Catchment POST-1:** This catchment area is approximately 16.4 ha and consists of live-work and single detached residential areas, and right of ways (ROWs). A percent impervious of 69.8% was utilized to represent this catchment. Runoff from this catchment will be conveyed to SWM Facility #1 via storm sewers and overland flow routes.
- **Catchment POST-2:** This catchment area is approximately 14.40 ha and consists of livework and single detached residential areas, commercial areas, and public ROWs. A percent impervious of 81.7% was utilized to represent this catchment. Runoff from this catchment will be conveyed to SWM Facility #1 via storm sewers and overland flow routes.
- **Catchment POST-3:** This catchment area is approximately 30.0 ha and consists of apartment, back-to-back townhouse units, single detached residential areas, industrial area, parks, ROW and a sewage pumping station. A percent impervious of 78.2% was utilized to represent this catchment. Runoff from this catchment will be conveyed to SWM Facility #2 via storm sewers and overland flow routes.
- **Catchment EXT-1:** This catchment area is approximately 20.3 ha of forested and cultivated land. A curve number of 65.6 was used to represent this area. Runoff from this catchment will be conveyed to wetland via storm sewers. A 1350 mm diameter storm sewer running at 0.5 m/s will be required to convey the regional flows of 2.96 m<sup>3</sup>/s. Please refer to Appendix F for detailed calculations.
- **Catchment EXT-2:** This catchment area is approximately 2.33 ha and consists of an existing 1 storey dwelling with a driveway. A curve number of 71.5 was utilized to represent this catchment.
- **SWMF-1:** This catchment is approximately 1.73 ha and consists of the proposed eastern SWM Facility block. A percent impervious of 50% was utilized to represent the catchment. Runoff from this catchment will be directed to the SWM Facility. The SWM Facility will outlet to the wetland.
- **SWMF-2:** This catchment is approximately 2.64 ha and consists of the proposed western SWM Facility block. A percent impervious of 50% was utilized to represent the catchment. Runoff from this catchment will be directed to the SWM Facility. The SWM Facility will outlet to the wetland.

#### 8.4.1 Quantity Control

Rainfall was simulated using a 24-hour SCS Type II distribution and a 3-hour Chicago distribution consistent with Township Standards. Rainfall depths and intensities were obtained from the MTO IDF Look Up Tool based on the location of the Subject Development. The MTO IDF data and hydrologic modelling parameter sheets have been provided in **Appendix D**. Hydrologic modelling files, including input and output have been provided in **Appendix E**.

A summary of the release rates and storage volumes for the SWM Facility #1 has been provided in **Table 3** below.

**Table 3: Summary of SWM Facility #1 Release Rate & Storage Volumes**

Storm	Release Rate (m <sup>3</sup> /s)	Water Surface Elevation (m)	Maximum Storage (m <sup>3</sup> )
2 yr Chicago	0.118	507.60	4375
5 yr Chicago	0.215	507.80	5670
10 yr Chicago	0.286	507.90	6461
25 yr Chicago	0.383	508.00	7447
50 yr Chicago	0.460	508.10	8186
100 yr Chicago	0.540	508.20	8931
2 yr SCS	0.274	507.90	6334
5 yr SCS	0.470	508.10	8279
10 yr SCS	0.611	508.20	9578
25 yr SCS	0.797	508.40	11183
50 yr SCS	0.940	508.50	12361
100 yr SCS	1.086	508.70	13533

A summary of the release rates and storage volumes for the SWM Facility #2 has been provided in **Table 4** below.

**Table 4: Summary of SWM Facility #2 Release Rate & Storage Volumes**

Storm	Release Rate (m <sup>3</sup> /s)	Water Surface Elevation (m)	Maximum Storage (m <sup>3</sup> )
2 yr Chicago	0.089	507.70	7422
5 yr Chicago	0.188	507.90	9730
10 yr Chicago	0.266	508.00	11201
25 yr Chicago	0.371	508.10	12969
50 yr Chicago	0.454	508.20	14256
100 yr Chicago	0.539	508.30	15523
2 yr SCS	0.238	508.00	10690
5 yr SCS	0.435	508.20	13965
10 yr SCS	0.584	508.40	16166
25 yr SCS	0.786	508.60	18943
50 yr SCS	0.944	508.70	21013
100 yr SCS	1.108	508.90	23077

A summary of the pre and post-development stormwater flows towards the south wetland has been provided in **Table 5** below.

**Table 5: Summary of “Post to Pre” Peak Flows towards Wetland**

Return Period (Years)	Pre-Development (m <sup>3</sup> /s) [ 81.73 ha]	Post-Development (m <sup>3</sup> /s) [ 86.64 ha]
2 yr Chicago	0.529	0.312
5 yr Chicago	1.073	0.621
10 yr Chicago	1.519	0.892
25 yr Chicago	2.158	1.270
50 yr Chicago	2.684	1.580
100 yr Chicago	3.247	1.911
2 yr SCS	1.840	0.987
5 yr SCS	3.193	1.783
10 yr SCS	4.209	2.393
25 yr SCS	5.568	3.206
50 yr SCS	6.632	3.841
100 yr SCS	7.737	4.499

As evidenced by **Table 5**, the proposed SWM Facilities provides ‘Post-to-Pre’ peak flow control for all storm events up to and including the 100-year storm event. The Regional event will outlet to by an overland flow route from the pond to southern wetland.

In post development there are no flows to the north towards the Foley Drain.

#### 8.4.2 Quality & Erosion Control

Stormwater management quality and erosion control will be provided by the SWM Facility#1 and SWM Facility #2. The conceptual design of the proposed SWM Facilities has incorporated permanent pools and sediment forebays to provide appropriate water quality treatment. As the Grand River is the ultimate receiver from the Subject Lands, the development must incorporate measures to provide “Enhanced Protection” (*Stormwater Management Planning and Design Manual, Ministry of the Environment, 2003*).

Erosion control will be principally achieved by incorporating extended detention into the operation of the wet pond. Sizing was based on providing minimum 24-hour drawdown of the runoff volume produced during the 25mm event.

The Subject Development drainage area for the SWM Facility #1 is 76.2% impervious and 21.33 ha. As such, the minimum water quality volume for a stormwater wet pond is 235 m<sup>3</sup>/ha (*Stormwater Management Planning and Design Manual, Ministry of the Environment, 2003*). The total water quality volume consists of 195 m<sup>3</sup>/ha for permanent pool and 40 m<sup>3</sup>/ha for extended detention. The required and provided extended detention and permanent pool values have been summarized in **Table 7**. Refer to **Appendix F** for the water quality and extended detention calculations.

**Table 7: Stormwater Management Facility #1 Quality Control Characteristics**

	SWM Facility #1	
	Required Volume (m <sup>3</sup> )	Provided Volume (m <sup>3</sup> )
Permanent Pool	4167	7805
MOE Extended Detention	1736	2136
Erosion Control	853	2136

The Subject Development drainage area for the SWM Facility #2 is 74.8% impervious and 30.0 ha. As such, the minimum water quality volume for a stormwater wet pond is 233 m<sup>3</sup>/ha (*Stormwater Management Planning and Design Manual, Ministry of the Environment, 2003*). The total water quality volume consists of 193 m<sup>3</sup>/ha for permanent pool and 40 m<sup>3</sup>/ha for extended detention. The required and provided extended detention and permanent pool values have been summarized in **Table 8**. Refer to **Appendix F** for the water quality and extended detention calculations.

**Table 8: Stormwater Management Facility #2 Quality Control Characteristics**

	SWM Facility #2	
	Required Volume (m <sup>3</sup> )	Provided Volume (m <sup>3</sup> )
Permanent Pool	6300	13580
MOE Extended Detention	2691	3381
Erosion Control	1306	3381

## 9.0 WATER BALANCE AND INFILTRATION

The use of Low Impact Development (LID) measures to aid in achieving water balance requirements and stormwater quality/quantity control will be investigated during Draft Plan Approval process and as per hydrogeological recommendations.

It is anticipated, based on a preliminary review, that various opportunities exist to implement LID techniques to achieve the stormwater management objectives for the sites. At this stage it is premature to design the LID's, as there is insufficient information for the site (i.e., soil types, groundwater elevation). As part of the Draft Plan Approval/detailed design, this information will be obtained, and LID options will be evaluated to determine feasibility and suitability for the developments.

## 10.0 EROSION AND SEDIMENT CONTROLS

All sediment and erosion controls will be installed prior to the commencement of any earth works and maintained throughout until the site is stabilized or as directed by the Engineer, GRCA and/or Township. Controls are to be inspected regularly, after each significant rainfall, and maintained in proper working condition. The proposed erosion and sediment controls may include the SWM Facility, interceptor ditches, silt fencing, dust suppressions, and mud mats. Further details have been provided within the Fill Control Report, which will be submitted under separate cover.

## 11.0 UTILITIES

The development will be serviced with natural gas, telephone, cable TV and hydro. All such utilities are available in the area of development. Coordination for extension of and connection to existing services will be undertaken as development approvals advance. Utilities are proposed to follow the alignment of the internal road network, with individual service connections to each lot. A joint utility trench is proposed for the development.

## 12.0 CONCLUSIONS & RECOMMENDATIONS

Based on the foregoing, we conclude that Dundalk Southeast Development can be adequately serviced.

- Access to the Subject Development will be provided via one connection off Highway 10 and an extension of Eco Parkway. Municipal roads will be designed in accordance with Township of Southgate Standards.
- The Subject Development will be serviced via an internal gravity sanitary sewer system that will outlet to the proposed sanitary pumping station.
- An internal watermain will be provided through two connections from an extension of the watermain along Eco Parkway and connection to the watermain at Highway 10 and Milliner Avenue which will follow the alignment of the internal road network complete with all valving, appurtenances, and hydrants to meet Township of Southgate Standards
- The proposed Stormwater Management Facilities will provide quality control for the subject site. The proposed SWM Facilities are adequately sized to provide "enhanced protection" level treatment. Quantity control is met for the subject site by controlling post-development flows to pre-development levels for all storms up to the 100-year storm event. The SWM facility will incorporate a minimum 24-hour retention of the 25mm event to provide erosion control.
- The development will be fully serviced by hydro, natural gas, cable, and telecommunications.

Based on the above, we recommend approval of the Planning Applications for the Subject Lands from the perspective of engineering servicing requirements.

**C.F. CROZIER & ASSOCIATES INC.**



Nicole O'Connor, P.Eng  
Project Engineer

**C.F. CROZIER & ASSOCIATES INC.**



Adrian Mysliwiec, EIT.  
Engineering Intern

# APPENDIX A

## Sanitary Demand and WWTF Calculations





Project: Dundalk Southeast  
Project No.: 1060-6489  
Date: 10-Oct-24  
By: AM  
Check: JLA

## Dundalk Southeast - Industrial Sanitary Flows

### SITE STATISTICS

Industrial Area **17.96 ha**

### SANITARY DESIGN FLOWS

Industrial **35 m<sup>3</sup>/ ha \* d**

Average Daily Industrial Flow **628,740 L/d**  
**7.28 L/s**

Peak Factor 3.00

Daily Industrial Peak Flow 21.83 L/sec

### INFLOW AND INFILTRATION

Unit Infiltration Allowance (per Township of Southgate Standards) 0.15 L/s/ha

Total Infiltration Allowance 2.69 L/sec

**Total Industrial Sanitary Design Flow 24.53 L/s**



Project: Dundalk Southeast  
Project No.: 1060-6489  
Date: 10-Oct-24  
By: AM  
Check: JLA

## Dundalk Southeast - Commercial Sanitary Flows

### SITE STATISTICS

Commercial Site Area	<b>8.93 ha</b>
Live Work Townhouse Units	<b>78 units</b>
Live Work Commercial Area (assume 25 sqm/unit)	<b>1,950 sqm</b>

### SANITARY DESIGN FLOWS

Commercial	5 L/d/sqm
Average Daily Commercial Design Flow	28 m <sup>3</sup> / ha * d
Average Daily Commercial Flow (Site Area)	250 m <sup>3</sup> / d
	<b>249,956 L/d</b>
Average Daily Commercial Flow (Live Work Towns)	<b>9,750 L/d</b>
*assumed 25 sqm of commercial area per unit	
Total Average Daily Commercial Flow	<b>259,706 L/d</b>
	<b>3.01 L/s</b>
Peak Factor	1.00
Daily Commercial Peak Flow	3.01 L/sec
<b><u>INFLOW AND INFILTRATION</u></b>	
Unit Infiltration Allowance (per Township of Southgate Standards)	0.15 L/s/ha
Total Infiltration Allowance	1.34 L/sec
<b>Total Commercial Sanitary Design Flow</b>	<b>4.34 L/s</b>



Project: Dundalk Southeast  
Project No.: 1060-6489  
Date: 10-Oct-24  
By: AM  
Check: JLA

### Dundalk Southeast - Residential Sanitary Flows

#### SITE STATISTICS

Total Developed Site Area (*includes apartments, lots, park, ROW)	22.66 ha
Single Detached Units	191 units
Townhouse Units	154 units
Apartment Units (138 units, assume 0.7 ERU per unit)	97 units
Total Units	<b>442 units</b>
Persons Per New Equivalent Residential Unit (ERU) (2022 DC Background Study)	2.61 p.p.u
Residential Population	<b>1,153 persons</b>

#### SANITARY DESIGN FLOWS

Residential (Per New Development Per Capita Flow) (Triton 2024 Reserve Capacity)	300 L/cap/d
Total Average Daily Residential Flow	<b>345,900 L/d</b> <b>4.00 L/s</b>
Harmon Peak Factor	3.76
Daily Residential Peak Flow	15.05 L/sec

#### INFLOW AND INFILTRATION

Unit Infiltration Allowance (per Township of Southgate Standards)	0.15 L/s/ha
Total Infiltration Allowance	3.40 L/sec

<b>Total Residential Sanitary Design Peak Flow</b>	<b>18.45 L/s</b>
--	------------------

### Dundalk Sanitary Capacity Evaluation

DESCRIPTION	2024	POST WWTF UPGRADES	UNITS
Available Capacity	1,832	3,025	m <sup>3</sup> /day
Average Day Flow	1,149	1,149	m <sup>3</sup> /day
Reserve Capacity	683	1,876	m <sup>3</sup> /day
Serviced Households	1,501	1,487	ERUs
Persons Per New <b>Equivalent Residential Unit</b> (2022 DC Background Study)	2.61	2.61	Persons
Average New Development Per Capita Flow	0.300	0.300	m <sup>3</sup> /day
Equivalent Flow Per Residential Unit	0.783	0.783	m <sup>3</sup> /day
<b>Additional ERUs that can be serviced</b>	<b>873</b>	<b>2395</b>	<b>ERUs</b>

#### TOTAL EQUIVALENT RESIDENTIAL UNIT (ERU) SUMMARY OF OCCUPIED, COMMITTED AND UNCOMMITTED UNITS

DEVELOPMENT	OCCUPIED UNITS 2023	REMAINING UNITS AT END OF 2023	UNCOMMITTED UNITS (ERUs)
White Rose (Phase 3)	0	30	
Flato West Block 75	30	5	
Flato East (Phase 7, 8 & 10)	68	120	
Flato East (Phase 11)	0	197	
Flato East (Phase 11 - Block 344)	0	29	
Glenelg (Phase 1)	130	22	
Annual Infill Lots	0	5	
<b>TOTAL COMMITTED UNITS 2023</b>	<b>228</b>	<b>408</b>	
White Rose (Phase 3)			47
Flato East (Phase 9)			47
Glenelg (Phase 2)			155
Glenelg (Phase 3)			474
NorthWest MZO Lands (Ida)			250
Southeast MZO Lands (Ecopark)			1793
Northeast MZO Lands (Glenelg Phase 4)			1300
<b>TOTAL UNCOMMITTED UNITS</b>			<b>4066</b>
<b>Uncommitted Reserve Capacity ERUs in 2024</b>			<b>465</b>
<b>Total Number of Available ERUs Upon Completion of WWTF Upgrades</b>			<b>2395</b>
<b>Total Projected ERUs of Reserve Capacity Available Upon Occupation of Committed Units</b>			<b>1987</b>
<b>Projected ERUs of Reserve Capacity Available Upon Occupation of The Above Uncommitted Units</b>			<b>-2079</b>

# APPENDIX B

## Water Capacity and Demand Calculations



Project: Dundalk Southeast  
 Project No.: 1060-6489  
 Date: 2024-10-18  
 By: AM  
 Check: JLA

**Dundalk Water System Capacity Evaluation**

DESCRIPTION	2024	UNITS	
Available Capacity	2,817	m <sup>3</sup> /day	
Max Day Flow	1,180	m <sup>3</sup> /day	
Reserve Capacity	1,637	m <sup>3</sup> /day	
Serviced Households	1,501	ERUs	
Maximum Day Per Capita Flow	0.296	m <sup>3</sup> /day	
Persons Per New <b>Equivalent Residential Unit</b> (2022 DC Background Study)	2.61	Persons	
Additional population that can be served	5530	Persons	
<b>Additional ERUs that can be served</b>	<b><u>2119</u></b>	<b>ERUs</b>	
<b>TOTAL EQUIVALENT RESIDENTIAL UNIT (ERU) SUMMARY OF OCCUPIED, COMMITTED AND UNCOMMITTED UNITS IN 2024</b>			
DEVELOPMENT	OCCUPIED UNITS 2023	REMAINING UNITS AT END OF 2023	UNCOMMITTED UNITS
White Rose (Phase 3)	0	30	
Flato West Block 75	30	5	
Flato East (Phase 7, 8 & 10)	68	120	
Flato East (Phase 11)	0	197	
Flato East (Phase 11 - Block 344)	0	29	
Glenelg (Phase 1)	130	22	
Annual Infill Lots	0	5	
<b>TOTAL COMMITTED UNITS 2024</b>	<b><u>228</u></b>	<b><u>408</u></b>	
White Rose (Phase 3)			47
Flato East (Phase 9)			47
Glenelg (Phase 2)			155
Glenelg (Phase 3)			474
NorthWest MZO Lands (Ida)			250
Southeast MZO Lands (Ecopark)			1793
Northeast MZO Lands (Glenelg Phase 4)			1300
<b>TOTAL UNCOMMITTED UNITS</b>			<b><u>4066</u></b>
<b>Total Number of Available ERUs</b>			<b>2119</b>
<b>Total Projected ERUs of Reserve Capacity Available Upon Occupation of Committed Units</b>			<b>1711</b>
<b>Projected ERUs of Reserve Capacity Available Upon Occupation of The Above Uncommitted Units</b>			<b>-2355</b>



Project: Dundalk Southeast  
Project No.: 1060-6489  
Date: 10-Oct-24  
By: AM  
Check: JLA

## Dundalk Southeast - Industrial Water Demand

### WATER DEMAND FLOWS

Average Daily Industrial Flow	<b>628,740 L/d</b> <b>7.28 L/s</b>
Max Day per Capita Demand (Triton 2024 Reserve Capacity)	296 L/C-day
Equivalent Industrial Population	2,125 persons
<b>Peaking Factors</b>	
Max Day (Table 3-1 MECP Drinking Water System Guidelines)	2.25
Max Hour (Table 3-1 MECP Drinking Water System Guidelines)	3.38
<b>Total Maximum Day Domestic Demand</b>	<b>16.37 L/s</b>
<b>Total Peak Hourly Domestic Demand</b>	<b>24.60 L/s</b>



Project: Dundalk Southeast  
Project No.: 1060-6489  
Date: 10-Oct-24  
By: AM  
Check: JLA

### Dundalk Southeast - Commercial Water Demand

#### WATER DEMAND FLOWS

Average Daily Commercial Flow	<b>259,706 L/d</b> <b>3.01 L/s</b>
Max Day per Capita Demand (Triton 2024 Reserve Capacity)	296 L/C-day
Equivalent Commercial Population	878 persons
<b>Peaking Factors</b>	
Max Day (Table 3-1 MECP Drinking Water System Guidelines)	2.75
Max Hour (Table 3-1 MECP Drinking Water System Guidelines)	4.13
<b>Total Maximum Day Domestic Demand</b>	<b>8.27 L/s</b>
<b>Total Peak Hourly Domestic Demand</b>	<b>12.41 L/s</b>





Project: Dundalk Southeast  
Project No.: 1060-6489  
Date: 10-Oct-24  
By: AM  
Check: JLA

### Dundalk Southeast - Residential Water Demand

#### SITE STATISTICS

#### Residential

#### WATER DEMAND FLOWS

Average Daily Residential Flow	<b>345,900 L/d</b> <b>4.00 L/s</b>
Max Day per Capita Demand (Triton 2024 Reserve Capacity)	296 L/C-day
Equivalent Residential Population	1,169 persons
<b>Peaking Factors</b>	
Max Day (Table 3-1 MECP Drinking Water System Guidelines)	2.50
Max Hour (Table 3-1 MECP Drinking Water System Guidelines)	3.75
<b>Total Maximum Day Domestic Demand</b>	<b>10.01 L/s</b>
<b>Total Peak Hourly Domestic Demand</b>	<b>15.01 L/s</b>

# APPENDIX C

## Fire Flow Calculations

**Water Supply for Public Fire Protection - 2020**

**Fire Underwriters Survey**

**Part II - Guide for Determination of Required Fire Flows for Public Fire Protection in Canada**

An estimate of fire flow required for a given area may be determined by the formula:

$$RFF = 220 * C * \sqrt{A}$$

where:

- RFF** = the required fire flow in litres per minute (L/min)
- C** = the construction coefficient is related to the type of construction of the building
  - = 1.5 for Type V Wood Frame Construction
  - = 0.8 for Type IV-A Mass Timber Construction
  - = 0.9 for Type IV-B Mass Timber Construction
  - = 1.0 for Type IV-C Mass Timber Construction
  - = 1.5 for Type IV-D Mass Timber Construction
  - = 1.0 for Type III Ordinary Construction
  - = 0.8 for Type II Non-combustible Construction
  - = 0.6 for Type I Fire Resistive Construction
- A** = the total effective floor area (effective building area) in square metres (excluding basements at least 50 percent below grade) in the building considered

**Step A. Construction Coefficient (C)** 1.0 = 1.0 for Type III Ordinary Construction

Is basement at least 50% below grade? **Yes** If yes, basement floor area excluded  
 Vertical openings protected? **Yes** \*For consideration for effective area calculations

**Step B. Proposed Building** **Apartment**

**Calculate Effective Floor Area based on the highlighted cell**

- C value from 1.0 to 1.5: 100% of all floor areas are used
- C value below 1 and vertical openings are not protected: Consider two largest floors plus 50% of all floor above to a max of eight
- C value below 1 and vertical openings are protected: Consider single largest floor plus 25% of the two immediately adjoining floors

\*block is 1.031 ha and assume 20% coverage

Floors Above Grade	Total Floor Area (m <sup>2</sup> )	% of Area Considered	Effective Floor Area (m <sup>2</sup> )
Basement		NA	NA
Ground Floor	784.0	100%	784.0
Level 2	784.0	100%	784.0
Level 3	784.0	100%	784.0
Level 4	784.0	100%	784.0
Level 5			0.0
Level 6			0.0
Level 7			0.0
Level 8			0.0
<b>Total</b>	<b>3136.0</b>		<b>3136.0</b>

\* assume 4 floors  
 \*A building may be subdivided if there is a vertical firewall with a fire-resistance rating greater than 2 hours, and meets the requirements of the National Building Code.

**Total Effective Floor Area** **3136.0** m<sup>2</sup>

**Step C. Therefore RFF =** **12,000** L/min (rounded to nearest 1000 L/min)

**Step D.** The required fire flow may be reduced by as much as -25% for occupancies having contents with very low fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Type of Occupancy	Adjustment Factor	Occupancy and Contents Adjustment Factor
Residential	Limited Combustible -15%	Non-Combustible -25%
		Limited Combustible -15%
		Combustible 0%
		Free Burning 15%
		Rapid Burning 25%

**RFF =** **10,200** L/min (not rounded)

**Step E.** Sprinklers - The required fire flow may be reduced by up to 50% for complete automatic sprinkler protection depending upon adequacy of system.

	Yes/No/Unknown	Possible Reduction Available	Actual Reduction Provided
Automatic sprinkler protection designed and installed in accordance with NFPA 13?	Yes	-30%	-30%
Water supply is standard for both the system and Fire Department hose lines?	Yes	-10%	-10%
Fully supervised system?	Yes	-10%	-10%

**Total Reduction %** -50% (reduction)

\*Reduction available assumes complete building coverage  
\*30% reduction typical for building requiring sprinkler system

**Total Reduced Flow** -5,100 L/min (reduction, not rounded)

**Step F.** Exposure - A percentage of water for the exposures should be added to the required fire flow for the subject building to provide adequate flow rates for hose streams used to reduce the spreading of fire from the subject building to exposed risks. The required fire flow of a subject building may be increased depending on the severity of exposed risks to the subject building and the distance between the exposed risks and the subject building. This charge considers the usage of water supplies to prevent exposed risks from igniting or being damaged during a major fire incident in the subject building.

Separation Distance	Maximum Exposure Adjustment Charge
0 to 3m	25%
3.1 to 10m	20%
10.1 to 20m	15%
20.1 to 30m	10%
Greater than 30m	0%

\*If a vertical fire wall is properly constructed and has a rating of no less than 2 hours, then the boundary can be treated as protected with no exposure charge

\*The maximum exposure adjustment charge to be applied to a subject building is 75%

**Exposed buildings**

Name	Distance	Surcharge
North Adjacent Dwelling	31	0%
East Adjacent Dwelling	31	0%
South Adjacent Dwelling	31	0%
West Adjacent Dwelling	31	0%

**0 L/min Surcharge (not rounded)**

**Step G. Final Required Fire Flow**

Step D - Occupancy Adjusted Fire Flow Demand	10,200 L/min
Step E - Sprinkler (Reduction)	-5,100 L/min
Step F - Exposure Charge	0 L/min

**Final Required Fire Flow:** 5,100 L/min  
5,000 1000L/min)

or

83.3 L/s  
1,321 USGPM

**Determine Required Fire Storage Volume**

Flow from above 5,000 L/min  
Required duration 1.50 hours Refer to Table 1 for Duration

Therefore: 450,000 Litres or 450 m<sup>3</sup> is the required fire storage volume.

**Table 1 - FUS 2020**

Required Duration of Fire Flow	Duration (hours)
Flow Required L/min	
2,000 or 12000	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 or 40,000	9.5

\*Interpolate for intermediate figures



**Water Supply for Public Fire Protection - 2020**

**Fire Underwriters Survey**

**Part II - Guide for Determination of Required Fire Flows for Public Fire Protection in Canada**

An estimate of fire flow required for a given area may be determined by the formula:

$$RFF = 220 * C * \sqrt{A}$$

where:

- RFF** = the required fire flow in litres per minute (L/min)
- C** = the construction coefficient is related to the type of construction of the building
  - = 1.5 for Type V Wood Frame Construction
  - = 0.8 for Type IV-A Mass Timber Construction
  - = 0.9 for Type IV-B Mass Timber Construction
  - = 1.0 for Type IV-C Mass Timber Construction
  - = 1.5 for Type IV-D Mass Timber Construction
  - = 1.0 for Type III Ordinary Construction
  - = 0.8 for Type II Non-combustible Construction
  - = 0.6 for Type I Fire Resistive Construction
- A** = the total effective floor area (effective building area) in square metres (excluding basements at least 50 percent below grade) in the building considered

**Step A. Construction Coefficient (C)** 0.8 = 1.0 for Type III Ordinary Construction

Is basement at least 50% below grade? **Yes** If yes, basement floor area excluded  
 Vertical openings protected? **Yes** \*For consideration for effective area calculations

**Step B. Proposed Building** **Commercial**

Calculate Effective Floor Area based on the highlighted cell

- C value from 1.0 to 1.5: 100% of all floor areas are used
- C value below 1 and vertical openings are not protected: Consider two largest floors plus 50% of all floor above to a max of eight \*assume 40% of larger commercial block
- C value below 1 and vertical openings are protected: Consider single largest floor plus 25% of the two immediately adjoining floors

Floors Above Grade	Total Floor Area (m <sup>2</sup> )	% of Area Considered	Effective Floor Area (m <sup>2</sup> )
Basement		NA	NA
Ground Floor	29536.0	100%	29536.0
Level 2			0.0
Level 3			0.0
Level 4			0.0
Level 5			0.0
Level 6			0.0
Level 7			0.0
Level 8			0.0
<b>Total</b>	<b>29536.0</b>		<b>29536.0</b>

\*A building may be subdivided if there is a vertical firewall with a fire-resistance rating greater than 2 hours, and meets the requirements of the National Building Code.

**Total Effective Floor Area** **29536.0** m<sup>2</sup>

**Step C. Therefore RFF =** **30,000** L/min (rounded to nearest 1000 L/min)

**Step D.** The required fire flow may be reduced by as much as -25% for occupancies having contents with very low fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Type of Occupancy	Adjustment Factor	Occupancy and Contents Adjustment Factor
Commercial	Limited Combustible -15%	Non-Combustible -25%
		Limited Combustible -15%
		Combustible 0%
		Free Burning 15%
		Rapid Burning 25%

**RFF =** **25,500** L/min (not rounded)

**Step E.** Sprinklers - The required fire flow may be reduced by up to 50% for complete automatic sprinkler protection depending upon adequacy of system.

	Yes/No/Unknown	Possible Reduction Available	Actual Reduction Provided
Automatic sprinkler protection designed and installed in accordance with NFPA 13?	Yes	-30%	-30%
Water supply is standard for both the system and Fire Department hose lines?	Yes	-10%	-10%
Fully supervised system?	Yes	-10%	-10%

**Total Reduction %** -50% (reduction)

\*Reduction available assumes complete building coverage  
\*30% reduction typical for building requiring sprinkler system

**Total Reduced Flow** -12,750 L/min (reduction, not rounded)

**Step F.** Exposure - A percentage of water for the exposures should be added to the required fire flow for the subject building to provide adequate flow rates for hose streams used to reduce the spreading of fire from the subject building to exposed risks. The required fire flow of a subject building may be increased depending on the severity of exposed risks to the subject building and the distance between the exposed risks and the subject building. This charge considers the usage of water supplies to prevent exposed risks from igniting or being damaged during a major fire incident in the subject building.

Separation Distance	Maximum Exposure Adjustment Charge
0 to 3m	25%
3.1 to 10m	20%
10.1 to 20m	15%
20.1 to 30m	10%
Greater than 30m	0%

\*If a vertical fire wall is properly constructed and has a rating of no less than 2 hours, then the boundary can be treated as protected with no exposure charge

\*The maximum exposure adjustment charge to be applied to a subject building is 75%

**Exposed buildings**

Name	Distance	Surcharge
North	Adjacent Dwelling 31	0%
East	Adjacent Dwelling 31	0%
South	Adjacent Dwelling 31	0%
West	Adjacent Dwelling 31	0%

**0 L/min Surcharge (not rounded)**

**Step G. Final Required Fire Flow**

Step D - Occupancy Adjusted Fire Flow Demand	25,500 L/min
Step E - Sprinkler (Reduction)	-12,750 L/min
Step F - Exposure Charge	0 L/min

**Final Required Fire Flow:** 12,750 L/min

**13,000 1000L/min)**

or

**216.7 L/s**

**3,434 USGPM**

**Determine Required Fire Storage Volume**

Flow from above	13,000 L/min
Required duration	2.75 hours

Refer to **Table 1** for Duration

Therefore: 2,145,000 Litres or

2,145 m<sup>3</sup> is the required fire storage volume.

**Table 1 - FUS 2020**

**Required Duration of Fire Flow**

Flow Required L/min	Duration (hours)
2,000 or 12000	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 or 40,000	9.5

**\*Interpolate for intermediate figures**

**Water Supply for Public Fire Protection - 2020**

**Fire Underwriters Survey**

**Part II - Guide for Determination of Required Fire Flows for Public Fire Protection in Canada**

An estimate of fire flow required for a given area may be determined by the formula:

$$RFF = 220 * C * \sqrt{A}$$

where:

- RFF** = the required fire flow in litres per minute (L/min)
- C** = the construction coefficient is related to the type of construction of the building
  - = 1.5 for Type V Wood Frame Construction
  - = 0.8 for Type IV-A Mass Timber Construction
  - = 0.9 for Type IV-B Mass Timber Construction
  - = 1.0 for Type IV-C Mass Timber Construction
  - = 1.5 for Type IV-D Mass Timber Construction
  - = 1.0 for Type III Ordinary Construction
  - = 0.8 for Type II Non-combustible Construction
  - = 0.6 for Type I Fire Resistive Construction
- A** = the total effective floor area (effective building area) in square metres (excluding basements at least 50 percent below grade) in the building considered

**Step A. Construction Coefficient (C)** 0.8 = 1.0 for Type III Ordinary Construction

Is basement at least 50% below grade? **Yes** If yes, basement floor area excluded  
 Vertical openings protected? **Yes** \*For consideration for effective area calculations

**Step B. Proposed Building** **Industrial**

Calculate Effective Floor Area based on the highlighted cell

- C value from 1.0 to 1.5: 100% of all floor areas are used
- C value below 1 and vertical openings are not protected: Consider two largest floors plus 50% of all floor above to a max of eight
- C value below 1 and vertical openings are protected: Consider single largest floor plus 25% of the two immediately adjoining floors

\*assume 50% area of Industrial Block 215

Floors Above Grade	Total Floor Area (m <sup>2</sup> )	% of Area Considered	Effective Floor Area (m <sup>2</sup> )
Basement		NA	NA
Ground Floor	28300.0	100%	28300.0
Level 2			0.0
Level 3			0.0
Level 4			0.0
Level 5			0.0
Level 6			0.0
Level 7			0.0
Level 8			0.0
<b>Total</b>	<b>28300.0</b>		<b>28300.0</b>

\*A building may be subdivided if there is a vertical firewall with a fire-resistance rating greater than 2 hours, and meets the requirements of the National Building Code.

**Total Effective Floor Area** **28300.0** m<sup>2</sup>

**Step C. Therefore RFF =** **30,000** L/min (rounded to nearest 1000 L/min)

**Step D.** The required fire flow may be reduced by as much as -25% for occupancies having contents with very low fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Type of Occupancy	Adjustment Factor	Occupancy and Contents Adjustment Factor
Commercial	Limited Combustible -15%	Non-Combustible -25%
		Limited Combustible -15%
		Combustible 0%
		Free Burning 15%
		Rapid Burning 25%

**RFF =** **25,500** L/min (not rounded)

**Step E.** Sprinklers - The required fire flow may be reduced by up to 50% for complete automatic sprinkler protection depending upon adequacy of system.

	Yes/No/Unknown	Possible Reduction Available	Actual Reduction Provided
Automatic sprinkler protection designed and installed in accordance with NFPA 13?	Yes	-30%	-30%
Water supply is standard for both the system and Fire Department hose lines?	Yes	-10%	-10%
Fully supervised system?	Yes	-10%	-10%

**Total Reduction %** -50% (reduction)

\*Reduction available assumes complete building coverage  
\*30% reduction typical for building requiring sprinkler system

**Total Reduced Flow** -12,750 L/min (reduction, not rounded)

**Step F.** Exposure - A percentage of water for the exposures should be added to the required fire flow for the subject building to provide adequate flow rates for hose streams used to reduce the spreading of fire from the subject building to exposed risks. The required fire flow of a subject building may be increased depending on the severity of exposed risks to the subject building and the distance between the exposed risks and the subject building. This charge considers the usage of water supplies to prevent exposed risks from igniting or being damaged during a major fire incident in the subject building.

Separation Distance	Maximum Exposure Adjustment Charge
0 to 3m	25%
3.1 to 10m	20%
10.1 to 20m	15%
20.1 to 30m	10%
Greater than 30m	0%

\*If a vertical fire wall is properly constructed and has a rating of no less than 2 hours, then the boundary can be treated as protected with no exposure charge

\*The maximum exposure adjustment charge to be applied to a subject building is 75%

**Exposed buildings**

Name	Distance	Surcharge
North	Adjacent Dwelling 31	0%
East	Adjacent Dwelling 31	0%
South	Adjacent Dwelling 31	0%
West	Adjacent Dwelling 31	0%

**0 L/min Surcharge (not rounded)**

**Step G. Final Required Fire Flow**

Step D - Occupancy Adjusted Fire Flow Demand	25,500 L/min
Step E - Sprinkler (Reduction)	-12,750 L/min
Step F - Exposure Charge	0 L/min

**Final Required Fire Flow:** 12,750 L/min

**13,000 1000L/min)**

or

**216.7 L/s**

**3,434 USGPM**

**Determine Required Fire Storage Volume**

Flow from above	13,000 L/min
Required duration	2.75 hours

Refer to **Table 1** for Duration

Therefore: 2,145,000 Litres or

2,145 m<sup>3</sup> is the required fire storage volume.

**Table 1 - FUS 2020**

**Required Duration of Fire Flow**

Flow Required L/min	Duration (hours)
2,000 or 12000	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 or 40,000	9.5

**\*Interpolate for intermediate figures**





**Water Supply for Public Fire Protection - 2020**

**Fire Underwriters Survey**

**Part II - Guide for Determination of Required Fire Flows for Public Fire Protection in Canada**

An estimate of fire flow required for a given area may be determined by the formula:

$$RFF = 220 * C * \sqrt{A}$$

where:

- RFF** = the required fire flow in litres per minute (L/min)
- C** = the construction coefficient is related to the type of construction of the building
  - = 1.5 for Type V Wood Frame Construction
  - = 0.8 for Type IV-A Mass Timber Construction
  - = 0.9 for Type IV-B Mass Timber Construction
  - = 1.0 for Type IV-C Mass Timber Construction
  - = 1.5 for Type IV-D Mass Timber Construction
  - = 1.0 for Type III Ordinary Construction
  - = 0.8 for Type II Non-combustible Construction
  - = 0.6 for Type I Fire Resistive Construction
- A** = the total effective floor area (effective building area) in square metres (excluding basements at least 50 percent below grade) in the building considered

**Step A. Construction Coefficient (C)** 1.0 = 1.0 for Type III Ordinary Construction

Is basement at least 50% below grade? **Yes** If yes, basement floor area excluded  
 Vertical openings protected? **Yes** \*For consideration for effective area calculations

**Step B. Proposed Building** **Townhouse Row**

**Calculate Effective Floor Area based on the highlighted cell**

- C value from 1.0 to 1.5: 100% of all floor areas are used
- C value below 1 and vertical openings are not protected: Consider two largest floors plus 50% of all floor above to a max of eight
- C value below 1 and vertical openings are protected: Consider single largest floor plus 25% of the two immediately adjoining floors

\*assume 65sqm per townhouse

Floors Above Grade	Total Floor Area (m <sup>2</sup> )	% of Area Considered	Effective Floor Area (m <sup>2</sup> )
Basement		NA	NA
Ground Floor	390.0	100%	390.0
Level 2	390.0	100%	390.0
Level 3			0.0
Level 4			0.0
Level 5			0.0
Level 6			0.0
Level 7			0.0
Level 8			0.0
<b>Total</b>	<b>780.0</b>		<b>780.0</b>

\*A building may be subdivided if there is a vertical firewall with a fire-resistance rating greater than 2 hours, and meets the requirements of the National Building Code.

**Total Effective Floor Area** **780.0 m<sup>2</sup>**

**Step C. Therefore RFF = 6,000 L/min (rounded to nearest 1000 L/min)**

**Step D.** The required fire flow may be reduced by as much as -25% for occupancies having contents with very low fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Type of Occupancy	Adjustment Factor	Occupancy and Contents Adjustment Factor
Townhouse Row	Combustible 0%	Non-Combustible -25%
	0 L/min surcharge	Limited Combustible -15%
		Combustible 0%
		Free Burning 15%
		Rapid Burning 25%

**RFF = 6,000 L/min (not rounded)**

**Step E.** Sprinklers - The required fire flow may be reduced by up to 50% for complete automatic sprinkler protection depending upon adequacy of system.

	Yes/No/Unknown	Possible Reduction Available	Actual Reduction Provided
Automatic sprinkler protection designed and installed in accordance with NFPA 13?	No	-30%	0%
Water supply is standard for both the system and Fire Department hose lines?	No	-10%	0%
Fully supervised system?	No	-10%	0%

**Total Reduction %** 0% (reduction)

\*Reduction available assumes complete building coverage  
\*30% reduction typical for building requiring sprinkler system

**Total Reduced Flow** 0 L/min (reduction, not rounded)

**Step F.** Exposure - A percentage of water for the exposures should be added to the required fire flow for the subject building to provide adequate flow rates for hose streams used to reduce the spreading of fire from the subject building to exposed risks. The required fire flow of a subject building may be increased depending on the severity of exposed risks to the subject building and the distance between the exposed risks and the subject building. This charge considers the usage of water supplies to prevent exposed risks from igniting or being damaged during a major fire incident in the subject building.

Separation Distance	Maximum Exposure Adjustment Charge	
0 to 3m	25%	*If a vertical fire wall is properly constructed and has a rating of no less than 2 hours, then the boundary can be treated as protected with no exposure charge *The maximum exposure adjustment charge to be applied to a subject building is 75%
3.1 to 10m	20%	
10.1 to 20m	15%	
20.1 to 30m	10%	
Greater than 30m	0%	

**Exposed buildings**

Name	Distance	Surcharge	
North Adjacent Dwelling	4	20%	1200
East Adjacent Dwelling	16	15%	900
South Adjacent Dwelling	4	20%	1200
West Adjacent Dwelling	35	0%	0
			<b>3,300 L/min Surcharge (not rounded)</b>

**Step G. Final Required Fire Flow**

Step D - Occupancy Adjusted Fire Flow Demand 6,000 L/min  
Step E - Sprinkler (Reduction) 0 L/min  
Step F - Exposure Charge 3,300 L/min

**Final Required Fire Flow:** 9,300 L/min

9,000 1000L/min) or 150.0 L/s  
2,378 USGPM

**Determine Required Fire Storage Volume**

Flow from above 9,000 L/min  
Required duration 2.25 hours Refer to Table 1 for Duration

Therefore: 1,215,000 Litres or 1,215 m<sup>3</sup> is the required fire storage volume.

**Table 1 - FUS 2020**

**Required Duration of Fire Flow**

Flow Required L/min	Duration (hours)
2,000 or le 2000	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 and 40,000	9.5

\*Interpolate for intermediate figures

# APPENDIX D

## Hydrologic Modelling Parameters



Project Name: Dundalk Southeast  
 Project Number: 1060-6489  
 Date: 2024.08.29  
 By: AM

D.A. NAME PRE-1  
 D.A. AREA (ha) 55.20

**Hydrologic Parameters: CALIB NASHYD Command  
 Pre Development Drainage Area: Catchment PRE-1**

**Curve Number Calculation**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100.0%	55.20
				0.00
				0
				0
Total Area				55.20

**Impervious Landuses Present:**

Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	0	98	0	98	0	98	0	98	0	98	0.00	0.00
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area		0	0	0	0	0	0	0	0	0		

**Pervious Landuses Present:**

Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	3.08	60	1.20	65	5.50	50	0.00	69	45.42	74	55.20	3898.88
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area		3.08	1.20	5.50	0.00	45.42						

Composite Area Calculations		Total Pervious Area	55.20
		Total Impervious Area	0.0
		% Impervious	0.0%
		Composite Curve Number	70.6
Total Area Check			55.20

**Initial Abstraction and Tp Calculations**

Landuse	Initial Abstraction			Composite Curve Number								
	IA (mm)	Area (ha)	A * IA	Listowell Silt			0			0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	3.08	30.8	0.25	3.08	0.35	0.00		0		0	0.77
Meadow	8	1.2	9.6	0.28	1.20	0.40	0.00		0		0	0.336
Wetland	16	5.5	88	0.05	5.50	0.05	0.00		0		0	0.275
Lawn	5	0	0	0.15	0.00	0.15	0.00		0		0	0.000
Cultivated	7	45	317.94	0.35	45.42	0.55	0.00		0		0	15.897
Impervious	2	0	0	0.95	0.00	0.95	0.00		0		0	0.000
Composite IA		55.2	8.09	Composite Runoff Coefficient								0.313

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	V/S <sup>0.5</sup>	Velocity (m/s)	Tc (hr)	Tp (hr)	TOTAL Tp (hr)	Tc (hr)	Tp (hr)	Tc (hr)	Tp (hr)
Cultivated	872	5.5	0.63%	2.7	0.21	1.13	0.76	0.76	0.61	0.41	1.47	0.98

Appropriate calculated time to 0.41 Appropriate Method: Bransby Williams



Project Name: Dundalk Southeast  
 Project Number: 1060-6489  
 Date: 2024.08.29  
 By: AM

D.A. NAME **PRE-2**  
 D.A. AREA (ha) **5.02**

**Hydrologic Parameters: CALIB NASHYD Command**  
**Pre Development Drainage Area: Catchment PRE-2**

**Curve Number Calculation**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100.0%	5.02
				0
				0
Total Area				5.02

**Impervious Landuses Present:**

Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	0	98	0	98	0	98	0	98	0	98	0.00	0.00
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area		0	0	0	0	0	0	0	0	0		

**Pervious Landuses Present:**

Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	0.50	60	0.00	65	0.49	50	0.00	69	4.03	74	5.02	352.72
0	0.00	73	0.00	76	0.00	50	0.00	79	0.00	82	0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area		0.50	0.00	0.49	0.00	0.00	0.00	4.03				

Composite Area Calculations		Total Pervious Area	5.02
		Total Impervious Area	0.0
		% Impervious	0.0%
		Composite Curve Number	70.3
Total Area Check			5.02

**Initial Abstraction and Tp Calculations**

Landuse	Initial Abstraction			Composite Curve Number									
	IA (mm)	Area (ha)	A * IA	Listowell Silt			0			0			
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC	
Woodland	10	0.50	5	0.25	0.50	0.35	0.00		0		0	0.125	
Meadow	8	0	0	0.28	0.00	0.40	0.00		0		0	0	
Wetland	16	0.49	7.84	0.05	0.49	0.05	0.00		0		0	0.0245	
Lawn	5	0	0	0.15	0.00	0.15	0.00		0		0	0.000	
Cultivated	7	4	28.21	0.35	4.03	0.55	0.00		0		0	1.411	
Impervious	2	0	0	0.95	0.00	0.95	0.00		0		0	0.000	
Composite IA		5.02	8.18	Composite Runoff Coefficient									0.311

Flow Path Description	Time to Peak Inputs					Uplands			Bransby Williams		Airport	
	Length (m)	Drop (m)	Slope (%)	V/S <sup>0.5</sup>	Velocity (m/s)	Tc (hr)	Tp (hr)	TOTAL Tp (hr)	Tc (hr)	Tp (hr)	Tc (hr)	Tp (hr)
Cultivated	322	3	0.93%	2.7	0.26	0.34	0.23	0.23	0.26	0.18	0.79	0.53

Appropriate calculated time to **0.18** Appropriate Method: **Bransby Williams**



Project Name: Dundalk Southeast  
 Project Number: 1060-6489  
 Date: 2024.08.29  
 By: AM

D.A. NAME EXT-1  
 D.A. AREA (ha) 24.20

**Hydrologic Parameters: CALIB NASHYD Command  
 Pre Development Drainage Area: Catchment EXT-1**

**Curve Number Calculation**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100.0%	24.20
				0
				0
				0
Total Area				24.20

**Impervious Landuses Present:**

Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	0	98	0	98	0	98	0	98	0	98	0.00	0.00
0	0	98		98		98		98		98	0	0
0	0	98		98		98		98		98	0	0
0	0	98		98		98		98		98	0	0
Subtotal Area		0	0	0	0	0	0	0	0	0		

**Pervious Landuses Present:**

Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	12.77	60	5.26	65	0.00	50	0.00	69	6.17	74	24.20	1564.68
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area		12.77	5.26	0.00	0.00	0.00	0.00	6.17				

Composite Area Calculations		Total Pervious Area	24.20
		Total Impervious Area	0.0
		% Impervious	0.0%
		Composite Curve Number	64.7
		Total Area Check	24.20

**Initial Abstraction and Tp Calculations**

Landuse	Initial Abstraction			Composite Curve Number								
	IA (mm)	Area (ha)	A * IA	Listowell Silt		0		0		0		A*RC
				RC	Area	RC	Area	RC	Area	RC	Area	
Woodland	10	12.77	127.7	0.25	12.77		0		0		0	3.1925
Meadow	8	5.26	42.08	0.28	5.26		0		0		0	1.4728
Wetland	16	0	0	0.05	0.00		0		0		0	0
Lawn	5	0	0	0.15	0.00		0		0		0	0.000
Cultivated	7	6	43.19	0.35	6.17		0		0		0	2.160
Impervious	2	0	0	0.95	0.00		0		0		0	0.000
Composite IA		24.2	8.80	Composite Runoff Coefficient								0.282

Flow Path Description	Time to Peak Inputs					Uplands			Bransby Williams		Airport	
	Length (m)	Drop (m)	Slope (%)	V/S <sup>0.5</sup>	Velocity (m/s)	Tc (hr)	Tp (hr)	TOTAL Tp (hr)	Tc (hr)	Tp (hr)	Tc (hr)	Tp (hr)
Cultivated	300	2.5	0.83%	2.7	0.25	0.34	0.23	0.23	0.21	0.14	0.82	0.55

Appropriate calculated time to 0.55 Appropriate Method: Airport



Project Name: Dundalk Southeast  
 Project Number: 1060-6489  
 Date: 2024.08.29  
 By: AM

D.A. NAME EXT-2  
 D.A. AREA (ha) 2.33

**Hydrologic Parameters: CALIB NASHYD Command  
 Pre Development Drainage Area: Catchment EXT-2**

**Curve Number Calculation**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100.0%	2.33
				0
				0
				0
Total Area				2.33

**Impervious Landuses Present:**

Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	0	98	0	98	0.14	98	0.06	98	0	98	0.20	19.60
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area		0	0	0	0.14	0.06	0	0	0	0	0.20	

**Pervious Landuses Present:**

Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	0.00	60	0.00	65	0.00	50	2.13	69	0.00	74	2.13	146.97
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area		0.00	0.00	0.00	0.00	2.13	0.00	0.00	0.00	0.00	2.13	

Composite Area Calculations		Total Pervious Area	2.13
		Total Impervious Area	0.2
		% Impervious	8.6%
		Composite Curve Number	71.5
		Total Area Check	2.33

**Initial Abstraction and Tp Calculations**

Landuse	Initial Abstraction			Composite Curve Number									
	IA (mm)	Area (ha)	A * IA	Listowell Silt			0			0			A*RC
				RC	Area	RC	Area	RC	Area	RC	Area		
Woodland	10	0.00	0	0.25	0.00		0		0		0	0	
Meadow	8	0	0	0.28	0.00		0		0		0	0	
Wetland	16	0	0	0.05	0.00		0		0		0	0	
Lawn	5	2.13	10.65	0.15	2.13		0		0		0	0.320	
Cultivated	7	0	0	0.35	0.00		0		0		0	0.000	
Impervious	2	0.2	0.4	0.95	0.20		0		0		0	0.190	
Composite IA		2.33	4.74	Composite Runoff Coefficient									0.219

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	V/S <sup>0.5</sup>	Velocity (m/s)	Tc (hr)	Tp (hr)	TOTAL Tp (hr)	Tc (hr)	Tp (hr)	Tc (hr)	Tp (hr)
Cultivated	195	1.5	0.77%	2.7	0.24	0.23	0.15	0.15	0.18	0.12	0.73	0.49

Appropriate calculated time to 0.49 Appropriate Method: Airport



Project Name: Dundalk Southeast  
 Project No.: 1060-6489  
 Date: 2024.08.29  
 By: AM/EC

D.A. NAME POST-1  
 D.A. AREA (ha) 5.20

**Post Development Drainage Area: Catchment POST-1**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100%	5.2
				0
				0
				0
Total Area Check			100%	5.2

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	3.20	98	0.00	98	0.00	98	0.43	98	0	98	3.63	355.5
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	3.20		0.00		0.00		0.43		0			

Pervious Landuses Present:												
Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	0	60	0	65	0	50	1.57	69	0	74	1.57	108.5
0	0		0		0		0		0		0	0.000
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		1.57		0			

	Pervious Area Calculations	Total Pervious Area	1.57
		Composite Pervious Curve Number	69
	Impervious Area Calculations	Total Directly Connected Area	3.20
		Total Indirectly Connected Area	0.43
		Total Impervious Area	3.63
		% X imp	61.5
		% T imp	69.8
Total Area Check			5.2

**Initial Abstraction and Tp Calculations**

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	1.57	7.86
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	20	0.025
Impervious	2.0	0.5	186	0.013





Project Name: Dundalk Southeast  
 Project No.: 1060-6489  
 Date: 2024.08.29  
 By: AM/EC

D.A. NAME POST-2  
 D.A. AREA (ha) 14.40

**Post Development Drainage Area: Catchment POST-2**

Soil Types Present:				
Type	ID	Hydrologic Group	% Area	Area
Listowell Silt Loam	Ls	B	100%	14.4
				0
				0
				0
Total Area Check			100%	14.4

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	11.43	98	0.00	98	0.00	98	0.35	98	0	98	11.77	1153.5
0		98		98		98		98	0	98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	11.43		0.00		0.00		0.35		0			

Pervious Landuses Present:												
Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	0	60	0	65	0	50	2.630	69	0	74	2.63	181.5
0	0		0		0		0		0		0	0.0
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
Subtotal Area	0		0		0		2.63		0			

	Pervious Area Calculations	Total Pervious Area	2.63
		Composite Pervious Curve Number	69
	Impervious Area Calculations	Total Directly Connected Area	11.43
		Total Indirectly Connected Area	0.35
		Total Impervious Area	11.77
		% X imp	79.3
		% T imp	81.7
Total Area Check			14.40

**Initial Abstraction and Tp Calculations**

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	2.63	13.15
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	30	0.025
Impervious	2.0	0.5	310	0.013



Project Name: Dundalk Southeast **D.A. NAME SWMF-1**  
 Project No.: 1060-6489 **D.A. AREA (ha) 1.73**  
 Date: 2024.08.29  
 By: AM/EC

**Post Development Drainage Area: Catchment SWMF-1**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100%	1.73
				0
				0
				0
<b>Total Area Check</b>			100%	1.73

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	0.00	98	0.00	98	0.00	98	0.00	98	0.87	98	0.865	84.770
0		98		98		98		98	0	98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
<b>Subtotal Area</b>	0.00		0.00		0.00		0.00		0.865			

Pervious Landuses Present:												
Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	0	60	0	65	0	50	0.865	69	0	74	0.865	59.685
0	0		0		0		0.000	69	0		0	0.000
0	0		0		0		0		0		0	0
0	0		0		0		0		0		0	0
<b>Subtotal Area</b>	0		0		0		0.865		0			

	Pervious Area Calculations	Total Pervious Area	0.865
		Composite Pervious Curve Number	69.00
	Impervious Area Calculations	Total Directly Connected Area	0.865
		Total Indirectly Connected Area	0.000
		Total Impervious Area	0.865
		% X imp	50.0
		% T imp	50.0
<b>Total Area Check</b>			1.73

**Initial Abstraction and Tp Calculations**

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.87	4.33
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	30	0.025
Impervious	2.0	0.5	107	0.013



Project Name: Dundalk Southeast  
 Project Number: 1060-6489  
 Date: 2024.08.29  
 By: AM

D.A. NAME POST-4  
 D.A. AREA (ha) 6.14

**Hydrologic Parameters: CALIB NASHYD Command  
 Pre Development Drainage Area: Catchment POST-4**

**Curve Number Calculation**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100%	6.14
				0
				0
				0
<b>Total Area</b>				<b>6.14</b>

**Impervious Landuses Present:**

Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	0	98	0	98	0	98	0	98	0	98	0.00	0.00
0	0	98	0	98	0	98	0	98	0	98	0	0
0	0	98	0	98	0	98	0	98	0	98	0	0
0	0	98	0	98	0	98	0	98	0	98	0	0
<b>Subtotal Area</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>

**Pervious Landuses Present:**

Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
Ls	3.07	60	0.00	65	3.07	50	0.00	69	0.00	74	6.14	337.70
0	0.00	60	0.00	65	0.00	50	0.00	69	0.00	74	0.00	0.00
0	0.00	60	0.00	65	0.00	50	0.00	69	0.00	74	0.00	0.00
0	0.00	60	0.00	65	0.00	50	0.00	69	0.00	74	0.00	0.00
<b>Subtotal Area</b>		<b>3.07</b>	<b>0.00</b>	<b>3.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6.14</b>	<b>0.00</b>

		Composite Area Calculations		Total Pervious Area	6.14
				Total Impervious Area	0.0
				% Impervious	0.0%
				Composite Curve Number	55.0
<b>Total Area Check</b>					<b>6.14</b>

**Initial Abstraction and Tp Calculations**

Landuse	Initial Abstraction			Composite Curve Number								
	IA (mm)	Area (ha)	A * IA	Listowell Silt		0		0		0		A*RC
				RC	Area	RC	Area	RC	Area	RC	Area	
Woodland	10	3.07	30.7	0.25	3.07		0		0		0	0.7675
Meadow	8	0	0	0.28	0.00		0		0		0	0
Wetland	16	3.07	49.12	0.05	3.07		0		0		0	0.1535
Lawn	5	0	0	0.15	0.00		0		0		0	0.000
Cultivated	7	0	0	0.35	0.00		0		0		0	0.000
Impervious	2	0	0	0.95	0.00		0		0		0	0.000
<b>Composite IA</b>		<b>6.14</b>	<b>13.00</b>	<b>Composite Runoff Coefficient</b>								<b>0.150</b>

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	V/S <sup>0.5</sup>	Velocity (m/s)	Tc (hr)	Tp (hr)	TOTAL Tp (hr)	Tc (hr)	Tp (hr)	Tc (hr)	Tp (hr)
Cultivated	195	1.5	0.77%	2.7	0.24	0.23	0.15	0.15	0.16	0.11	0.79	0.53

Appropriate calculated time to 0.53 Appropriate Method: Airport



Project Name: Dundalk Southeast  
 Project No.: 1060-6489  
 Date: 2024.10.10  
 By: AM

D.A. NAME POST-3  
 D.A. AREA (ha) 30.00

**Post Development Drainage Area: Catchment POST-3**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100%	30
				0
				0
				0
Total Area Check			100%	30

Impervious Landuses Present:												Subtotals	
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Area	A*CN	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN			
Ls	22.79	98	0	98	0	98	0.53	98	0	98	23.32	2285.6	
0		98		98		98		98	0	98	0	0	
0		98		98		98		98		98	0	0	
0		98		98		98		98		98	0	0	
Subtotal Area	22.79		0.00		0.00		0.53		0				

Pervious Landuses Present:												Subtotals	
Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Area	A*CN	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN			
Ls	0	60	0	65	0	50	6.68	69	0	74	6.68	460.7	
0	0		0		0		0		0		0	0.000	
0	0		0		0		0		0		0	0	
0	0		0		0		0		0		0	0	
Subtotal Area	0		0		0		6.68		0				

	Pervious Area Calculations	Total Pervious Area	6.68
		Composite Pervious Curve Number	69
	Impervious Area Calculations	Total Directly Connected Area	22.79
		Total Indirectly Connected Area	0.53
		Total Impervious Area	23.32
		% X imp	76.0
		% T imp	77.7
Total Area Check			30.00

**Initial Abstraction and Tp Calculations**

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	6.68	33.39
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	20	0.025
Impervious	2.0	0.5	447	0.013



Project Name: Dundalk Southeast **D.A. NAME SWMF-2**  
 Project No.: 1060-6489 **D.A. AREA (ha) 2.64**  
 Date: 2024.08.29  
 By: AM/EC

**Post Development Drainage Area: Catchment SWMF-2**

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowell Silt Loam	Ls	B	100%	2.64
				0
				0
				0
Total Area Check			100%	2.64

Impervious Landuses Present:												
Soils	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	0	98	0	98	0	98	0	98	1.32	98	1.32	129.360
0	0	98	0	98	0	98	0	98	0	98	0	0
0	0	98	0	98	0	98	0	98	0	98	0	0
0	0	98	0	98	0	98	0	98	0	98	0	0
Subtotal Area	0.000		0.000		0.000		0.000		1.32			

Pervious Landuses Present:												
Soils	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	0	60	0	65	0	50	1.320	69	0	74	1.32	91.080
0	0	60	0	65	0	50	0.000	69	0	74	0	0.000
0	0	60	0	65	0	50	0	69	0	74	0	0
0	0	60	0	65	0	50	0	69	0	74	0	0
Subtotal Area	0		0		0		1.320		0			

	Pervious Area Calculations	Total Pervious Area	1.32
		Composite Pervious Curve Number	69
Impervious Area Calculations		Total Directly Connected Area	1.320
		Total Indirectly Connected Area	0.0
		Total Impervious Area	1.32
		% X imp	50.0
		% T imp	50.0
Total Area Check			2.64

**Initial Abstraction and Tp Calculations**

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	1.32	6.60
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	30	0.025
Impervious	2.0	0.5	133	0.013

# APPENDIX E

## Hydrologic Modelling Input & Output Files

Pre-Dev V0

=====

```

V   V   I   SSSSS U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U  AAAAA L
V   V   I   SS    U   U  A   A  L
  WV    I   SSSSS UUUUU A   A  LLLLL

```

```

000  TTTTT TTTTT H   H   Y   Y   M   M   000  TM
0  0  T     T   H   H   Y Y  MM MM 0  0
0  0  T     T   H   H   Y   M   M 0  0
000  T     T   H   H   Y   M   M 000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \8b4aa765-aa46-4ee4-9535-841f8642dbe3\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \8b4aa765-aa46-4ee4-9535-841f8642dbe3\scen

DATE: 10-18-2024

TIME: 12:17:55

USER:

COMMENTS: \_\_\_\_\_

-----

```

*****
** SIMULATION : 25mm          **
*****

```

-----

| READ STORM | Filename: C:\Users\rdemesa\AppData

Pre-Dev V0

ata\Local\Temp\

78041aea-46e4-4c2f-9314-125c7468a7ff\969e4075

Ptotal= 12.00 mm | Comments: 25mm

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	1.58	0.00	3.17	0.00	4.75	0.72
0.08	0.00	1.67	0.00	3.25	5.04	4.83	0.00
0.17	0.00	1.75	12.24	3.33	0.00	4.92	0.00
0.25	0.72	1.83	0.00	3.42	0.00	5.00	0.72
0.33	0.00	1.92	0.00	3.50	5.04	5.08	0.00
0.42	0.00	2.00	12.24	3.58	0.00	5.17	0.00
0.50	0.72	2.08	0.00	3.67	0.00	5.25	0.72
0.58	0.00	2.17	0.00	3.75	2.88	5.33	0.00
0.67	0.00	2.25	33.12	3.83	0.00	5.42	0.00
0.75	0.72	2.33	0.00	3.92	0.00	5.50	0.72
0.83	0.00	2.42	0.00	4.00	2.88	5.58	0.00
0.92	0.00	2.50	33.12	4.08	0.00	5.67	0.00
1.00	0.72	2.58	0.00	4.17	0.00	5.75	0.72
1.08	0.00	2.67	0.00	4.25	1.44	5.83	0.00
1.17	0.00	2.75	9.36	4.33	0.00	5.92	0.00
1.25	4.32	2.83	0.00	4.42	0.00	6.00	0.72
1.33	0.00	2.92	0.00	4.50	1.44		
1.42	0.00	3.00	9.36	4.58	0.00		
1.50	4.32	3.08	0.00	4.67	0.00		

-----

CALIB		
NASHYD ( 0001)	Area (ha)= 55.20	Curve Number (CN)= 70.6
ID= 1 DT= 5.0 min	Ia (mm)= 8.09	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.41	

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 0.011 (i)

TIME TO PEAK (hrs)= 3.917

RUNOFF VOLUME (mm)= 0.139

TOTAL RAINFALL (mm)= 12.000

RUNOFF COEFFICIENT = 0.012

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----



Pre-Dev V0

CALIB			
NASHYD ( 0008)	Area (ha)=	24.20	Curve Number (CN)= 64.7
ID= 1 DT= 5.0 min	Ia (mm)=	8.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.55	

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 4.250  
 RUNOFF VOLUME (mm)= 0.072  
 TOTAL RAINFALL (mm)= 12.000  
 RUNOFF COEFFICIENT = 0.006

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
NASHYD ( 0010)	Area (ha)=	2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.49	

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 3.417  
 RUNOFF VOLUME (mm)= 0.485  
 TOTAL RAINFALL (mm)= 12.000  
 RUNOFF COEFFICIENT = 0.040

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0004)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	55.20	0.011	3.92	0.14
+ ID2= 2 ( 0010):	2.33	0.002	3.42	0.49
=====				
ID = 3 ( 0004):	57.53	0.012	3.83	0.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

-----

Pre-Dev V0

ADD HYD ( 0004)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):	57.53	0.012	3.83	0.15
+ ID2= 2 ( 0008):	24.20	0.002	4.25	0.07
=====				
ID = 1 ( 0004):	81.73	0.014	3.92	0.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	5.02	Curve Number (CN)=	70.3
NASHYD ( 0002)	Ia	(mm)=	8.18	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp	(hrs)=	0.18		

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.001 (i)

TIME TO PEAK (hrs)= 3.667

RUNOFF VOLUME (mm)= 0.131

TOTAL RAINFALL (mm)= 12.000

RUNOFF COEFFICIENT = 0.011

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| Junction Command(0012) |

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.00	3.67	0.13
OUTFLOW: ID= 2( 0012)	5.02	0.00	3.67	0.13

Pre-Dev V0

-----  
-  
=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
W I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\VH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\632acc8c-2a67-460d-80d6-66d1622028a2\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\VH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\632acc8c-2a67-460d-80d6-66d1622028a2\scen

DATE: 10-18-2024

TIME: 12:17:54

USER:

COMMENTS: \_\_\_\_\_

-----  
-----

\*\*\*\*\*  
\*\* SIMULATION : A. 2yr 3hr 10min Chicago \*\*  
\*\*\*\*\*

-----

| CHICAGO STORM | IDF curve parameters: A= 404.147

Pre-Dev V0

| Ptotal= 32.13 mm |

B= 0.000

C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs

Storm time step = 10.00 min

Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.76	0.83	80.82	1.67	5.83	2.50	3.63
0.17	4.42	1.00	17.11	1.83	5.15	2.67	3.39
0.33	5.48	1.17	10.79	2.00	4.63	2.83	3.20
0.50	7.50	1.33	8.23	2.17	4.23		
0.67	13.95	1.50	6.78	2.33	3.90		

-----  
 | CALIB |  
 | NASHYD ( 0001) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 55.20 Curve Number (CN)= 70.6  
 Ia (mm)= 8.09 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.41

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 0.404 (i)

TIME TO PEAK (hrs)= 1.583

RUNOFF VOLUME (mm)= 4.452

TOTAL RAINFALL (mm)= 32.132

RUNOFF COEFFICIENT = 0.139

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| NASHYD ( 0008) | Area (ha)= 24.20 Curve Number (CN)= 64.7
| ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.55

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.112 (i)  
 TIME TO PEAK (hrs)= 1.833  
 RUNOFF VOLUME (mm)= 3.362  
 TOTAL RAINFALL (mm)= 32.132  
 RUNOFF COEFFICIENT = 0.105

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| NASHYD ( 0010) | Area (ha)= 2.33 Curve Number (CN)= 71.5
| ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.49

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23

Pre-Dev V0

0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.022 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 5.832  
 TOTAL RAINFALL (mm)= 32.132  
 RUNOFF COEFFICIENT = 0.182

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

ADD HYD ( 0004)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	55.20	0.404	1.58	4.45
+ ID2= 2 ( 0010):	2.33	0.022	1.58	5.83
=====				
ID = 3 ( 0004):	57.53	0.426	1.58	4.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -

ADD HYD ( 0004)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):	57.53	0.426	1.58	4.51
+ ID2= 2 ( 0008):	24.20	0.112	1.83	3.36
=====				
ID = 1 ( 0004):	81.73	0.529	1.58	4.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -

CALIB			
NASHYD ( 0002)		Area	(ha)= 5.02
		Curve Number	(CN)= 70.3

Pre-Dev V0

|ID= 1 DT= 5.0 min | Ia (mm)= 8.18 # of Linear Res.(N)= 3.00  
----- U.H. Tp(hrs)= 0.18

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.056 (i)

TIME TO PEAK (hrs)= 1.167

RUNOFF VOLUME (mm)= 4.358

TOTAL RAINFALL (mm)= 32.132

RUNOFF COEFFICIENT = 0.136

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
Junction Command(0012)

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.06	1.17	4.36
OUTFLOW: ID= 2( 0012)	5.02	0.06	1.17	4.36

-----  
-  
=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VW I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\36ed9bcb-4abd-4df1-932e-25ae6cdeaceb\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\36ed9bcb-4abd-4df1-932e-25ae6cdeaceb\scen

DATE: 10-18-2024

TIME: 12:17:54

USER:

COMMENTS: \_\_\_\_\_

-----  
-----

\*\*\*\*\*  
\*\* SIMULATION : B. 5yr 3hr 10min Chicago \*\*  
\*\*\*\*\*



Pre-Dev V0

-----  
| CHICAGO STORM |  
Ptotal= 42.56 mm

IDF curve parameters: A= 535.364  
B= 0.000  
C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs  
Storm time step = 10.00 min  
Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.98	0.83	107.07	1.67	7.72	2.50	4.80
0.17	5.86	1.00	22.67	1.83	6.82	2.67	4.50
0.33	7.26	1.17	14.30	2.00	6.14	2.83	4.24
0.50	9.93	1.33	10.90	2.17	5.60		
0.67	18.47	1.50	8.98	2.33	5.16		

-----  
| CALIB |  
| NASHYD ( 0001) |  
ID= 1 DT= 5.0 min

Area (ha)= 55.20 Curve Number (CN)= 70.6  
Ia (mm)= 8.09 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.41

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 0.820 (i)  
TIME TO PEAK (hrs)= 1.500  
RUNOFF VOLUME (mm)= 8.473  
TOTAL RAINFALL (mm)= 42.565  
RUNOFF COEFFICIENT = 0.199

Pre-Dev V0

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
-
-----
| CALIB |
| NASHYD ( 0008) | Area (ha)= 24.20 Curve Number (CN)= 64.7
| ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.55

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.232 (i)

TIME TO PEAK (hrs)= 1.750

RUNOFF VOLUME (mm)= 6.615

TOTAL RAINFALL (mm)= 42.565

RUNOFF COEFFICIENT = 0.155

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
-
-----
| CALIB |
| NASHYD ( 0010) | Area (ha)= 2.33 Curve Number (CN)= 71.5
| ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.49

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------	------	------

Pre-Dev V0

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.040 (i)

TIME TO PEAK (hrs)= 1.583

RUNOFF VOLUME (mm)= 10.287

TOTAL RAINFALL (mm)= 42.565

RUNOFF COEFFICIENT = 0.242

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

ADD HYD ( 0004)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	55.20	0.820	1.50	8.47
+ ID2= 2 ( 0010):	2.33	0.040	1.58	10.29
=====				
ID = 3 ( 0004):	57.53	0.859	1.50	8.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0004)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):	57.53	0.859	1.50	8.55
+ ID2= 2 ( 0008):	24.20	0.232	1.75	6.61
=====				
ID = 1 ( 0004):	81.73	1.073	1.58	7.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

Pre-Dev V0

CALIB			
NASHYD ( 0002)	Area (ha)=	5.02	Curve Number (CN)= 70.3
ID= 1 DT= 5.0 min	Ia (mm)=	8.18	# of Linear Res.(N)= 3.00
-----	U.H. Tp(hrs)=	0.18	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.119 (i)  
 TIME TO PEAK (hrs)= 1.167  
 RUNOFF VOLUME (mm)= 8.320  
 TOTAL RAINFALL (mm)= 42.565  
 RUNOFF COEFFICIENT = 0.195

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
Junction Command(0012)

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.12	1.17	8.32
OUTFLOW: ID= 2( 0012)	5.02	0.12	1.17	8.32

-----  
-  
=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\92c11c38-8875-42fc-bfcd-929eb1d578cb\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\92c11c38-8875-42fc-bfcd-929eb1d578cb\scen

DATE: 10-18-2024

TIME: 12:17:54

USER:

COMMENTS: \_\_\_\_\_

-----  
-----

\*\*\*\*\*  
\*\* SIMULATION : C. 10yr 3hr 10min Chicago \*\*

Pre-Dev V0

\*\*\*\*\*

-----  
| CHICAGO STORM |  
Ptotal= 49.52 mm

IDF curve parameters: A= 622.842  
B= 0.000  
C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs  
Storm time step = 10.00 min  
Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	5.79	0.83	124.56	1.67	8.98	2.50	5.59
0.17	6.82	1.00	26.38	1.83	7.93	2.67	5.23
0.33	8.45	1.17	16.63	2.00	7.14	2.83	4.93
0.50	11.56	1.33	12.68	2.17	6.51		
0.67	21.49	1.50	10.45	2.33	6.01		

-----  
-

-----  
| CALIB |  
| NASHYD ( 0001) |  
ID= 1 DT= 5.0 min

Area (ha)= 55.20 Curve Number (CN)= 70.6  
Ia (mm)= 8.09 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.41

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 1.161 (i)

TIME TO PEAK (hrs)= 1.500

RUNOFF VOLUME (mm)= 11.659

Pre-Dev V0

TOTAL RAINFALL (mm)= 49.520

RUNOFF COEFFICIENT = 0.235

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----  
| CALIB |  
| NASHYD ( 0008) | Area (ha)= 24.20 Curve Number (CN)= 64.7  
| ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
-----  
U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.331 (i)

TIME TO PEAK (hrs)= 1.750

RUNOFF VOLUME (mm)= 9.247

TOTAL RAINFALL (mm)= 49.520

RUNOFF COEFFICIENT = 0.187

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----  
| CALIB |  
| NASHYD ( 0010) | Area (ha)= 2.33 Curve Number (CN)= 71.5  
| ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00  
-----  
U.H. Tp(hrs)= 0.49

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.054 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 13.731  
 TOTAL RAINFALL (mm)= 49.520  
 RUNOFF COEFFICIENT = 0.277

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

ADD HYD ( 0004)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):		55.20	1.161	1.50	11.66
+ ID2= 2 ( 0010):		2.33	0.054	1.58	13.73
=====					
ID = 3 ( 0004):		57.53	1.215	1.50	11.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0004)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):		57.53	1.215	1.50	11.74
+ ID2= 2 ( 0008):		24.20	0.331	1.75	9.25
=====					
ID = 1 ( 0004):		81.73	1.519	1.50	11.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



Pre-Dev V0

```

-----
| CALIB |
| NASHYD ( 0002) | Area (ha)= 5.02 Curve Number (CN)= 70.3
| ID= 1 DT= 5.0 min | Ia (mm)= 8.18 # of Linear Res.(N)= 3.00
-----
U.H. Tp(hrs)= 0.18

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.172 (i)  
 TIME TO PEAK (hrs)= 1.167  
 RUNOFF VOLUME (mm)= 11.464  
 TOTAL RAINFALL (mm)= 49.520  
 RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| Junction Command(0012) |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2( 0002)	5.02	0.17	1.17	11.46

Pre-Dev V0

OUTFLOW: ID= 2( 0012) 5.02 0.17 1.17 11.46

-----  
-  
=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VW I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\4db1a412-5dd2-4cb3-b89c-28989cd470fd\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\4db1a412-5dd2-4cb3-b89c-28989cd470fd\scen

DATE: 10-18-2024

TIME: 12:17:54

USER:

COMMENTS: \_\_\_\_\_

-----  
-----

Pre-Dev V0

\*\*\*\*\*  
 \*\* SIMULATION : D. 25yr 3hr 10min Chicago \*\*  
 \*\*\*\*\*

```
-----
| CHICAGO STORM |
| Ptotal= 58.14 mm |
-----
```

IDF curve parameters: A= 731.314  
 B= 0.000  
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs  
 Storm time step = 10.00 min  
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	6.80	0.83	146.25	1.67	10.54	2.50	6.56
0.17	8.01	1.00	30.97	1.83	9.31	2.67	6.14
0.33	9.92	1.17	19.53	2.00	8.38	2.83	5.79
0.50	13.57	1.33	14.89	2.17	7.65		
0.67	25.24	1.50	12.27	2.33	7.05		

```
-----
| CALIB |
| NASHYD ( 0001) |
| ID= 1 DT= 5.0 min |
-----
```

Area (ha)= 55.20 Curve Number (CN)= 70.6  
 Ia (mm)= 8.09 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.41

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 1.644 (i)

Pre-Dev V0

TIME TO PEAK (hrs)= 1.500  
RUNOFF VOLUME (mm)= 16.076  
TOTAL RAINFALL (mm)= 58.144  
RUNOFF COEFFICIENT = 0.276

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----  
| CALIB |  
| NASHYD ( 0008) | Area (ha)= 24.20 Curve Number (CN)= 64.7  
| ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
-----  
U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.473 (i)  
TIME TO PEAK (hrs)= 1.750  
RUNOFF VOLUME (mm)= 12.956  
TOTAL RAINFALL (mm)= 58.144  
RUNOFF COEFFICIENT = 0.223

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----  
| CALIB |  
| NASHYD ( 0010) | Area (ha)= 2.33 Curve Number (CN)= 71.5  
| ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00  
-----  
U.H. Tp(hrs)= 0.49

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.074 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 18.440  
 TOTAL RAINFALL (mm)= 58.144  
 RUNOFF COEFFICIENT = 0.317

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

ADD HYD ( 0004)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	55.20	1.644	1.50	16.08
+ ID2= 2 ( 0010):	2.33	0.074	1.58	18.44
=====				
ID = 3 ( 0004):	57.53	1.717	1.50	16.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0004)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0004):	57.53	1.717	1.50	16.17
+ ID2= 2 ( 0008):	24.20	0.473	1.75	12.96
=====				
ID = 1 ( 0004):	81.73	2.158	1.50	15.22

Pre-Dev V0

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0002) | Area (ha)= 5.02 Curve Number (CN)= 70.3
| ID= 1 DT= 5.0 min | Ia (mm)= 8.18 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.18

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.246 (i)

TIME TO PEAK (hrs)= 1.167

RUNOFF VOLUME (mm)= 15.827

TOTAL RAINFALL (mm)= 58.144

RUNOFF COEFFICIENT = 0.272

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| Junction Command(0012) |
-----

```

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)

Pre-Dev V0

INFLOW :	ID= 2( 0002)	5.02	0.25	1.17	15.83
OUTFLOW:	ID= 2( 0012)	5.02	0.25	1.17	15.83

-----  
 -  
 =====  
 =====

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
W  I  SSSSS  UUUUU  A  A  LLLLL

```

```

000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \ba9e819e-3341-42ae-ba4a-b32a536e6780\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \ba9e819e-3341-42ae-ba4a-b32a536e6780\scen

DATE: 10-18-2024

TIME: 12:17:54

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : E. 50yr 3hr 10min Chicago \*\*  
 \*\*\*\*\*

-----  
 | CHICAGO STORM |  
Ptotal= 64.54 mm

IDF curve parameters: A= 811.794  
 B= 0.000  
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs  
 Storm time step = 10.00 min  
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	7.55	0.83	162.35	1.67	11.70	2.50	7.28
0.17	8.89	1.00	34.38	1.83	10.34	2.67	6.82
0.33	11.01	1.17	21.68	2.00	9.30	2.83	6.42
0.50	15.06	1.33	16.53	2.17	8.49		
0.67	28.01	1.50	13.62	2.33	7.83		

-----  
 | CALIB |  
 | NASHYD ( 0001) |  
ID= 1 DT= 5.0 min

Area (ha)= 55.20 Curve Number (CN)= 70.6  
 Ia (mm)= 8.09 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.41

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Unit Hyd Qpeak (cms)= 5.142



Pre-Dev V0

PEAK FLOW (cms)= 2.038 (i)  
TIME TO PEAK (hrs)= 1.500  
RUNOFF VOLUME (mm)= 19.642  
TOTAL RAINFALL (mm)= 64.542  
RUNOFF COEFFICIENT = 0.304

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----  
| CALIB |  
| NASHYD ( 0008) | Area (ha)= 24.20 Curve Number (CN)= 64.7  
| ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
-----  
U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.592 (i)  
TIME TO PEAK (hrs)= 1.667  
RUNOFF VOLUME (mm)= 15.989  
TOTAL RAINFALL (mm)= 64.542  
RUNOFF COEFFICIENT = 0.248

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----  
| CALIB |  
| NASHYD ( 0010) | Area (ha)= 2.33 Curve Number (CN)= 71.5  
| ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00  
-----  
U.H. Tp(hrs)= 0.49

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.089 (i)

TIME TO PEAK (hrs)= 1.583

RUNOFF VOLUME (mm)= 22.205

TOTAL RAINFALL (mm)= 64.542

RUNOFF COEFFICIENT = 0.344

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0004)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	55.20	2.038	1.50	19.64
+ ID2= 2 ( 0010):	2.33	0.089	1.58	22.20
=====				
ID = 3 ( 0004):	57.53	2.127	1.50	19.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0004)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):	57.53	2.127	1.50	19.75
+ ID2= 2 ( 0008):	24.20	0.592	1.67	15.99
=====				

Pre-Dev V0

ID = 1 ( 0004): 81.73 2.684 1.50 18.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0002) | Area (ha)= 5.02 Curve Number (CN)= 70.3
| ID= 1 DT= 5.0 min | Ia (mm)= 8.18 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.18

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.307 (i)

TIME TO PEAK (hrs)= 1.167

RUNOFF VOLUME (mm)= 19.353

TOTAL RAINFALL (mm)= 64.542

RUNOFF COEFFICIENT = 0.300

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| Junction Command(0012) |
-----

```

AREA QPEAK TPEAK R.V.

Pre-Dev V0

	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.31	1.17	19.35
OUTFLOW: ID= 2( 0012)	5.02	0.31	1.17	19.35

-----  
 -  
 =====  
 =====

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  VV   I  SSSSS  UUUUU  A  A  LLLLL

```

```

000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
O  O  T    T  H  H  Y  Y  MM MM  O  O
O  O  T    T  H  H  Y  M  M  O  O
000  T    T  H  H  Y  M  M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \b39f7252-b4ca-4917-87c7-92f9254740a8\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \b39f7252-b4ca-4917-87c7-92f9254740a8\scen

DATE: 10-18-2024

TIME: 12:17:55

USER:

COMMENTS: \_\_\_\_\_

```
*****
** SIMULATION : F. 100yr 3hr 10min Chicago **
*****
```

```
-----
| CHICAGO STORM |
| Ptotal= 70.94 mm |
-----
```

```
IDF curve parameters: A= 892.273
                      B=  0.000
                      C=  0.699
used in:  INTENSITY = A / (t + B)^C
```

```
Duration of storm = 3.00 hrs
Storm time step   = 10.00 min
Time to peak ratio = 0.33
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	8.30	0.83	178.44	1.67	12.86	2.50	8.00
0.17	9.77	1.00	37.79	1.83	11.36	2.67	7.50
0.33	12.10	1.17	23.83	2.00	10.23	2.83	7.06
0.50	16.55	1.33	18.17	2.17	9.33		
0.67	30.79	1.50	14.97	2.33	8.61		

```
-----
| CALIB |
| NASHYD ( 0001) |
| ID= 1 DT= 5.0 min |
-----
```

```
Area (ha)= 55.20 Curve Number (CN)= 70.6
Ia (mm)= 8.09 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.41
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```
----- TRANSFORMED HYETOGRAPH -----
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Pre-Dev V0

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 2.460 (i)  
TIME TO PEAK (hrs)= 1.417  
RUNOFF VOLUME (mm)= 23.424  
TOTAL RAINFALL (mm)= 70.941  
RUNOFF COEFFICIENT = 0.330

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
NASHYD ( 0008)	Area (ha)= 24.20	Curve Number (CN)= 64.7	
ID= 1 DT= 5.0 min	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.55		

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.720 (i)  
TIME TO PEAK (hrs)= 1.667  
RUNOFF VOLUME (mm)= 19.237  
TOTAL RAINFALL (mm)= 70.941  
RUNOFF COEFFICIENT = 0.271

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
NASHYD ( 0010)	Area (ha)= 2.33	Curve Number (CN)= 71.5	

-----

Pre-Dev V0

|ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00  
----- U.H. Tp(hrs)= 0.49

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.106 (i)  
TIME TO PEAK (hrs)= 1.583  
RUNOFF VOLUME (mm)= 26.171  
TOTAL RAINFALL (mm)= 70.941  
RUNOFF COEFFICIENT = 0.369

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0004)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	55.20	2.460	1.42	23.42
+ ID2= 2 ( 0010):	2.33	0.106	1.58	26.17
=====				
ID = 3 ( 0004):	57.53	2.566	1.50	23.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0004)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):	57.53	2.566	1.50	23.53

Pre-Dev V0

+ ID2= 2 ( 0008): 24.20 0.720 1.67 19.24

=====  
ID = 1 ( 0004): 81.73 3.247 1.50 22.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0002) | Area (ha)= 5.02 Curve Number (CN)= 70.3
| ID= 1 DT= 5.0 min | Ia (mm)= 8.18 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.18

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 8.30 | 0.833 30.79 | 1.583 14.97 | 2.33 9.33
0.167 8.30 | 0.917 178.44 | 1.667 14.97 | 2.42 8.61
0.250 9.77 | 1.000 178.44 | 1.750 12.86 | 2.50 8.61
0.333 9.77 | 1.083 37.79 | 1.833 12.86 | 2.58 8.00
0.417 12.10 | 1.167 37.79 | 1.917 11.36 | 2.67 8.00
0.500 12.10 | 1.250 23.83 | 2.000 11.36 | 2.75 7.50
0.583 16.55 | 1.333 23.83 | 2.083 10.23 | 2.83 7.50
0.667 16.55 | 1.417 18.17 | 2.167 10.23 | 2.92 7.06
0.750 30.79 | 1.500 18.17 | 2.250 9.33 | 3.00 7.06

```

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.372 (i)

TIME TO PEAK (hrs)= 1.167

RUNOFF VOLUME (mm)= 23.094

TOTAL RAINFALL (mm)= 70.941

RUNOFF COEFFICIENT = 0.326

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| Junction Command(0012) |
-----

```



Pre-Dev V0

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.37	1.17	23.09
OUTFLOW: ID= 2( 0012)	5.02	0.37	1.17	23.09

-----  
-  
=====

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  VV   I  SSSSS  UUUUU  A  A  LLLLL

```

```

000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
O  O  T    T  H  H  Y  Y  MM MM  O  O
O  O  T    T  H  H  Y    M  M  O  O
000  T    T  H  H  Y    M  M  000

```

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\64f913cc-5aa7-4e5a-bfc9-2b9d3c05710c\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\64f913cc-5aa7-4e5a-bfc9-2b9d3c05710c\scen

DATE: 10-18-2024

TIME: 12:17:55

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : G. 2yr 24hr 15min SCS Type II \*\*  
 \*\*\*\*\*

-----  
 | READ STORM | Filename: C:\Users\rdemesa\AppData  
 | | ata\Local\Temp\  
 | |  
 | | 78041aea-46e4-4c2f-9314-125c7468a7ff\dc208b32  
 | Ptotal= 60.13 mm | Comments: G. 2yr 24hr 15min SCS Type II  
 -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.08	12.50	8.66	18.75	1.08
0.25	0.66	6.50	1.08	12.75	4.45	19.00	1.08
0.50	0.66	6.75	1.08	13.00	4.45	19.25	1.08
0.75	0.66	7.00	1.08	13.25	3.25	19.50	1.08
1.00	0.66	7.25	1.32	13.50	3.25	19.75	1.08
1.25	0.66	7.50	1.32	13.75	2.53	20.00	1.08
1.50	0.66	7.75	1.32	14.00	2.53	20.25	0.72
1.75	0.66	8.00	1.32	14.25	1.80	20.50	0.72
2.00	0.66	8.25	1.56	14.50	1.80	20.75	0.72
2.25	0.78	8.50	1.56	14.75	1.80	21.00	0.72
2.50	0.78	8.75	1.68	15.00	1.80	21.25	0.72
2.75	0.78	9.00	1.68	15.25	1.80	21.50	0.72
3.00	0.78	9.25	1.92	15.50	1.80	21.75	0.72
3.25	0.78	9.50	1.92	15.75	1.80	22.00	0.72
3.50	0.78	9.75	2.16	16.00	1.80	22.25	0.72
3.75	0.78	10.00	2.16	16.25	1.08	22.50	0.72
4.00	0.78	10.25	2.77	16.50	1.08	22.75	0.72
4.25	0.96	10.50	2.77	16.75	1.08	23.00	0.72
4.50	0.96	10.75	3.73	17.00	1.08	23.25	0.72
4.75	0.96	11.00	3.73	17.25	1.08	23.50	0.72
5.00	0.96	11.25	5.77	17.50	1.08	23.75	0.72
5.25	0.96	11.50	5.77	17.75	1.08	24.00	0.72
5.50	0.96	11.75	17.80	18.00	1.08		
5.75	0.96	12.00	73.60	18.25	1.08		
6.00	0.96	12.25	8.66	18.50	1.08		

CALIB			
NASHYD ( 0001)	Area (ha)=	55.20	Curve Number (CN)= 70.6
ID= 1 DT= 5.0 min	Ia (mm)=	8.09	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.41	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72

Pre-Dev V0

3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 1.405 (i)

TIME TO PEAK (hrs)= 12.583

RUNOFF VOLUME (mm)= 17.159

TOTAL RAINFALL (mm)= 60.130

RUNOFF COEFFICIENT = 0.285

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----

Pre-Dev V0

CALIB			
NASHYD ( 0008)	Area (ha)=	24.20	Curve Number (CN)= 64.7
ID= 1 DT= 5.0 min	Ia (mm)=	8.80	# of Linear Res.(N)= 3.00
-----	U.H. Tp(hrs)=	0.55	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72

Pre-Dev V0

3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.394 (i)

TIME TO PEAK (hrs)= 12.750

RUNOFF VOLUME (mm)= 13.873

TOTAL RAINFALL (mm)= 60.130

RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -  
 -----  
 | CALIB |  
 | NASHYD ( 0010) | Area (ha)= 2.33 Curve Number (CN)= 71.5

Pre-Dev V0

|ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00  
----- U.H. Tp(hrs)= 0.49

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72

Pre-Dev V0

3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.060 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 19.586

TOTAL RAINFALL (mm)= 60.130

RUNOFF COEFFICIENT = 0.326

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | ADD HYD ( 0004) |  
1 + 2 = 3

AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)



Pre-Dev V0

ID1= 1 ( 0001):	55.20	1.405	12.58	17.16
+ ID2= 2 ( 0010):	2.33	0.060	12.67	19.59
=====				
ID = 3 ( 0004):	57.53	1.465	12.58	17.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0004)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):	57.53	1.465	12.58	17.26
+ ID2= 2 ( 0008):	24.20	0.394	12.75	13.87
=====				
ID = 1 ( 0004):	81.73	1.840	12.58	16.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD ( 0002)		Area (ha)=	5.02	Curve Number (CN)= 70.3
ID= 1 DT= 5.0 min		Ia (mm)=	8.18	# of Linear Res.(N)= 3.00
-----		U.H. Tp(hrs)=	0.18	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08

1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72

Pre-Dev V0

5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.224 (i)  
 TIME TO PEAK (hrs)= 12.333  
 RUNOFF VOLUME (mm)= 16.897  
 TOTAL RAINFALL (mm)= 60.130  
 RUNOFF COEFFICIENT = 0.281

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -  
 -----  
Junction Command(0012)

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.22	12.33	16.90
OUTFLOW: ID= 2( 0012)	5.02	0.22	12.33	16.90

-----  
 -  
 =====  
 =====  
 V V I SSSSS U U A L (v 6.2.2015)  
 V V I SS U U A A L  
 V V I SS U U AAAAA L  
 V V I SS U U A A L  
 VV I SSSSS UUUUU A A LLLLL

Pre-Dev V0

```

      000   TTTT   TTTT   H   H   Y   Y   M   M   000   TM
      0 0   T     T     H   H   Y Y   MM MM 0 0
      0 0   T     T     H   H   Y     M   M 0 0
      000   T     T     H   H   Y     M   M 000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \5aceb8bd-74c3-4cda-a46e-27e0fc67b8db\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \5aceb8bd-74c3-4cda-a46e-27e0fc67b8db\scen

DATE: 10-18-2024

TIME: 12:17:55

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : H. 5yr 24hr 15min SCS Type II \*\*  
 \*\*\*\*\*

```

-----
|  READ STORM  |  Filename: C:\Users\rdemesa\AppData
|              |              ata\Local\Temp\
|              |
|              |  78041aea-46e4-4c2f-9314-125c7468a7ff\16110151
| Ptotal= 79.65 mm |  Comments: H. 5yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

Pre-Dev VO

0.00	0.00	6.25	1.43	12.50	11.47	18.75	1.43
0.25	0.88	6.50	1.43	12.75	5.89	19.00	1.43
0.50	0.88	6.75	1.43	13.00	5.89	19.25	1.43
0.75	0.88	7.00	1.43	13.25	4.30	19.50	1.43
1.00	0.88	7.25	1.75	13.50	4.30	19.75	1.43
1.25	0.88	7.50	1.75	13.75	3.35	20.00	1.43
1.50	0.88	7.75	1.75	14.00	3.35	20.25	0.96
1.75	0.88	8.00	1.75	14.25	2.39	20.50	0.96
2.00	0.88	8.25	2.07	14.50	2.39	20.75	0.96
2.25	1.04	8.50	2.07	14.75	2.39	21.00	0.96
2.50	1.04	8.75	2.23	15.00	2.39	21.25	0.96
2.75	1.04	9.00	2.23	15.25	2.39	21.50	0.96
3.00	1.04	9.25	2.55	15.50	2.39	21.75	0.96
3.25	1.04	9.50	2.55	15.75	2.39	22.00	0.96
3.50	1.04	9.75	2.87	16.00	2.39	22.25	0.96
3.75	1.04	10.00	2.87	16.25	1.43	22.50	0.96
4.00	1.04	10.25	3.66	16.50	1.43	22.75	0.96
4.25	1.27	10.50	3.66	16.75	1.43	23.00	0.96
4.50	1.27	10.75	4.94	17.00	1.43	23.25	0.96
4.75	1.27	11.00	4.94	17.25	1.43	23.50	0.96
5.00	1.27	11.25	7.65	17.50	1.43	23.75	0.96
5.25	1.27	11.50	7.65	17.75	1.43	24.00	0.96
5.50	1.27	11.75	23.58	18.00	1.43		
5.75	1.27	12.00	97.49	18.25	1.43		
6.00	1.27	12.25	11.47	18.50	1.43		

-----

CALIB			
NASHYD ( 0001)		Area (ha)= 55.20	Curve Number (CN)= 70.6
ID= 1 DT= 5.0 min		Ia (mm)= 8.09	# of Linear Res.(N)= 3.00
-----		U.H. Tp(hrs)= 0.41	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43

0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96

Pre-Dev VO

5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 2.421 (i)  
 TIME TO PEAK (hrs)= 12.583  
 RUNOFF VOLUME (mm)= 28.874  
 TOTAL RAINFALL (mm)= 79.650  
 RUNOFF COEFFICIENT = 0.363

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB							
NASHYD ( 0008)	Area (ha)=	24.20	Curve Number (CN)=	64.7			
ID= 1 DT= 5.0 min	Ia (mm)=	8.80	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.55					

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43

1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96



Pre-Dev V0

5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.700 (i)  
 TIME TO PEAK (hrs)= 12.750  
 RUNOFF VOLUME (mm)= 23.968  
 TOTAL RAINFALL (mm)= 79.650  
 RUNOFF COEFFICIENT = 0.301

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---

CALIB			
NASHYD ( 0010)	Area (ha)= 2.33	Curve Number (CN)= 71.5	
ID= 1 DT= 5.0 min	Ia (mm)= 4.74	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.49		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43

1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96

Pre-Dev V0

5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.099 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 31.854

TOTAL RAINFALL (mm)= 79.650

RUNOFF COEFFICIENT = 0.400

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0004)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	55.20	2.421	12.58	28.87
+ ID2= 2 ( 0010):	2.33	0.099	12.67	31.85
=====				
ID = 3 ( 0004):	57.53	2.520	12.58	28.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0004)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):	57.53	2.520	12.58	28.99
+ ID2= 2 ( 0008):	24.20	0.700	12.75	23.97
=====				
ID = 1 ( 0004):	81.73	3.193	12.58	27.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

Pre-Dev VO

CALIB			
NASHYD ( 0002)	Area (ha)=	5.02	Curve Number (CN)= 70.3
ID= 1 DT= 5.0 min	Ia (mm)=	8.18	# of Linear Res.(N)= 3.00
-----	U.H. Tp(hrs)=	0.18	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96

Pre-Dev V0

3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.384 (i)

TIME TO PEAK (hrs)= 12.333

RUNOFF VOLUME (mm)= 28.490

TOTAL RAINFALL (mm)= 79.650

RUNOFF COEFFICIENT = 0.358

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Pre-Dev V0

| Junction Command(0012) |

-----

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.38	12.33	28.49
OUTFLOW: ID= 2( 0012)	5.02	0.38	12.33	28.49

-----  
-  
=====

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  VV   I  SSSSS  UUUUU  A  A  LLLLL

```

```

000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000

```

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\ee6d30bd-4ab5-4516-9eb4-4ef806b79f63\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\ee6d30bd-4ab5-4516-9eb4-4ef806b79f63\scen

Pre-Dev V0

DATE: 10-18-2024

TIME: 12:17:55

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : I. 10yr 24hr 15min SCS Type I \*\*  
 \*\*\*\*\*

-----  
 | READ STORM | Filename: C:\Users\rdemesa\AppData  
 | | ata\Local\Temp\  
 | |  
 78041aea-46e4-4c2f-9314-125c7468a7ff\a2bed49a  
 | Ptotal= 92.66 mm | Comments: I. 10yr 24hr 15min SCS Type II  
 -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.67	12.50	13.34	18.75	1.67
0.25	1.02	6.50	1.67	12.75	6.86	19.00	1.67
0.50	1.02	6.75	1.67	13.00	6.86	19.25	1.67
0.75	1.02	7.00	1.67	13.25	5.00	19.50	1.67
1.00	1.02	7.25	2.04	13.50	5.00	19.75	1.67
1.25	1.02	7.50	2.04	13.75	3.89	20.00	1.67
1.50	1.02	7.75	2.04	14.00	3.89	20.25	1.11
1.75	1.02	8.00	2.04	14.25	2.78	20.50	1.11
2.00	1.02	8.25	2.41	14.50	2.78	20.75	1.11
2.25	1.20	8.50	2.41	14.75	2.78	21.00	1.11
2.50	1.20	8.75	2.59	15.00	2.78	21.25	1.11
2.75	1.20	9.00	2.59	15.25	2.78	21.50	1.11
3.00	1.20	9.25	2.97	15.50	2.78	21.75	1.11
3.25	1.20	9.50	2.97	15.75	2.78	22.00	1.11
3.50	1.20	9.75	3.34	16.00	2.78	22.25	1.11
3.75	1.20	10.00	3.34	16.25	1.67	22.50	1.11
4.00	1.20	10.25	4.26	16.50	1.67	22.75	1.11
4.25	1.48	10.50	4.26	16.75	1.67	23.00	1.11
4.50	1.48	10.75	5.74	17.00	1.67	23.25	1.11
4.75	1.48	11.00	5.74	17.25	1.67	23.50	1.11
5.00	1.48	11.25	8.90	17.50	1.67	23.75	1.11
5.25	1.48	11.50	8.90	17.75	1.67	24.00	1.11

Pre-Dev V0

5.50	1.48	11.75	27.43	18.00	1.67
5.75	1.48	12.00	113.42	18.25	1.67
6.00	1.48	12.25	13.34	18.50	1.67

CALIB			
NASHYD ( 0001)	Area (ha)=	55.20	Curve Number (CN)= 70.6
ID= 1 DT= 5.0 min	Ia (mm)=	8.09	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.41	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11



Pre-Dev V0

2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 3.187 (i)

TIME TO PEAK (hrs)= 12.500

RUNOFF VOLUME (mm)= 37.570

TOTAL RAINFALL (mm)= 92.660

RUNOFF COEFFICIENT = 0.405

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	Area (ha)= 24.20	Curve Number (CN)= 64.7
NASHYD ( 0008)	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.55	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11

Pre-Dev V0

2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.934 (i)

TIME TO PEAK (hrs)= 12.750

RUNOFF VOLUME (mm)= 31.614

TOTAL RAINFALL (mm)= 92.660

RUNOFF COEFFICIENT = 0.341

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD ( 0010)	Area (ha)=	2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.49	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11

Pre-Dev VO

3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.128 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 40.861

TOTAL RAINFALL (mm)= 92.660

RUNOFF COEFFICIENT = 0.441

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0004) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	55.20	3.187	12.50	37.57
+ ID2= 2 ( 0010):	2.33	0.128	12.67	40.86
=====				
ID = 3 ( 0004):	57.53	3.310	12.50	37.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0004) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0004):	57.53	3.310	12.50	37.70
+ ID2= 2 ( 0008):	24.20	0.934	12.75	31.61
=====				
ID = 1 ( 0004):	81.73	4.209	12.58	35.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0002) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	5.02	Curve Number (CN)=	70.3
Ia (mm)=	8.18	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.18		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

-----
| TRANSFORMED HYETOGRAPH |
-----

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67

1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11

Pre-Dev V0

5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.504 (i)  
 TIME TO PEAK (hrs)= 12.333  
 RUNOFF VOLUME (mm)= 37.106  
 TOTAL RAINFALL (mm)= 92.660  
 RUNOFF COEFFICIENT = 0.400

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -  
 -----  
Junction Command(0012)

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.50	12.33	37.11
OUTFLOW: ID= 2( 0012)	5.02	0.50	12.33	37.11

-----  
 -  
 =====  
 =====



Pre-Dev V0

```

V   V   I   SSSSS U   U   A   L           (v 6.2.2015)
V   V   I   SS   U   U   A A   L
V   V   I   SS   U   U   AAAAA L
V   V   I   SS   U   U   A   A   L
VV    I   SSSSS UUUUU A   A   LLLLL

```

```

000  TTTT  TTTT  H   H   Y   Y   M   M   000  TM
O   O   T   T   H   H   Y Y   MM MM  O   O
O   O   T   T   H   H   Y   M   M   O   O
000  T   T   H   H   Y   M   M   000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \0c9be667-98cd-4ca6-a6fd-6095f6b6cdc8\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \0c9be667-98cd-4ca6-a6fd-6095f6b6cdc8\scen

DATE: 10-18-2024

TIME: 12:17:55

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----

```

*****
** SIMULATION : J. 25yr 24hr 15min SCS Type I **
*****

```

```

-----
|   READ STORM   |   Filename: C:\Users\rdemesa\AppData
|                 |                   ata\Local\Temp\

```

Pre-Dev V0

78041aea-46e4-4c2f-9314-125c7468a7ff\3658f99e

Ptotal=108.80 mm | Comments: J. 25yr 24hr 15min SCS Type II

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.96	12.50	15.67	18.75	1.96
0.25	1.20	6.50	1.96	12.75	8.05	19.00	1.96
0.50	1.20	6.75	1.96	13.00	8.05	19.25	1.96
0.75	1.20	7.00	1.96	13.25	5.88	19.50	1.96
1.00	1.20	7.25	2.39	13.50	5.88	19.75	1.96
1.25	1.20	7.50	2.39	13.75	4.57	20.00	1.96
1.50	1.20	7.75	2.39	14.00	4.57	20.25	1.31
1.75	1.20	8.00	2.39	14.25	3.26	20.50	1.31
2.00	1.20	8.25	2.83	14.50	3.26	20.75	1.31
2.25	1.41	8.50	2.83	14.75	3.26	21.00	1.31
2.50	1.41	8.75	3.05	15.00	3.26	21.25	1.31
2.75	1.41	9.00	3.05	15.25	3.26	21.50	1.31
3.00	1.41	9.25	3.48	15.50	3.26	21.75	1.31
3.25	1.41	9.50	3.48	15.75	3.26	22.00	1.31
3.50	1.41	9.75	3.92	16.00	3.26	22.25	1.31
3.75	1.41	10.00	3.92	16.25	1.96	22.50	1.31
4.00	1.41	10.25	5.00	16.50	1.96	22.75	1.31
4.25	1.74	10.50	5.00	16.75	1.96	23.00	1.31
4.50	1.74	10.75	6.75	17.00	1.96	23.25	1.31
4.75	1.74	11.00	6.75	17.25	1.96	23.50	1.31
5.00	1.74	11.25	10.44	17.50	1.96	23.75	1.31
5.25	1.74	11.50	10.44	17.75	1.96	24.00	1.31
5.50	1.74	11.75	32.20	18.00	1.96		
5.75	1.74	12.00	133.17	18.25	1.96		
6.00	1.74	12.25	15.67	18.50	1.96		

CALIB			
NASHYD ( 0001)	Area (ha)=	55.20	Curve Number (CN)= 70.6
ID= 1 DT= 5.0 min	Ia (mm)=	8.09	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.41	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96

0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31

Pre-Dev VO

4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 4.210 (i)

TIME TO PEAK (hrs)= 12.500

RUNOFF VOLUME (mm)= 49.115

TOTAL RAINFALL (mm)= 108.800

RUNOFF COEFFICIENT = 0.451

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)= 24.20	Curve Number (CN)= 64.7
NASHYD ( 0008)	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.55	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96

0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31

Pre-Dev V0

4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 1.250 (i)  
 TIME TO PEAK (hrs)= 12.750  
 RUNOFF VOLUME (mm)= 41.913  
 TOTAL RAINFALL (mm)= 108.800  
 RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB			
NASHYD ( 0010)	Area (ha)=	2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.49	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96

0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31

Pre-Dev V0

4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.167 (i)  
 TIME TO PEAK (hrs)= 12.583  
 RUNOFF VOLUME (mm)= 52.740  
 TOTAL RAINFALL (mm)= 108.800  
 RUNOFF COEFFICIENT = 0.485

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

ADD HYD ( 0004)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0001):	55.20	4.210	12.50	49.11
+ ID2= 2 ( 0010):	2.33	0.167	12.58	52.74
=====				
ID = 3 ( 0004):	57.53	4.370	12.50	49.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -

ADD HYD ( 0004)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0004):	57.53	4.370	12.50	49.26
+ ID2= 2 ( 0008):	24.20	1.250	12.75	41.91
=====				



Pre-Dev V0

ID = 1 ( 0004): 81.73 5.568 12.58 47.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0002) | Area (ha)= 5.02 Curve Number (CN)= 70.3
| ID= 1 DT= 5.0 min | Ia (mm)= 8.18 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.18

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31

Pre-Dev V0

2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.662 (i)

TIME TO PEAK (hrs)= 12.333

RUNOFF VOLUME (mm)= 48.552

TOTAL RAINFALL (mm)= 108.800

RUNOFF COEFFICIENT = 0.446

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----  
Junction Command(0012)

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.66	12.33	48.55
OUTFLOW: ID= 2( 0012)	5.02	0.66	12.33	48.55

-----  
-  
=====

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL

  000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
  0  0  T    T    H  H  Y  Y  MM MM  0  0
  0  0  T    T    H  H  Y    M  M  0  0
  000  T    T    H  H  Y    M  M  000

```

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

Pre-Dev V0  
 C:\Users\rdemesa\AppData\Local\Civica\VH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \ed2219f2-2c32-4e0a-8319-cc8201f1add9\scen  
 Summary filename:  
 C:\Users\rdemesa\AppData\Local\Civica\VH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \ed2219f2-2c32-4e0a-8319-cc8201f1add9\scen

DATE: 10-18-2024

TIME: 12:17:55

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : K. 50yr 24hr 15min SCS Type I \*\*  
 \*\*\*\*\*

-----  
 | READ STORM | Filename: C:\Users\rdemesa\AppData  
 | | ata\Local\Temp\  
 | | 78041aea-46e4-4c2f-9314-125c7468a7ff\83cc3826  
 | Ptotal=120.77 mm | Comments: K. 50yr 24hr 15min SCS Type II  
 -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	2.17	12.50	17.39	18.75	2.17
0.25	1.33	6.50	2.17	12.75	8.94	19.00	2.17
0.50	1.33	6.75	2.17	13.00	8.94	19.25	2.17
0.75	1.33	7.00	2.17	13.25	6.52	19.50	2.17
1.00	1.33	7.25	2.66	13.50	6.52	19.75	2.17
1.25	1.33	7.50	2.66	13.75	5.07	20.00	2.17
1.50	1.33	7.75	2.66	14.00	5.07	20.25	1.45
1.75	1.33	8.00	2.66	14.25	3.62	20.50	1.45
2.00	1.33	8.25	3.14	14.50	3.62	20.75	1.45
2.25	1.57	8.50	3.14	14.75	3.62	21.00	1.45
2.50	1.57	8.75	3.38	15.00	3.62	21.25	1.45
2.75	1.57	9.00	3.38	15.25	3.62	21.50	1.45
3.00	1.57	9.25	3.86	15.50	3.62	21.75	1.45
3.25	1.57	9.50	3.86	15.75	3.62	22.00	1.45
3.50	1.57	9.75	4.35	16.00	3.62	22.25	1.45
3.75	1.57	10.00	4.35	16.25	2.17	22.50	1.45

Pre-Dev V0

4.00	1.57	10.25	5.56	16.50	2.17	22.75	1.45
4.25	1.93	10.50	5.56	16.75	2.17	23.00	1.45
4.50	1.93	10.75	7.49	17.00	2.17	23.25	1.45
4.75	1.93	11.00	7.49	17.25	2.17	23.50	1.45
5.00	1.93	11.25	11.59	17.50	2.17	23.75	1.45
5.25	1.93	11.50	11.59	17.75	2.17	24.00	1.45
5.50	1.93	11.75	35.75	18.00	2.17		
5.75	1.93	12.00	147.82	18.25	2.17		
6.00	1.93	12.25	17.39	18.50	2.17		

```

-----
| CALIB |
| NASHYD ( 0001) | Area (ha)= 55.20 Curve Number (CN)= 70.6
| ID= 1 DT= 5.0 min | Ia (mm)= 8.09 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.41 |

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45

Pre-Dev V0

2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 5.142

Pre-Dev V0

PEAK FLOW (cms)= 5.009 (i)  
 TIME TO PEAK (hrs)= 12.500  
 RUNOFF VOLUME (mm)= 58.115  
 TOTAL RAINFALL (mm)= 120.770  
 RUNOFF COEFFICIENT = 0.481

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| NASHYD ( 0008) | Area (ha)= 24.20 Curve Number (CN)= 64.7
| ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.55
  
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45

Pre-Dev V0

2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 1.502 (i)



Pre-Dev V0

TIME TO PEAK (hrs)= 12.667  
 RUNOFF VOLUME (mm)= 50.037  
 TOTAL RAINFALL (mm)= 120.770  
 RUNOFF COEFFICIENT = 0.414

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB					
NASHYD ( 0010)		Area (ha)=	2.33	Curve Number (CN)=	71.5
ID= 1 DT= 5.0 min		Ia (mm)=	4.74	# of Linear Res.(N)=	3.00
-----		U.H. Tp(hrs)=	0.49		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45

Pre-Dev VO

2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.197 (i)

TIME TO PEAK (hrs)= 12.583

RUNOFF VOLUME (mm)= 61.959

Pre-Dev V0

TOTAL RAINFALL (mm)= 120.770

RUNOFF COEFFICIENT = 0.513

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0004)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):		55.20	5.009	12.50	58.11
+ ID2= 2 ( 0010):		2.33	0.197	12.58	61.96
=====					
ID = 3 ( 0004):		57.53	5.199	12.50	58.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0004)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):		57.53	5.199	12.50	58.27
+ ID2= 2 ( 0008):		24.20	1.502	12.67	50.04
=====					
ID = 1 ( 0004):		81.73	6.632	12.58	55.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

CALIB		Area	(ha)=	5.02	Curve Number (CN)=	70.3
NASHYD ( 0002)		Ia	(mm)=	8.18	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min		U.H. Tp(hrs)=		0.18		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17

0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45

Pre-Dev V0

4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.786 (i)

TIME TO PEAK (hrs)= 12.333

RUNOFF VOLUME (mm)= 57.482

TOTAL RAINFALL (mm)= 120.770

RUNOFF COEFFICIENT = 0.476

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
Junction Command(0012)

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.79	12.33	57.48
OUTFLOW: ID= 2( 0012)	5.02	0.79	12.33	57.48

-----  
-  
=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VW I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\9a725dca-2dbe-4b32-9f93-d0722af3842d\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\9a725dca-2dbe-4b32-9f93-d0722af3842d\scen

DATE: 10-18-2024

TIME: 12:17:55

USER:

COMMENTS: \_\_\_\_\_

-----  
-----

\*\*\*\*\*  
\*\* SIMULATION : L. 100yr 24hr 15min SCS Type \*\*  
\*\*\*\*\*

```

-----
|   READ STORM   |   Filename: C:\Users\rdemesa\AppData
|               |               ata\Local\Temp\
|               |
|               |   78041aea-46e4-4c2f-9314-125c7468a7ff\19444fb3
| Ptotal=132.74 mm |   Comments: L. 100yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	2.39	12.50	19.11	18.75	2.39
0.25	1.46	6.50	2.39	12.75	9.82	19.00	2.39
0.50	1.46	6.75	2.39	13.00	9.82	19.25	2.39
0.75	1.46	7.00	2.39	13.25	7.17	19.50	2.39
1.00	1.46	7.25	2.92	13.50	7.17	19.75	2.39
1.25	1.46	7.50	2.92	13.75	5.58	20.00	2.39
1.50	1.46	7.75	2.92	14.00	5.58	20.25	1.59
1.75	1.46	8.00	2.92	14.25	3.98	20.50	1.59
2.00	1.46	8.25	3.45	14.50	3.98	20.75	1.59
2.25	1.73	8.50	3.45	14.75	3.98	21.00	1.59
2.50	1.73	8.75	3.72	15.00	3.98	21.25	1.59
2.75	1.73	9.00	3.72	15.25	3.98	21.50	1.59
3.00	1.73	9.25	4.25	15.50	3.98	21.75	1.59
3.25	1.73	9.50	4.25	15.75	3.98	22.00	1.59
3.50	1.73	9.75	4.78	16.00	3.98	22.25	1.59
3.75	1.73	10.00	4.78	16.25	2.39	22.50	1.59
4.00	1.73	10.25	6.11	16.50	2.39	22.75	1.59
4.25	2.12	10.50	6.11	16.75	2.39	23.00	1.59
4.50	2.12	10.75	8.23	17.00	2.39	23.25	1.59
4.75	2.12	11.00	8.23	17.25	2.39	23.50	1.59
5.00	2.12	11.25	12.74	17.50	2.39	23.75	1.59
5.25	2.12	11.50	12.74	17.75	2.39	24.00	1.59
5.50	2.12	11.75	39.29	18.00	2.39		
5.75	2.12	12.00	162.47	18.25	2.39		
6.00	2.12	12.25	19.11	18.50	2.39		

-----  
-

```

-----
| CALIB          |
| NASHYD ( 0001) |   Area      (ha)= 55.20   Curve Number (CN)= 70.6
| ID= 1 DT= 5.0 min |   Ia        (mm)=  8.09   # of Linear Res.(N)= 3.00
|               |   U.H. Tp(hrs)=  0.41
-----

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59



Pre-Dev VO

4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 5.838 (i)  
 TIME TO PEAK (hrs)= 12.500  
 RUNOFF VOLUME (mm)= 67.424  
 TOTAL RAINFALL (mm)= 132.740  
 RUNOFF COEFFICIENT = 0.508

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD ( 0008)	Area (ha)= 24.20	Curve Number (CN)= 64.7	
ID= 1 DT= 5.0 min	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.55		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59

Pre-Dev VO

4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 1.766 (i)  
 TIME TO PEAK (hrs)= 12.667  
 RUNOFF VOLUME (mm)= 58.512  
 TOTAL RAINFALL (mm)= 132.740  
 RUNOFF COEFFICIENT = 0.441

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB			
NASHYD (0010)	Area (ha)=	2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.49	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39

0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59

Pre-Dev V0

4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.228 (i)  
 TIME TO PEAK (hrs)= 12.583  
 RUNOFF VOLUME (mm)= 71.465  
 TOTAL RAINFALL (mm)= 132.740  
 RUNOFF COEFFICIENT = 0.538

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

ADD HYD ( 0004)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	55.20	5.838	12.50	67.42
+ ID2= 2 ( 0010):	2.33	0.228	12.58	71.47
=====				
ID = 3 ( 0004):	57.53	6.057	12.50	67.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -  
 -----

Pre-Dev V0

ADD HYD ( 0004)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0004):	57.53	6.057	12.50	67.59
+ ID2= 2 ( 0008):	24.20	1.766	12.67	58.51
=====				
ID = 1 ( 0004):	81.73	7.737	12.58	64.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	5.02	Curve Number	(CN)=	70.3
NASHYD ( 0002)	Ia	(mm)=	8.18	# of Linear Res.(N)=	3.00	
ID= 1 DT= 5.0 min	U.H. Tp	(hrs)=	0.18			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59

Pre-Dev VO

2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.913 (i)

Pre-Dev V0

TIME TO PEAK (hrs)= 12.333  
RUNOFF VOLUME (mm)= 66.722  
TOTAL RAINFALL (mm)= 132.740  
RUNOFF COEFFICIENT = 0.503

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----  
Junction Command(0012)

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.91	12.33	66.72
OUTFLOW: ID= 2( 0012)	5.02	0.91	12.33	66.72

-----  
-  
FINISH  
=====



Pre-Dev V0 Hazel

=====

```

V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
V   V   I   SS     U   U   A A  L
V   V   I     SS   U   U  AAAAA L
V   V   I     SS   U   U  A   A  L
  WV    I   SSSSS  UUUUU  A   A  LLLLL

```

```

000  TTTTT  TTTTT  H   H  Y   Y  M   M  000  TM
0  0  T     T   H   H  Y  Y  MM  MM  0  0
0  0  T     T   H   H   Y   M   M  0  0
000  T     T   H   H   Y   M   M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \17df51b8-afed-4072-be76-5ecb3221b15d\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \17df51b8-afed-4072-be76-5ecb3221b15d\scen

DATE: 10-18-2024

TIME: 12:19:04

USER:

COMMENTS: \_\_\_\_\_

-----

```

*****
** SIMULATION : Hazel           **
*****

```

-----

| READ STORM | Filename: C:\Users\rdemesa\AppData

Pre-Dev VO Hazel

ata\Local\Temp\

6d7f2bfb-b4f3-46eb-ae01-f53800c2b05c\ecf23fba

Ptotal=222.76 mm | Comments: Hazel

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	7.00	18.94	14.00	7.80	21.00	1.11
1.00	1.11	8.00	18.94	15.00	4.46	22.00	1.11
2.00	1.11	9.00	51.24	16.00	4.46	23.00	1.11
3.00	1.11	10.00	51.24	17.00	2.23	24.00	1.11
4.00	1.11	11.00	14.48	18.00	2.23		
5.00	6.68	12.00	14.48	19.00	1.11		
6.00	6.68	13.00	7.80	20.00	1.11		

CALIB			
NASHYD ( 0001)	Area (ha)=	55.20	Curve Number (CN)= 85.0
ID= 1 DT= 5.0 min	Ia (mm)=	8.09	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.41	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11

Pre-Dev VO Hazel

1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11

Pre-Dev VO Hazel

5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Unit Hyd Qpeak (cms)= 5.142

PEAK FLOW (cms)= 7.243 (i)  
 TIME TO PEAK (hrs)= 11.000  
 RUNOFF VOLUME (mm)= 177.570  
 TOTAL RAINFALL (mm)= 222.760  
 RUNOFF COEFFICIENT = 0.797

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB		Area (ha)=	24.20	Curve Number (CN)=	81.0
NASHYD ( 0008)		Ia (mm)=	8.80	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min		U.H. Tp(hrs)=	0.55		

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11

Pre-Dev VO Hazel

1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11

Pre-Dev VO Hazel

5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 2.959 (i)  
 TIME TO PEAK (hrs)= 11.083  
 RUNOFF VOLUME (mm)= 167.352  
 TOTAL RAINFALL (mm)= 222.760  
 RUNOFF COEFFICIENT = 0.751

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB			
NASHYD ( 0010)			
ID= 1	DT= 5.0 min	Area (ha)= 2.33	Curve Number (CN)= 85.0
		Ia (mm)= 4.74	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.49	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11

Pre-Dev VO Hazel

1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11

Pre-Dev VO Hazel

5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.303 (i)  
 TIME TO PEAK (hrs)= 11.000  
 RUNOFF VOLUME (mm)= 180.831  
 TOTAL RAINFALL (mm)= 222.760  
 RUNOFF COEFFICIENT = 0.812

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0004) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	55.20	7.243	11.00	177.57
+ ID2= 2 ( 0010):	2.33	0.303	11.00	180.83
=====				
ID = 3 ( 0004):	57.53	7.546	11.00	177.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0004) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0004):	57.53	7.546	11.00	177.70
+ ID2= 2 ( 0008):	24.20	2.959	11.08	167.35
=====				
ID = 1 ( 0004):	81.73	10.499	11.00	174.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0002) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	5.02	Curve Number (CN)=	84.0
Ia (mm)=	8.18	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.18		



NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11
1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11

Pre-Dev VO Hazel

3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11
5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Unit Hyd Qpeak (cms)= 1.065

PEAK FLOW (cms)= 0.664 (i)

TIME TO PEAK (hrs)= 11.000

RUNOFF VOLUME (mm)= 174.600

TOTAL RAINFALL (mm)= 222.760

RUNOFF COEFFICIENT = 0.784

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | Junction Command(0012) |

Pre-Dev V0 Hazel

-----

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2( 0002)	5.02	0.66	11.00	174.60
OUTFLOW: ID= 2( 0012)	5.02	0.66	11.00	174.60

-----

-

Post-Dev V0

=====

```

V   V   I   SSSSS U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A  L
  WV    I   SSSSS UUUUU A   A  LLLLL

```

```

000   TTTTT TTTTT H   H   Y   Y   M   M   000   TM
0   0   T     T   H   H   Y   Y   MM  MM  0   0
0   0   T     T   H   H   Y     M   M  0   0
000   T     T   H   H   Y     M   M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \d00ef13d-0ee9-42f5-a681-7be8056b449b\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \d00ef13d-0ee9-42f5-a681-7be8056b449b\scen

DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

-----

```

*****
** SIMULATION : 25mm          **
*****

```

-----

| READ STORM | Filename: C:\Users\rdemesa\AppData

Post-Dev V0

ata\Local\Temp\

77c03063-8c4f-41dc-868b-881b05d4a065\969e4075

Ptotal= 12.00 mm | Comments: 25mm

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	1.58	0.00	3.17	0.00	4.75	0.72
0.08	0.00	1.67	0.00	3.25	5.04	4.83	0.00
0.17	0.00	1.75	12.24	3.33	0.00	4.92	0.00
0.25	0.72	1.83	0.00	3.42	0.00	5.00	0.72
0.33	0.00	1.92	0.00	3.50	5.04	5.08	0.00
0.42	0.00	2.00	12.24	3.58	0.00	5.17	0.00
0.50	0.72	2.08	0.00	3.67	0.00	5.25	0.72
0.58	0.00	2.17	0.00	3.75	2.88	5.33	0.00
0.67	0.00	2.25	33.12	3.83	0.00	5.42	0.00
0.75	0.72	2.33	0.00	3.92	0.00	5.50	0.72
0.83	0.00	2.42	0.00	4.00	2.88	5.58	0.00
0.92	0.00	2.50	33.12	4.08	0.00	5.67	0.00
1.00	0.72	2.58	0.00	4.17	0.00	5.75	0.72
1.08	0.00	2.67	0.00	4.25	1.44	5.83	0.00
1.17	0.00	2.75	9.36	4.33	0.00	5.92	0.00
1.25	4.32	2.83	0.00	4.42	0.00	6.00	0.72
1.33	0.00	2.92	0.00	4.50	1.44		
1.42	0.00	3.00	9.36	4.58	0.00		
1.50	4.32	3.08	0.00	4.67	0.00		

-----

CALIB	Area (ha)=	24.20	Curve Number (CN)=	64.7
NASHYD ( 0009)	Ia (mm)=	8.80	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.55		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.002 (i)

TIME TO PEAK (hrs)= 4.250

RUNOFF VOLUME (mm)= 0.072

TOTAL RAINFALL (mm)= 12.000

RUNOFF COEFFICIENT = 0.006

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

Post-Dev V0

CALIB			
NASHYD ( 0013)	Area (ha)=	2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.49	

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.002 (i)  
TIME TO PEAK (hrs)= 3.417  
RUNOFF VOLUME (mm)= 0.485  
TOTAL RAINFALL (mm)= 12.000  
RUNOFF COEFFICIENT = 0.040

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---

CALIB			
NASHYD ( 0023)	Area (ha)=	6.14	Curve Number (CN)= 55.0
ID= 1 DT= 5.0 min	Ia (mm)=	13.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.53	

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.000 (i)  
TIME TO PEAK (hrs)= 0.000  
RUNOFF VOLUME (mm)= 0.000  
TOTAL RAINFALL (mm)= 12.000  
RUNOFF COEFFICIENT = 0.000

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---

CALIB			
STANDHYD ( 0001)	Area (ha)=	5.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.80	Dir. Conn.(%)= 61.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.63	1.57
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	186.19	20.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	16.56	0.79
over (min)	10.00	45.00
Storage Coeff. (min)=	9.38 (ii)	41.74 (ii)

Post-Dev V0

Unit Hyd. Tpeak (min)=	10.00	45.00	
Unit Hyd. peak (cms)=	0.12	0.03	
			*TOTALS*
PEAK FLOW (cms)=	0.12	0.00	0.123 (iii)
TIME TO PEAK (hrs)=	2.67	3.50	2.67
RUNOFF VOLUME (mm)=	11.00	0.67	7.02
TOTAL RAINFALL (mm)=	12.00	12.00	12.00
RUNOFF COEFFICIENT =	0.92	0.06	0.58

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	
STANDHYD ( 0007)	Area (ha)= 1.73
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.87	0.87	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	107.39	30.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	33.12	0.25	
over (min)	5.00	75.00	
Storage Coeff. (min)=	5.11 (ii)	70.57 (ii)	
Unit Hyd. Tpeak (min)=	5.00	75.00	
Unit Hyd. peak (cms)=	0.21	0.02	
			*TOTALS*
PEAK FLOW (cms)=	0.05	0.00	0.052 (iii)
TIME TO PEAK (hrs)=	2.58	4.25	2.58
RUNOFF VOLUME (mm)=	11.00	0.40	5.68
TOTAL RAINFALL (mm)=	12.00	12.00	12.00
RUNOFF COEFFICIENT =	0.92	0.03	0.47

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

Post-Dev V0

```

-----
| CALIB |
| STANDHYD ( 0014) | Area (ha)= 14.40
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.70 Dir. Conn.(%)= 79.30
-----

```

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	11.76	2.64	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	0.50	2.00	
Length	(m)=	309.84	30.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		11.04	0.40	
over (min)		15.00	70.00	
Storage Coeff. (min)=		14.97 (ii)	68.77 (ii)	
Unit Hyd. Tpeak (min)=		15.00	70.00	
Unit Hyd. peak (cms)=		0.08	0.02	
				*TOTALS*
PEAK FLOW (cms)=		0.33	0.00	0.333 (iii)
TIME TO PEAK (hrs)=		2.75	4.17	2.75
RUNOFF VOLUME (mm)=		11.00	0.53	8.83
TOTAL RAINFALL (mm)=		12.00	12.00	12.00
RUNOFF COEFFICIENT =		0.92	0.04	0.74

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0020) |
| 1 + 2 = 3 |
-----

```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	0.123	2.67	7.02
+ ID2= 2 ( 0014):	14.40	0.333	2.75	8.83
=====				
ID = 3 ( 0020):	19.60	0.419	2.67	8.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0020) |

```



Post-Dev V0

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0020):	19.60	0.419	2.67	8.35
+ ID2= 2 ( 0007):	1.73	0.052	2.58	5.68
=====				
ID = 1 ( 0020):	21.33	0.439	2.67	8.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0010)  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5160	0.8710
0.0000	0.0690	0.6160	0.9610
0.0280	0.1400	0.7220	1.0540
0.0400	0.2140	0.8340	1.1480
0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	0.439	2.67	8.13
OUTFLOW: ID= 1 ( 0010)	21.330	0.029	4.58	4.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.64  
 TIME SHIFT OF PEAK FLOW (min)=115.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1471

CALIB  
STANDHYD ( 0016)  
ID= 1 DT= 5.0 min

Area (ha)= 2.64  
Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	16.56	0.25

Post-Dev V0

over (min)	10.00	75.00	
Storage Coeff. (min)=	7.65 (ii)	73.12 (ii)	
Unit Hyd. Tpeak (min)=	10.00	75.00	
Unit Hyd. peak (cms)=	0.13	0.02	
			*TOTALS*
PEAK FLOW (cms)=	0.05	0.00	0.054 (iii)
TIME TO PEAK (hrs)=	2.67	4.25	2.67
RUNOFF VOLUME (mm)=	11.00	0.40	5.69
TOTAL RAINFALL (mm)=	12.00	12.00	12.00
RUNOFF COEFFICIENT =	0.92	0.03	0.47

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB	
STANDHYD ( 0021)	Area (ha)= 30.00
ID= 1 DT= 5.0 min	Total Imp(%)= 77.00 Dir. Conn.(%)= 76.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	23.10	6.90	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	447.21	20.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	11.04	0.72	
over (min)	15.00	25.00	
Storage Coeff. (min)=	18.65 (ii)	23.15 (ii)	
Unit Hyd. Tpeak (min)=	15.00	25.00	
Unit Hyd. peak (cms)=	0.06	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.62	0.00	0.623 (iii)
TIME TO PEAK (hrs)=	2.75	3.17	2.75
RUNOFF VOLUME (mm)=	11.00	0.45	8.47
TOTAL RAINFALL (mm)=	12.00	12.00	12.00
RUNOFF COEFFICIENT =	0.92	0.04	0.71

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

-----  
-

ADD HYD ( 0018)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0016):	2.64	0.054	2.67	5.69
+ ID2= 2 ( 0021):	30.00	0.623	2.75	8.47
=====				
ID = 3 ( 0018):	32.64	0.651	2.75	8.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

RESERVOIR( 0019)	OVERFLOW IS OFF			
IN= 2---> OUT= 1	OUTFLOW	STORAGE	OUTFLOW	STORAGE
DT= 5.0 min	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.3280	1.2260
	0.0070	0.1100	0.4140	1.3640
	0.0240	0.2220	0.5060	1.5040
	0.0330	0.3380	0.6050	1.6470
	0.0400	0.4570	0.7100	1.7930
	0.0460	0.5780	0.8210	1.9410
	0.0740	0.7030	0.9370	2.0920
	0.1220	0.8300	1.0580	2.2450
	0.1810	0.9590	1.1840	2.4020
	0.2500	1.0910	1.3150	2.5610

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0018)	32.640	0.651	2.75	8.24
OUTFLOW: ID= 1 ( 0019)	32.640	0.025	5.08	8.09

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.90  
 TIME SHIFT OF PEAK FLOW (min)=140.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.2400

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0010):	21.33	0.029	4.58	4.87
+ ID2= 2 ( 0013):	2.33	0.002	3.42	0.49

Post-Dev V0

```

=====
ID = 3 ( 0022):    23.66    0.030    4.33    4.44

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0022) |
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 0022):    23.66    0.030    4.33    4.44
+ ID2= 2 ( 0019):    32.64    0.025    5.08    8.09
=====
ID = 1 ( 0022):    56.30    0.055    4.58    6.56

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0022) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0022):    56.30    0.055    4.58    6.56
+ ID2= 2 ( 0023):     6.14    0.000    0.00    0.00
=====
ID = 3 ( 0022):    62.44    0.055    4.58    5.91

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0022) |
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 0022):    62.44    0.055    4.58    5.91
+ ID2= 2 ( 0009):    24.20    0.002    4.25    0.07
=====
ID = 1 ( 0022):    86.64    0.057    4.42    4.28

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A  L

```

Post-Dev V0

V V I SS U U AAAAA L  
V V I SS U U A A L  
WV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\VH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\eeb53a3d-e628-4f79-8468-45f9132ff6a2\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\VH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\eeb53a3d-e628-4f79-8468-45f9132ff6a2\scen

DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : A. 2yr 3hr 10min Chicago \*\*  
\*\*\*\*\*

-----  
| CHICAGO STORM |  
Ptotal= 32.13 mm

IDF curve parameters: A= 404.147  
B= 0.000  
C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs  
Storm time step = 10.00 min  
Time to peak ratio = 0.33

Post-Dev V0

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.76	0.83	80.82	1.67	5.83	2.50	3.63
0.17	4.42	1.00	17.11	1.83	5.15	2.67	3.39
0.33	5.48	1.17	10.79	2.00	4.63	2.83	3.20
0.50	7.50	1.33	8.23	2.17	4.23		
0.67	13.95	1.50	6.78	2.33	3.90		

-----  
-

CALIB			
NASHYD ( 0009)	Area (ha)=	24.20	Curve Number (CN)= 64.7
ID= 1 DT= 5.0 min	Ia (mm)=	8.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.55	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.112 (i)

TIME TO PEAK (hrs)= 1.833

RUNOFF VOLUME (mm)= 3.362

TOTAL RAINFALL (mm)= 32.132

RUNOFF COEFFICIENT = 0.105

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
NASHYD ( 0013)	Area (ha)=	2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)= 3.00

Post-Dev V0

----- U.H. Tp(hrs)= 0.49

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.022 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 5.832  
 TOTAL RAINFALL (mm)= 32.132  
 RUNOFF COEFFICIENT = 0.182

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	Area (ha)= 6.14	Curve Number (CN)= 55.0
NASHYD ( 0023)	Ia (mm)= 13.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.53	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20

Post-Dev V0

0.750 13.95 | 1.500 8.23 | 2.250 4.23 | 3.00 3.20

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.013 (i)

TIME TO PEAK (hrs)= 2.083

RUNOFF VOLUME (mm)= 1.613

TOTAL RAINFALL (mm)= 32.132

RUNOFF COEFFICIENT = 0.050

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
STANDHYD ( 0001)	Area (ha)=	5.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.80	Dir. Conn.(%)= 61.50

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.63	1.57
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	186.19	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Max.Eff.Inten.(mm/hr)=	80.82	16.98
over (min)	5.00	10.00
Storage Coeff. (min)=	4.97 (ii)	8.79 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.22	0.12

\*TOTALS\*

PEAK FLOW (cms)=	0.64	0.05	0.673 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00



Post-Dev V0

RUNOFF VOLUME (mm)=	31.13	6.76	21.75
TOTAL RAINFALL (mm)=	32.13	32.13	32.13
RUNOFF COEFFICIENT =	0.97	0.21	0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB	Area (ha)=	1.73	
STANDHYD ( 0007)	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00
ID= 1 DT= 5.0 min			

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.87	0.87	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	0.50	2.00	
Length (m)=	107.39	30.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Max.Eff.Inten.(mm/hr)=	80.82	6.72
over (min)	5.00	25.00
Storage Coeff. (min)=	3.57 (ii)	21.06 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.26	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.18	0.01	0.186 (iii)
TIME TO PEAK (hrs)=	1.00	1.33	1.00

Post-Dev V0

RUNOFF VOLUME	(mm)=	31.13	5.21	18.16
TOTAL RAINFALL	(mm)=	32.13	32.13	32.13
RUNOFF COEFFICIENT	=	0.97	0.16	0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB				
STANDHYD ( 0014)		Area (ha)=	14.40	
ID= 1 DT= 5.0 min		Total Imp(%)=	81.70	Dir. Conn.(%)= 79.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	11.76	2.64
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	309.84	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Max.Eff.Inten.(mm/hr)=		80.82	12.88
over (min)		5.00	15.00
Storage Coeff. (min)=		6.75 (ii)	10.35 (ii)
Unit Hyd. Tpeak (min)=		5.00	15.00
Unit Hyd. peak (cms)=		0.18	0.09

\*TOTALS\*

PEAK FLOW	(cms)=	2.07	0.06	2.093 (iii)
TIME TO PEAK	(hrs)=	1.00	1.17	1.00

Post-Dev V0

RUNOFF VOLUME	(mm)=	31.13	5.97	25.92
TOTAL RAINFALL	(mm)=	32.13	32.13	32.13
RUNOFF COEFFICIENT	=	0.97	0.19	0.81

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0020)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	0.673	1.00	21.75
+ ID2= 2 ( 0014):	14.40	2.093	1.00	25.92
=====				
ID = 3 ( 0020):	19.60	2.766	1.00	24.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0020)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	2.766	1.00	24.82
+ ID2= 2 ( 0007):	1.73	0.186	1.00	18.16
=====				
ID = 1 ( 0020):	21.33	2.952	1.00	24.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

RESERVOIR( 0010)				
IN= 2---> OUT= 1				
DT= 5.0 min				
-----				
OVERFLOW IS OFF				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.5160	0.8710
	0.0000	0.0690	0.6160	0.9610
	0.0280	0.1400	0.7220	1.0540
	0.0400	0.2140	0.8340	1.1480
	0.0720	0.2900	0.9510	1.2440
	0.1220	0.4510	1.0730	1.3430

Post-Dev V0

0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	2.952	1.00	24.28
OUTFLOW: ID= 1 ( 0010)	21.330	0.118	3.08	21.01

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.98  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.4375

-----  
 -

CALIB	Area (ha)= 2.64	
STANDHYD ( 0016)	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00
ID= 1 DT= 5.0 min		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Max.Eff.Inten.(mm/hr)=	80.82	6.72
over (min)	5.00	25.00
Storage Coeff. (min)=	4.06 (ii)	21.55 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.24	0.05

\*TOTALS\*

Post-Dev V0

PEAK FLOW	(cms)=	0.28	0.01	0.278 (iii)
TIME TO PEAK	(hrs)=	1.00	1.33	1.00
RUNOFF VOLUME	(mm)=	31.13	5.21	18.17
TOTAL RAINFALL	(mm)=	32.13	32.13	32.13
RUNOFF COEFFICIENT	=	0.97	0.16	0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB				
STANDHYD ( 0021)		Area (ha)=	30.00	
ID= 1 DT= 5.0 min		Total Imp(%)=	77.00	Dir. Conn.(%)= 76.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	23.10	6.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	447.21	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Max.Eff.Inten.(mm/hr)=		80.82	10.61
over (min)		10.00	15.00
Storage Coeff. (min)=		8.41 (ii)	11.56 (ii)
Unit Hyd. Tpeak (min)=		10.00	15.00
Unit Hyd. peak (cms)=		0.12	0.09

\*TOTALS\*

Post-Dev V0

PEAK FLOW	(cms)=	3.29	0.12	3.379 (iii)
TIME TO PEAK	(hrs)=	1.08	1.17	1.08
RUNOFF VOLUME	(mm)=	31.13	5.47	24.97
TOTAL RAINFALL	(mm)=	32.13	32.13	32.13
RUNOFF COEFFICIENT	=	0.97	0.17	0.78

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0018)				
1 + 2 = 3				
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0016):	2.64	0.278	1.00	18.17
+ ID2= 2 ( 0021):	30.00	3.379	1.08	24.97
=====				
ID = 3 ( 0018):	32.64	3.509	1.08	24.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

RESERVOIR( 0019)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min				
-----				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.3280	1.2260
	0.0070	0.1100	0.4140	1.3640
	0.0240	0.2220	0.5060	1.5040
	0.0330	0.3380	0.6050	1.6470
	0.0400	0.4570	0.7100	1.7930
	0.0460	0.5780	0.8210	1.9410
	0.0740	0.7030	0.9370	2.0920
	0.1220	0.8300	1.0580	2.2450
	0.1810	0.9590	1.1840	2.4020
	0.2500	1.0910	1.3150	2.5610
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0018)	32.640	3.509	1.08	24.42
OUTFLOW: ID= 1 ( 0019)	32.640	0.089	3.25	24.12

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.53

Post-Dev V0

TIME SHIFT OF PEAK FLOW (min)=130.00  
MAXIMUM STORAGE USED (ha.m.)= 0.7422

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0010):	21.33	0.118	3.08	21.01
+ ID2= 2 ( 0013):	2.33	0.022	1.58	5.83
=====				
ID = 3 ( 0022):	23.66	0.128	3.00	19.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	23.66	0.128	3.00	19.52
+ ID2= 2 ( 0019):	32.64	0.089	3.25	24.12
=====				
ID = 1 ( 0022):	56.30	0.215	3.08	22.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0022):	56.30	0.215	3.08	22.18
+ ID2= 2 ( 0023):	6.14	0.013	2.08	1.61
=====				
ID = 3 ( 0022):	62.44	0.225	3.08	20.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	62.44	0.225	3.08	20.16

Post-Dev V0

+ ID2= 2 ( 0009): 24.20 0.112 1.83 3.36

=====
ID = 1 ( 0022): 86.64 0.312 2.08 15.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----
-
=====
=====

V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VW I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2022 Smart City Water Inc
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff
\212f4ef6-7d3b-4222-984a-ac73bfec0c84\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff
\212f4ef6-7d3b-4222-984a-ac73bfec0c84\scen

DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

-----
-----
\*\*\*\*\*



Post-Dev VO

\*\* SIMULATION : B. 5yr 3hr 10min Chicago \*\*

\*\*\*\*\*

```

-----
| CHICAGO STORM |
| Ptotal= 42.56 mm |
-----

```

IDF curve parameters: A= 535.364  
 B= 0.000  
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs  
 Storm time step = 10.00 min  
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.98	0.83	107.07	1.67	7.72	2.50	4.80
0.17	5.86	1.00	22.67	1.83	6.82	2.67	4.50
0.33	7.26	1.17	14.30	2.00	6.14	2.83	4.24
0.50	9.93	1.33	10.90	2.17	5.60		
0.67	18.47	1.50	8.98	2.33	5.16		

```

-----
| CALIB |
| NASHYD ( 0009) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)= 24.20 Curve Number (CN)= 64.7  
 Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.232 (i)

TIME TO PEAK (hrs)= 1.750

Post-Dev V0

RUNOFF VOLUME (mm)= 6.615  
TOTAL RAINFALL (mm)= 42.565  
RUNOFF COEFFICIENT = 0.155

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
NASHYD ( 0013)		Area (ha)= 2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min		Ia (mm)= 4.74	# of Linear Res.(N)= 3.00
-----		U.H. Tp(hrs)= 0.49	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.040 (i)  
TIME TO PEAK (hrs)= 1.583  
RUNOFF VOLUME (mm)= 10.287  
TOTAL RAINFALL (mm)= 42.565  
RUNOFF COEFFICIENT = 0.242

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
NASHYD ( 0023)		Area (ha)= 6.14	Curve Number (CN)= 55.0
ID= 1 DT= 5.0 min		Ia (mm)= 13.00	# of Linear Res.(N)= 3.00
-----		U.H. Tp(hrs)= 0.53	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.031 (i)  
 TIME TO PEAK (hrs)= 1.833  
 RUNOFF VOLUME (mm)= 3.682  
 TOTAL RAINFALL (mm)= 42.565  
 RUNOFF COEFFICIENT = 0.086

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	Area (ha)= 5.20
STANDHYD ( 0001)	Total Imp(%)= 69.80 Dir. Conn.(%)= 61.50
ID= 1 DT= 5.0 min	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.63	1.57
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	186.19	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50

Post-Dev V0

0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Max.Eff.Inten.(mm/hr)=	107.07	31.11
over (min)	5.00	10.00
Storage Coeff. (min)=	4.44 (ii)	7.85 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.23	0.13

\*TOTALS\*

PEAK FLOW (cms)=	0.87	0.10	0.939 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	41.56	11.65	30.05
TOTAL RAINFALL (mm)=	42.56	42.56	42.56
RUNOFF COEFFICIENT =	0.98	0.27	0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	Area (ha)= 1.73
STANDHYD ( 0007)	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00
ID= 1 DT= 5.0 min	

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.87	0.87
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	107.39	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50

Post-Dev V0

0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Max.Eff.Inten.(mm/hr)=	107.07	14.54
over (min)	5.00	20.00
Storage Coeff. (min)=	3.19 (ii)	16.04 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.27	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.25	0.02	0.254 (iii)
TIME TO PEAK (hrs)=	1.00	1.25	1.00
RUNOFF VOLUME (mm)=	41.56	9.30	25.43
TOTAL RAINFALL (mm)=	42.56	42.56	42.56
RUNOFF COEFFICIENT =	0.98	0.22	0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	Area (ha)= 14.40
STANDHYD ( 0014)	Total Imp(%)= 81.70 Dir. Conn.(%)= 79.30
ID= 1 DT= 5.0 min	

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.76	2.64
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	309.84	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50

Post-Dev V0

0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Max.Eff.Inten.(mm/hr)=	107.07	24.21
over (min)	5.00	10.00
Storage Coeff. (min)=	6.03 (ii)	9.25 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.19	0.12

			*TOTALS*
PEAK FLOW (cms)=	2.85	0.12	2.934 (iii)
TIME TO PEAK (hrs)=	1.00	1.00	1.00
RUNOFF VOLUME (mm)=	41.56	10.47	35.13
TOTAL RAINFALL (mm)=	42.56	42.56	42.56
RUNOFF COEFFICIENT =	0.98	0.25	0.83

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| ADD HYD ( 0020) |
| 1 + 2 = 3      |
-----

```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	0.939	1.00	30.05
+ ID2= 2 ( 0014):	14.40	2.934	1.00	35.13
=====				
ID = 3 ( 0020):	19.60	3.873	1.00	33.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0020) |
| 3 + 2 = 1      |
-----

```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	3.873	1.00	33.78
+ ID2= 2 ( 0007):	1.73	0.254	1.00	25.43
=====				
ID = 1 ( 0020):	21.33	4.127	1.00	33.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Post-Dev V0

```

-----
| RESERVOIR( 0010) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
-----
  
```

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5160	0.8710
0.0000	0.0690	0.6160	0.9610
0.0280	0.1400	0.7220	1.0540
0.0400	0.2140	0.8340	1.1480
0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	4.127	1.00	33.10
OUTFLOW: ID= 1 ( 0010)	21.330	0.215	3.00	29.84

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.21  
 TIME SHIFT OF PEAK FLOW (min)=120.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.5670

```

-----
| CALIB          |
| STANDHYD ( 0016) |
| ID= 1 DT= 5.0 min |
-----
  
```

Area (ha)= 2.64  
 Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80

Post-Dev V0

0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Max.Eff.Inten.(mm/hr)=	107.07	14.54
over (min)	5.00	20.00
Storage Coeff. (min)=	3.63 (ii)	16.47 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.25	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.37	0.03	0.381 (iii)
TIME TO PEAK (hrs)=	1.00	1.25	1.00
RUNOFF VOLUME (mm)=	41.56	9.30	25.43
TOTAL RAINFALL (mm)=	42.56	42.56	42.56
RUNOFF COEFFICIENT =	0.98	0.22	0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
STANDHYD ( 0021)	Area (ha)=	30.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	77.00	Dir. Conn.(%)= 76.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	23.10	6.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	447.21	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80



Post-Dev V0

0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Max.Eff.Inten.(mm/hr)=	107.07	20.33
over (min)	10.00	15.00
Storage Coeff. (min)=	7.52 (ii)	10.33 (ii)
Unit Hyd. Tpeak (min)=	10.00	15.00
Unit Hyd. peak (cms)=	0.13	0.09

\*TOTALS\*

PEAK FLOW (cms)=	4.51	0.23	4.693 (iii)
TIME TO PEAK (hrs)=	1.08	1.17	1.08
RUNOFF VOLUME (mm)=	41.56	9.70	33.92
TOTAL RAINFALL (mm)=	42.56	42.56	42.56
RUNOFF COEFFICIENT =	0.98	0.23	0.80

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0018)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0016):	2.64	0.381	1.00	25.43
+ ID2= 2 ( 0021):	30.00	4.693	1.08	33.92
=====				
ID = 3 ( 0018):	32.64	4.875	1.00	33.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0019)	OVERFLOW IS OFF			
IN= 2---> OUT= 1	OUTFLOW		STORAGE	
DT= 5.0 min	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.3280	1.2260
	0.0070	0.1100	0.4140	1.3640
	0.0240	0.2220	0.5060	1.5040
	0.0330	0.3380	0.6050	1.6470
	0.0400	0.4570	0.7100	1.7930

Post-Dev V0

0.0460	0.5780		0.8210	1.9410
0.0740	0.7030		0.9370	2.0920
0.1220	0.8300		1.0580	2.2450
0.1810	0.9590		1.1840	2.4020
0.2500	1.0910		1.3150	2.5610

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0018)	32.640	4.875	1.00	33.23
OUTFLOW: ID= 1 ( 0019)	32.640	0.188	3.17	32.89

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.86  
TIME SHIFT OF PEAK FLOW (min)=130.00  
MAXIMUM STORAGE USED (ha.m.)= 0.9730

-----  
-

ADD HYD ( 0022)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0010):	21.33	0.215	3.00	29.84
+ ID2= 2 ( 0013):	2.33	0.040	1.58	10.29
=====				
ID = 3 ( 0022):	23.66	0.234	2.58	27.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0022):	23.66	0.234	2.58	27.91
+ ID2= 2 ( 0019):	32.64	0.188	3.17	32.89
=====				
ID = 1 ( 0022):	56.30	0.418	3.00	30.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0022):	56.30	0.418	3.00	30.80
+ ID2= 2 ( 0023):	6.14	0.031	1.83	3.68

Post-Dev V0

=====
ID = 3 ( 0022): 62.44 0.439 3.00 28.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----
| ADD HYD ( 0022) |
3 + 2 = 1
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 ( 0022): 62.44 0.439 3.00 28.13
+ ID2= 2 ( 0009): 24.20 0.232 1.75 6.61
-----
ID = 1 ( 0022): 86.64 0.621 2.00 22.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL
000 TTTTT TTTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2022 Smart City Water Inc
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:
C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff
\8d870c82-d7f1-42c9-b4c6-667688762738\scen
Summary filename:
C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff
\8d870c82-d7f1-42c9-b4c6-667688762738\scen

Post-Dev V0  
DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : C. 10yr 3hr 10min Chicago \*\*  
\*\*\*\*\*

-----  
| CHICAGO STORM |  
Ptotal= 49.52 mm

IDF curve parameters: A= 622.842  
B= 0.000  
C= 0.699

used in: INTENSITY =  $A / (t + B)^C$

Duration of storm = 3.00 hrs  
Storm time step = 10.00 min  
Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	5.79	0.83	124.56	1.67	8.98	2.50	5.59
0.17	6.82	1.00	26.38	1.83	7.93	2.67	5.23
0.33	8.45	1.17	16.63	2.00	7.14	2.83	4.93
0.50	11.56	1.33	12.68	2.17	6.51		
0.67	21.49	1.50	10.45	2.33	6.01		

-----  
| CALIB |  
| NASHYD ( 0009) |  
ID= 1 DT= 5.0 min

Area (ha)= 24.20 Curve Number (CN)= 64.7  
Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01

Post-Dev V0

0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.331 (i)  
 TIME TO PEAK (hrs)= 1.750  
 RUNOFF VOLUME (mm)= 9.247  
 TOTAL RAINFALL (mm)= 49.520  
 RUNOFF COEFFICIENT = 0.187

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

-

CALIB					
NASHYD ( 0013)	Area (ha)=	2.33	Curve Number (CN)=	71.5	
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.49			

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.054 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 13.731  
 TOTAL RAINFALL (mm)= 49.520  
 RUNOFF COEFFICIENT = 0.277

Post-Dev V0

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
-
-----
| CALIB |
| NASHYD ( 0023) | Area (ha)= 6.14 Curve Number (CN)= 55.0
| ID= 1 DT= 5.0 min | Ia (mm)= 13.00 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.53

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.047 (i)  
 TIME TO PEAK (hrs)= 1.833  
 RUNOFF VOLUME (mm)= 5.458  
 TOTAL RAINFALL (mm)= 49.520  
 RUNOFF COEFFICIENT = 0.110

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
-
-----
| CALIB |
| STANDHYD ( 0001) | Area (ha)= 5.20
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.80 Dir. Conn.(%)= 61.50
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.63	1.57
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	186.19	20.00
Mannings n =	0.013	0.250

Post-Dev VO

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Max. Eff. Inten. (mm/hr)=	124.56	42.22
over (min)	5.00	10.00
Storage Coeff. (min)=	4.18 (ii)	7.39 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.24	0.13

\*TOTALS\*

PEAK FLOW (cms)=	1.02	0.13	1.124 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	48.52	15.39	35.76
TOTAL RAINFALL (mm)=	49.52	49.52	49.52
RUNOFF COEFFICIENT =	0.98	0.31	0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	Area (ha)=	1.73
STANDHYD ( 0007)	Total Imp(%)=	50.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	50.00

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.87	0.87
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	107.39	30.00
Mannings n =	0.013	0.250

Post-Dev VO

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Max.Eff.Inten.(mm/hr)=	124.56	20.08
over (min)	5.00	15.00
Storage Coeff. (min)=	3.01 (ii)	14.29 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.28	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.29	0.03	0.304 (iii)
TIME TO PEAK (hrs)=	1.00	1.17	1.00
RUNOFF VOLUME (mm)=	48.52	12.49	30.50
TOTAL RAINFALL (mm)=	49.52	49.52	49.52
RUNOFF COEFFICIENT =	0.98	0.25	0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	
STANDHYD ( 0014)	
ID= 1 DT= 5.0 min	

Area (ha)=	14.40
Total Imp(%)=	81.70   Dir. Conn.(%)= 79.30

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.76	2.64
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	309.84	30.00
Mannings n =	0.013	0.250



Post-Dev VO

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Max. Eff. Inten. (mm/hr)=	124.56	33.21
over (min)	5.00	10.00
Storage Coeff. (min)=	5.68 (ii)	8.70 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.20	0.12

\*TOTALS\*

PEAK FLOW (cms)=	3.38	0.16	3.501 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	48.52	13.93	41.36
TOTAL RAINFALL (mm)=	49.52	49.52	49.52
RUNOFF COEFFICIENT =	0.98	0.28	0.84

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
      THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

ADD HYD ( 0020)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0001):	5.20	1.124	1.00	35.76
+ ID2= 2 ( 0014):	14.40	3.501	1.00	41.36
=====				
ID = 3 ( 0020):	19.60	4.625	1.00	39.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Post-Dev V0

ADD HYD ( 0020)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0020):	19.60	4.625	1.00	39.87
+ ID2= 2 ( 0007):	1.73	0.304	1.00	30.50
=====				
ID = 1 ( 0020):	21.33	4.928	1.00	39.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0010)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.5160	0.8710
	0.0000	0.0690	0.6160	0.9610
	0.0280	0.1400	0.7220	1.0540
	0.0400	0.2140	0.8340	1.1480
	0.0720	0.2900	0.9510	1.2440
	0.1220	0.4510	1.0730	1.3430
	0.1840	0.5310	1.2000	1.4430
	0.2550	0.6130	1.3320	1.5460
	0.3350	0.6970	1.4680	1.6500
	0.4220	0.7830	1.6090	1.7570
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	4.928	1.00	39.11
OUTFLOW: ID= 1 ( 0010)	21.330	0.286	2.67	35.85

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.81  
 TIME SHIFT OF PEAK FLOW (min)=100.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.6461

CALIB	Area (ha)=	2.64		
STANDHYD ( 0016)	Total Imp(%)=	50.00	Dir. Conn.(%)=	50.00
ID= 1 DT= 5.0 min				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area	(ha)= 1.32	1.32		
Dep. Storage	(mm)= 1.00	5.00		
Average Slope	(%)= 0.50	2.00		
Length	(m)= 132.66	30.00		

Post-Dev V0  
 Mannings n

= 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Max.Eff.Inten.(mm/hr)= 124.56 20.08  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.41 (ii) 14.70 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.26 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.44 0.05 0.457 (iii)  
 TIME TO PEAK (hrs)= 1.00 1.17 1.00  
 RUNOFF VOLUME (mm)= 48.52 12.49 30.50  
 TOTAL RAINFALL (mm)= 49.52 49.52 49.52  
 RUNOFF COEFFICIENT = 0.98 0.25 0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB	Area (ha)= 30.00
STANDHYD ( 0021)	Total Imp(%)= 77.00 Dir. Conn.(%)= 76.00
ID= 1 DT= 5.0 min	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	23.10	6.90
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	447.21	20.00

Post-Dev V0  
 Mannings n

= 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Max.Eff.Inten.(mm/hr)= 124.56 28.11  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 7.08 (ii) 9.72 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.17 0.11

\*TOTALS\*

PEAK FLOW (cms)= 6.26 0.34 6.509 (iii)  
 TIME TO PEAK (hrs)= 1.00 1.00 1.00  
 RUNOFF VOLUME (mm)= 48.52 12.98 39.99  
 TOTAL RAINFALL (mm)= 49.52 49.52 49.52  
 RUNOFF COEFFICIENT = 0.98 0.26 0.81

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0018)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0016):	2.64	0.457	1.00	30.50
+ ID2= 2 ( 0021):	30.00	6.509	1.00	39.99
=====				
ID = 3 ( 0018):	32.64	6.966	1.00	39.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0019) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
-----

```

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3280	1.2260
0.0070	0.1100	0.4140	1.3640
0.0240	0.2220	0.5060	1.5040
0.0330	0.3380	0.6050	1.6470
0.0400	0.4570	0.7100	1.7930
0.0460	0.5780	0.8210	1.9410
0.0740	0.7030	0.9370	2.0920
0.1220	0.8300	1.0580	2.2450
0.1810	0.9590	1.1840	2.4020
0.2500	1.0910	1.3150	2.5610

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0018)	32.640	6.966	1.00	39.22
OUTFLOW: ID= 1 ( 0019)	32.640	0.266	3.08	38.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.82  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.1201

```

-----
| ADD HYD ( 0022) |
| 1 + 2 = 3      |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0010):	21.33	0.286	2.67	35.85
+ ID2= 2 ( 0013):	2.33	0.054	1.58	13.73
=====				
ID = 3 ( 0022):	23.66	0.318	2.17	33.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0022) |
| 3 + 2 = 1      |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0022):	23.66	0.318	2.17	33.67
+ ID2= 2 ( 0019):	32.64	0.266	3.08	38.87
=====				

Post-Dev V0

ID = 1 ( 0022): 56.30 0.573 3.00 36.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0022) |  
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0022):	56.30	0.573	3.00	36.69
+ ID2= 2 ( 0023):	6.14	0.047	1.83	5.46
=====				
ID = 3 ( 0022):	62.44	0.603	2.83	33.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0022) |  
| 3 + 2 = 1 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0022):	62.44	0.603	2.83	33.62
+ ID2= 2 ( 0009):	24.20	0.331	1.75	9.25
=====				
ID = 1 ( 0022):	86.64	0.892	1.92	26.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

```

V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
WV I SSSSS UUUUU A A LLLLL

```

```

000 TTTTT TTTTT H H Y Y M M 000 TM
0 0 T T H H Y Y MM MM 0 0
0 0 T T H H Y M M 0 0
000 T T H H Y M M 000

```

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Post-Dev V0

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\5d34b95e-fbfe-4991-b57c-5ff84589eb07\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\5d34b95e-fbfe-4991-b57c-5ff84589eb07\scen

DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : D. 25yr 3hr 10min Chicago \*\*  
\*\*\*\*\*

-----  
| CHICAGO STORM |  
Ptotal= 58.14 mm

IDF curve parameters: A= 731.314  
B= 0.000  
C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs  
Storm time step = 10.00 min  
Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	6.80	0.83	146.25	1.67	10.54	2.50	6.56
0.17	8.01	1.00	30.97	1.83	9.31	2.67	6.14
0.33	9.92	1.17	19.53	2.00	8.38	2.83	5.79
0.50	13.57	1.33	14.89	2.17	7.65		
0.67	25.24	1.50	12.27	2.33	7.05		

-----  
CALIB

Post-Dev V0  
 | NASHYD ( 0009) | Area (ha)= 24.20 Curve Number (CN)= 64.7  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.473 (i)  
 TIME TO PEAK (hrs)= 1.750  
 RUNOFF VOLUME (mm)= 12.956  
 TOTAL RAINFALL (mm)= 58.144  
 RUNOFF COEFFICIENT = 0.223

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -  
 -----  
 | CALIB |  
 | NASHYD ( 0013) | Area (ha)= 2.33 Curve Number (CN)= 71.5  
 | ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.49

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14



Post-Dev V0

0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.074 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 18.440  
 TOTAL RAINFALL (mm)= 58.144  
 RUNOFF COEFFICIENT = 0.317

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB							
NASHYD (0023)	Area (ha)=	6.14	Curve Number (CN)=	55.0			
ID= 1 DT= 5.0 min	Ia (mm)=	13.00	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.53					

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.072 (i)  
 TIME TO PEAK (hrs)= 1.750  
 RUNOFF VOLUME (mm)= 8.056  
 TOTAL RAINFALL (mm)= 58.144  
 RUNOFF COEFFICIENT = 0.139

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

Post-Dev V0

CALIB		
STANDHYD ( 0001)	Area (ha)=	5.20
ID= 1 DT= 5.0 min	Total Imp(%)=	69.80 Dir. Conn.(%)= 61.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.63	1.57
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	186.19	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Max.Eff.Inten.(mm/hr)=	146.25	57.60
over (min)	5.00	10.00
Storage Coeff. (min)=	3.92 (ii)	6.93 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.24	0.14

*TOTALS*			
PEAK FLOW (cms)=	1.21	0.18	1.360 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	57.14	20.45	43.02
TOTAL RAINFALL (mm)=	58.14	58.14	58.14
RUNOFF COEFFICIENT =	0.98	0.35	0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

CALIB			
STANDHYD ( 0007)	Area (ha)=	1.73	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.87	0.87
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	107.39	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Max.Eff.Inten.(mm/hr)=	146.25	35.82
over (min)	5.00	15.00
Storage Coeff. (min)=	2.82 (ii)	11.77 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.28	0.09

*TOTALS*			
PEAK FLOW (cms)=	0.34	0.05	0.365 (iii)
TIME TO PEAK (hrs)=	1.00	1.17	1.00
RUNOFF VOLUME (mm)=	57.14	16.89	37.01
TOTAL RAINFALL (mm)=	58.14	58.14	58.14
RUNOFF COEFFICIENT =	0.98	0.29	0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

CALIB			
STANDHYD ( 0014)	Area (ha)=	14.40	
ID= 1 DT= 5.0 min	Total Imp(%)=	81.70	Dir. Conn.(%)= 79.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.76	2.64
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	309.84	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Max.Eff.Inten.(mm/hr)=	146.25	45.76
over (min)	5.00	10.00
Storage Coeff. (min)=	5.32 (ii)	8.16 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.21	0.13

			*TOTALS*
PEAK FLOW (cms)=	4.04	0.23	4.219 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	57.14	18.67	49.18
TOTAL RAINFALL (mm)=	58.14	58.14	58.14
RUNOFF COEFFICIENT =	0.98	0.32	0.85

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

```

-----
| ADD HYD ( 0020) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	5.20	1.360	1.00	43.02
+ ID2= 2 ( 0014):	14.40	4.219	1.00	49.18
=====				
ID = 3 ( 0020):	19.60	5.579	1.00	47.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0020) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0020):	19.60	5.579	1.00	47.54
+ ID2= 2 ( 0007):	1.73	0.365	1.00	37.01
=====				
ID = 1 ( 0020):	21.33	5.944	1.00	46.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0010) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----

```

OVERFLOW IS OFF

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.5160	0.8710
	0.0000	0.0690	0.6160	0.9610
	0.0280	0.1400	0.7220	1.0540
	0.0400	0.2140	0.8340	1.1480
	0.0720	0.2900	0.9510	1.2440
	0.1220	0.4510	1.0730	1.3430
	0.1840	0.5310	1.2000	1.4430
	0.2550	0.6130	1.3320	1.5460
	0.3350	0.6970	1.4680	1.6500
	0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	5.944	1.00	46.69
OUTFLOW: ID= 1 ( 0010)	21.330	0.383	2.42	43.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.45  
 TIME SHIFT OF PEAK FLOW (min)= 85.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.7447

```

-----
| CALIB |
| STANDHYD ( 0016) | Area (ha)= 2.64
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00
-----
  
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.32	1.32
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	132.66	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Max.Eff.Inten.(mm/hr)=	146.25	35.82
over (min)	5.00	15.00
Storage Coeff. (min)=	3.20 (ii)	12.16 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.27	0.09

\*TOTALS\*

PEAK FLOW (cms)=	0.52	0.07	0.549 (iii)
TIME TO PEAK (hrs)=	1.00	1.17	1.00
RUNOFF VOLUME (mm)=	57.14	16.89	37.01
TOTAL RAINFALL (mm)=	58.14	58.14	58.14
RUNOFF COEFFICIENT =	0.98	0.29	0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0021) | Area (ha)= 30.00
| ID= 1 DT= 5.0 min | Total Imp(%)= 77.00 Dir. Conn.(%)= 76.00
-----
  
```

```

                IMPERVIOUS    PERVIOUS (i)
Surface Area    (ha)=        23.10        6.90
Dep. Storage    (mm)=         1.00         5.00
Average Slope   (%)=         0.50         2.00
Length          (m)=        447.21        20.00
Mannings n     =          0.013         0.250
  
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

```

Max.Eff.Inten.(mm/hr)= 146.25    39.02
    over (min)         5.00      10.00
Storage Coeff. (min)=  6.64 (ii)  9.12 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak  (cms)= 0.18      0.12
  
```

```

                *TOTALS*
PEAK FLOW      (cms)=  7.53      0.49      7.891 (iii)
TIME TO PEAK   (hrs)=  1.00      1.08      1.00
RUNOFF VOLUME  (mm)=  57.14     17.49     47.63
TOTAL RAINFALL (mm)=  58.14     58.14     58.14
RUNOFF COEFFICIENT =  0.98      0.30      0.82
  
```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

```

-----
| ADD HYD ( 0018) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0016):	2.64	0.549	1.00	37.01
+ ID2= 2 ( 0021):	30.00	7.891	1.00	47.63
=====				
ID = 3 ( 0018):	32.64	8.440	1.00	46.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0019) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----

```

OVERFLOW IS OFF

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3280	1.2260
	0.0070	0.1100	0.4140	1.3640
	0.0240	0.2220	0.5060	1.5040
	0.0330	0.3380	0.6050	1.6470
	0.0400	0.4570	0.7100	1.7930
	0.0460	0.5780	0.8210	1.9410
	0.0740	0.7030	0.9370	2.0920
	0.1220	0.8300	1.0580	2.2450
	0.1810	0.9590	1.1840	2.4020
	0.2500	1.0910	1.3150	2.5610

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0018)	32.640	8.440	1.00	46.77
OUTFLOW: ID= 1 ( 0019)	32.640	0.371	3.00	46.40

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.40  
 TIME SHIFT OF PEAK FLOW (min)=120.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.2969

```

-----
| ADD HYD ( 0022) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0010):	21.33	0.383	2.42	43.43
+ ID2= 2 ( 0013):	2.33	0.074	1.58	18.44
=====				
ID = 3 ( 0022):	23.66	0.434	2.00	40.96



Post-Dev V0

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	23.66	0.434	2.00	40.96
+ ID2= 2 ( 0019):	32.64	0.371	3.00	46.40
=====				
ID = 1 ( 0022):	56.30	0.778	2.67	44.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0022):	56.30	0.778	2.67	44.12
+ ID2= 2 ( 0023):	6.14	0.072	1.75	8.06
=====				
ID = 3 ( 0022):	62.44	0.831	2.33	40.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	62.44	0.831	2.33	40.57
+ ID2= 2 ( 0009):	24.20	0.473	1.75	12.96
=====				
ID = 1 ( 0022):	86.64	1.270	1.83	32.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

=====

V	V	I	SSSSS	U	U	A	L	(v 6.2.2015)
V	V	I	SS	U	U	A A	L	
V	V	I	SS	U	U	AAAAA	L	
V	V	I	SS	U	U	A A	L	

Post-Dev V0

```

      WV      I      SSSSS  UUUUU  A  A  LLLLL
      000     TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
      0  0     T      T  H  H  Y  Y  MM MM  0  0
      0  0     T      T  H  H  Y      M  M  0  0
      000     T      T  H  H  Y      M  M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \a794bf59-14d7-4261-a850-3024e0f5d981\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \a794bf59-14d7-4261-a850-3024e0f5d981\scen

DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----

```

*****
** SIMULATION : E. 50yr 3hr 10min Chicago **
*****

```

```

-----
| CHICAGO STORM |
| Ptotal= 64.54 mm |
-----

```

```

IDF curve parameters: A= 811.794
                      B=  0.000
                      C=  0.699
used in:  INTENSITY = A / (t + B)^C

```

```

Duration of storm = 3.00 hrs
Storm time step   = 10.00 min
Time to peak ratio = 0.33

```

TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

Post-Dev V0

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	7.55	0.83	162.35	1.67	11.70	2.50	7.28
0.17	8.89	1.00	34.38	1.83	10.34	2.67	6.82
0.33	11.01	1.17	21.68	2.00	9.30	2.83	6.42
0.50	15.06	1.33	16.53	2.17	8.49		
0.67	28.01	1.50	13.62	2.33	7.83		

---

CALIB		
NASHYD ( 0009)	Area (ha)= 24.20	Curve Number (CN)= 64.7
ID= 1 DT= 5.0 min	Ia (mm)= 8.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.55	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.592 (i)

TIME TO PEAK (hrs)= 1.667

RUNOFF VOLUME (mm)= 15.989

TOTAL RAINFALL (mm)= 64.542

RUNOFF COEFFICIENT = 0.248

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---

CALIB		
NASHYD ( 0013)	Area (ha)= 2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)= 4.74	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.49	

Post-Dev V0

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.089 (i)

TIME TO PEAK (hrs)= 1.583

RUNOFF VOLUME (mm)= 22.205

TOTAL RAINFALL (mm)= 64.542

RUNOFF COEFFICIENT = 0.344

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	Area (ha)= 6.14	Curve Number (CN)= 55.0
NASHYD ( 0023)	Ia (mm)= 13.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.53	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Post-Dev V0

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.093 (i)  
 TIME TO PEAK (hrs)= 1.750  
 RUNOFF VOLUME (mm)= 10.242  
 TOTAL RAINFALL (mm)= 64.542  
 RUNOFF COEFFICIENT = 0.159

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB			
STANDHYD ( 0001)	Area (ha)=	5.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.80	Dir. Conn.(%)= 61.50

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.63	1.57
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	186.19	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Max.Eff.Inten.(mm/hr)=	162.35	70.02
over (min)	5.00	10.00
Storage Coeff. (min)=	3.76 (ii)	6.65 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.25	0.14

\*TOTALS\*

PEAK FLOW (cms)=	1.36	0.23	1.540 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	63.54	24.48	48.50
TOTAL RAINFALL (mm)=	64.54	64.54	64.54

Post-Dev V0

RUNOFF COEFFICIENT = 0.98 0.38 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB	
STANDHYD ( 0007)	Area (ha)= 1.73
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.87	0.87
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	107.39	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Max.Eff.Inten.(mm/hr)=	162.35	44.10
over (min)	5.00	10.00
Storage Coeff. (min)=	2.70 (ii)	7.60 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.29	0.13

\*TOTALS\*

PEAK FLOW (cms)=	0.38	0.08	0.440 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	63.54	20.42	41.98
TOTAL RAINFALL (mm)=	64.54	64.54	64.54

Post-Dev V0

RUNOFF COEFFICIENT = 0.98 0.32 0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
STANDHYD ( 0014)	Area (ha)=	14.40	
ID= 1 DT= 5.0 min	Total Imp(%)=	81.70	Dir. Conn.(%)= 79.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	11.76	2.64
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	309.84	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Max.Eff.Inten.(mm/hr)=	162.35	55.97
over (min)	5.00	10.00
Storage Coeff. (min)=	5.11 (ii)	7.83 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.21	0.13

\*TOTALS\*

PEAK FLOW (cms)=	4.54	0.29	4.762 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	63.54	22.45	55.04
TOTAL RAINFALL (mm)=	64.54	64.54	64.54

Post-Dev V0

RUNOFF COEFFICIENT = 0.98 0.35 0.85

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
-----
| ADD HYD ( 0020) |
| 1 + 2 = 3 |
-----
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	5.20	1.540	1.00	48.50
+ ID2= 2 ( 0014):	14.40	4.762	1.00	55.04
=====				
ID = 3 ( 0020):	19.60	6.302	1.00	53.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
| ADD HYD ( 0020) |
| 3 + 2 = 1 |
-----
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0020):	19.60	6.302	1.00	53.30
+ ID2= 2 ( 0007):	1.73	0.440	1.00	41.98
=====				
ID = 1 ( 0020):	21.33	6.742	1.00	52.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
| RESERVOIR( 0010) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----
```

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5160	0.8710
0.0000	0.0690	0.6160	0.9610
0.0280	0.1400	0.7220	1.0540
0.0400	0.2140	0.8340	1.1480
0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460



Post-Dev V0

0.3350	0.6970		1.4680	1.6500
0.4220	0.7830		1.6090	1.7570

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0020)	21.330	6.742	1.00	52.38
OUTFLOW: ID= 1 ( 0010)	21.330	0.460	2.33	49.12

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.82  
 TIME SHIFT OF PEAK FLOW (min)= 80.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.8186

-----  
 -

CALIB			
STANDHYD ( 0016)		Area (ha)= 2.64	
ID= 1 DT= 5.0 min		Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.32	1.32
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	132.66	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN		TIME	RAIN		TIME	RAIN
hrs	mm/hr		hrs	mm/hr		hrs	mm/hr
0.083	7.55		0.833	28.01		1.583	13.62
0.167	7.55		0.917	162.35		1.667	13.62
0.250	8.89		1.000	162.35		1.750	11.70
0.333	8.89		1.083	34.38		1.833	11.70
0.417	11.01		1.167	34.38		1.917	10.34
0.500	11.01		1.250	21.68		2.000	10.34
0.583	15.06		1.333	21.68		2.083	9.30
0.667	15.06		1.417	16.53		2.167	9.30
0.750	28.01		1.500	16.53		2.250	8.49
						3.00	6.42

Max.Eff.Inten.(mm/hr)=	162.35	44.10
over (min)	5.00	10.00
Storage Coeff. (min)=	3.07 (ii)	7.96 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.27	0.13

			*TOTALS*
PEAK FLOW (cms)=	0.58	0.11	0.662 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00

Post-Dev V0

RUNOFF VOLUME	(mm)=	63.54	20.42	41.98
TOTAL RAINFALL	(mm)=	64.54	64.54	64.54
RUNOFF COEFFICIENT	=	0.98	0.32	0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB				
STANDHYD ( 0021)		Area (ha)=	30.00	
ID= 1 DT= 5.0 min		Total Imp(%)=	77.00	Dir. Conn.(%)= 76.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	23.10	6.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	447.21	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Max.Eff.Inten.(mm/hr)=		162.35	47.93
over (min)		5.00	10.00
Storage Coeff. (min)=	6.36 (ii)	8.74 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.18	0.12	

\*TOTALS\*

PEAK FLOW	(cms)=	8.48	0.61	8.941 (iii)
TIME TO PEAK	(hrs)=	1.00	1.08	1.00

Post-Dev V0

RUNOFF VOLUME	(mm)=	63.54	21.11	53.36
TOTAL RAINFALL	(mm)=	64.54	64.54	64.54
RUNOFF COEFFICIENT	=	0.98	0.33	0.83

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
-
-----
| ADD HYD ( 0018) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0016):    2.64    0.662    1.00    41.98
+ ID2= 2 ( 0021):   30.00    8.941    1.00    53.36
=====
ID = 3 ( 0018):   32.64    9.603    1.00    52.44

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
-
-----
| RESERVOIR( 0019) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----
          OUTFLOW    STORAGE    |    OUTFLOW    STORAGE
          (cms)      (ha.m.)    |    (cms)      (ha.m.)
          0.0000    0.0000    |    0.3280    1.2260
          0.0070    0.1100    |    0.4140    1.3640
          0.0240    0.2220    |    0.5060    1.5040
          0.0330    0.3380    |    0.6050    1.6470
          0.0400    0.4570    |    0.7100    1.7930
          0.0460    0.5780    |    0.8210    1.9410
          0.0740    0.7030    |    0.9370    2.0920
          0.1220    0.8300    |    1.0580    2.2450
          0.1810    0.9590    |    1.1840    2.4020
          0.2500    1.0910    |    1.3150    2.5610

          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
INFLOW : ID= 2 ( 0018)   32.640    9.603    1.00    52.44
OUTFLOW: ID= 1 ( 0019)   32.640    0.454    3.00    52.07

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.72  
TIME SHIFT OF PEAK FLOW (min)=120.00  
MAXIMUM STORAGE USED (ha.m.)= 1.4256

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0010):	21.33	0.460	2.33	49.12
+ ID2= 2 ( 0013):	2.33	0.089	1.58	22.20
=====				
ID = 3 ( 0022):	23.66	0.527	1.92	46.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	23.66	0.527	1.92	46.47
+ ID2= 2 ( 0019):	32.64	0.454	3.00	52.07
=====				
ID = 1 ( 0022):	56.30	0.943	2.50	49.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0022):	56.30	0.943	2.50	49.71
+ ID2= 2 ( 0023):	6.14	0.093	1.75	10.24
=====				
ID = 3 ( 0022):	62.44	1.018	2.17	45.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	62.44	1.018	2.17	45.83
+ ID2= 2 ( 0009):	24.20	0.592	1.67	15.99
=====				

Post-Dev V0

ID = 1 ( 0022): 86.64 1.580 1.83 37.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-  
=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\1d73b068-4096-4bd4-a41d-ac93e820a474\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\1d73b068-4096-4bd4-a41d-ac93e820a474\scen

DATE: 10-18-2024

TIME: 12:08:53

USER:

COMMENTS: \_\_\_\_\_

-----  
-----

\*\*\*\*\*  
\*\* SIMULATION : F. 100yr 3hr 10min Chicago \*\*  
\*\*\*\*\*

Post-Dev V0

```
-----
| CHICAGO STORM |
| Ptotal= 70.94 mm |
-----
```

IDF curve parameters: A= 892.273  
 B= 0.000  
 C= 0.699

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs  
 Storm time step = 10.00 min  
 Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	8.30	0.83	178.44	1.67	12.86	2.50	8.00
0.17	9.77	1.00	37.79	1.83	11.36	2.67	7.50
0.33	12.10	1.17	23.83	2.00	10.23	2.83	7.06
0.50	16.55	1.33	18.17	2.17	9.33		
0.67	30.79	1.50	14.97	2.33	8.61		

```
-----
| CALIB |
| NASHYD ( 0009) |
| ID= 1 DT= 5.0 min |
-----
```

Area (ha)= 24.20 Curve Number (CN)= 64.7  
 Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.720 (i)  
 TIME TO PEAK (hrs)= 1.667  
 RUNOFF VOLUME (mm)= 19.237  
 TOTAL RAINFALL (mm)= 70.941

Post-Dev V0

RUNOFF COEFFICIENT = 0.271

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
-
-----
| CALIB |
| NASHYD ( 0013) | Area (ha)= 2.33 Curve Number (CN)= 71.5
| ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.49

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.106 (i)

TIME TO PEAK (hrs)= 1.583

RUNOFF VOLUME (mm)= 26.171

TOTAL RAINFALL (mm)= 70.941

RUNOFF COEFFICIENT = 0.369

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
-
-----
| CALIB |
| NASHYD ( 0023) | Area (ha)= 6.14 Curve Number (CN)= 55.0
| ID= 1 DT= 5.0 min | Ia (mm)= 13.00 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.53

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

Post-Dev V0

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.116 (i)  
 TIME TO PEAK (hrs)= 1.667  
 RUNOFF VOLUME (mm)= 12.632  
 TOTAL RAINFALL (mm)= 70.941  
 RUNOFF COEFFICIENT = 0.178

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

-----  
 | CALIB |  
 | STANDHYD ( 0001) |  
ID= 1 DT= 5.0 min

Area (ha)= 5.20  
 Total Imp(%)= 69.80 Dir. Conn.(%)= 61.50

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.63	1.57
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	186.19	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06



Post-Dev V0

0.750 30.79 | 1.500 18.17 | 2.250 9.33 | 3.00 7.06

Max.Eff.Inten.(mm/hr)=	178.44	83.21	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.62 (ii)	6.40 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.25	0.14	
			*TOTALS*
PEAK FLOW (cms)=	1.50	0.27	1.723 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	69.94	28.69	54.06
TOTAL RAINFALL (mm)=	70.94	70.94	70.94
RUNOFF COEFFICIENT =	0.99	0.40	0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
      THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB				
STANDHYD ( 0007)		Area (ha)=	1.73	
ID= 1 DT= 5.0 min		Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.87	0.87
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	107.39	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06

Post-Dev V0

0.750 30.79 | 1.500 18.17 | 2.250 9.33 | 3.00 7.06

Max.Eff.Inten.(mm/hr)=	178.44	52.98	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.60 (ii)	7.31 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.13	
			*TOTALS*
PEAK FLOW (cms)=	0.42	0.09	0.493 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	69.94	24.15	47.04
TOTAL RAINFALL (mm)=	70.94	70.94	70.94
RUNOFF COEFFICIENT =	0.99	0.34	0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
      THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB				
STANDHYD ( 0014)		Area (ha)=	14.40	
ID= 1 DT= 5.0 min		Total Imp(%)=	81.70	Dir. Conn.(%)= 79.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	11.76	2.64
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	309.84	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06

Post-Dev V0

0.750 30.79 | 1.500 18.17 | 2.250 9.33 | 3.00 7.06

Max.Eff.Inten.(mm/hr)=	178.44	66.85	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.92 (ii)	7.54 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.22	0.13	
			*TOTALS*
PEAK FLOW (cms)=	5.04	0.35	5.312 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	69.94	26.43	60.93
TOTAL RAINFALL (mm)=	70.94	70.94	70.94
RUNOFF COEFFICIENT =	0.99	0.37	0.86

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
      THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0020)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
-----	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	1.723	1.00	54.06
+ ID2= 2 ( 0014):	14.40	5.312	1.00	60.93
=====				
ID = 3 ( 0020):	19.60	7.035	1.00	59.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0020)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
-----	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	7.035	1.00	59.11
+ ID2= 2 ( 0007):	1.73	0.493	1.00	47.04
=====				
ID = 1 ( 0020):	21.33	7.528	1.00	58.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

Post-Dev V0

```

-----
| RESERVOIR( 0010) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
-----
  
```

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5160	0.8710
0.0000	0.0690	0.6160	0.9610
0.0280	0.1400	0.7220	1.0540
0.0400	0.2140	0.8340	1.1480
0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	7.528	1.00	58.13
OUTFLOW: ID= 1 ( 0010)	21.330	0.540	2.17	54.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.18  
 TIME SHIFT OF PEAK FLOW (min)= 70.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.8931

```

-----
| CALIB          |
| STANDHYD ( 0016) |
| ID= 1 DT= 5.0 min |
-----
  
```

Area (ha)= 2.64  
 Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00

Post-Dev V0

0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Max.Eff.Inten.(mm/hr)=	178.44	52.98
over (min)	5.00	10.00
Storage Coeff. (min)=	2.96 (ii)	7.67 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.13

*TOTALS*			
PEAK FLOW (cms)=	0.64	0.14	0.742 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	69.94	24.15	47.04
TOTAL RAINFALL (mm)=	70.94	70.94	70.94
RUNOFF COEFFICIENT =	0.99	0.34	0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB	
STANDHYD ( 0021)	Area (ha)= 30.00
ID= 1 DT= 5.0 min	Total Imp(%)= 77.00 Dir. Conn.(%)= 76.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	23.10	6.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	447.21	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00

Post-Dev V0

0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Max.Eff.Inten.(mm/hr)=	178.44	57.46
over (min)	5.00	10.00
Storage Coeff. (min)=	6.13 (ii)	8.42 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.19	0.12

*TOTALS*			
PEAK FLOW (cms)=	9.44	0.75	10.009 (iii)
TIME TO PEAK (hrs)=	1.00	1.08	1.00
RUNOFF VOLUME (mm)=	69.94	24.93	59.14
TOTAL RAINFALL (mm)=	70.94	70.94	70.94
RUNOFF COEFFICIENT =	0.99	0.35	0.83

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----				
ADD HYD ( 0018)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0016):	2.64	0.742	1.00	47.04
+ ID2= 2 ( 0021):	30.00	10.009	1.00	59.14
=====				
ID = 3 ( 0018):	32.64	10.752	1.00	58.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
RESERVOIR( 0019)				
IN= 2---> OUT= 1				
DT= 5.0 min				
-----				
OVERFLOW IS OFF				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.3280	1.2260
	0.0070	0.1100	0.4140	1.3640
	0.0240	0.2220	0.5060	1.5040
	0.0330	0.3380	0.6050	1.6470
	0.0400	0.4570	0.7100	1.7930
	0.0460	0.5780	0.8210	1.9410

Post-Dev V0

0.0740	0.7030	0.9370	2.0920
0.1220	0.8300	1.0580	2.2450
0.1810	0.9590	1.1840	2.4020
0.2500	1.0910	1.3150	2.5610

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0018)	32.640	10.752	1.00	58.16
OUTFLOW: ID= 1 ( 0019)	32.640	0.539	3.00	57.78

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.01  
 TIME SHIFT OF PEAK FLOW (min)=120.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.5523

-----  
 -

ADD HYD ( 0022)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0010):	21.33	0.540	2.17	54.87
+ ID2= 2 ( 0013):	2.33	0.106	1.58	26.17
=====				
ID = 3 ( 0022):	23.66	0.625	1.83	52.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -

ADD HYD ( 0022)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0022):	23.66	0.625	1.83	52.04
+ ID2= 2 ( 0019):	32.64	0.539	3.00	57.78
=====				
ID = 1 ( 0022):	56.30	1.119	2.33	55.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -

ADD HYD ( 0022)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0022):	56.30	1.119	2.33	55.37
+ ID2= 2 ( 0023):	6.14	0.116	1.67	12.63
=====				

Post-Dev V0

ID = 3 ( 0022): 62.44 1.218 2.08 51.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

-----  
| ADD HYD ( 0022)|  
| 3 + 2 = 1 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0022):	62.44	1.218	2.08	51.17
+ ID2= 2 ( 0009):	24.20	0.720	1.67	19.24
=====				
ID = 1 ( 0022):	86.64	1.911	1.75	42.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

=====

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  V   I  SSSSS  UUUUU  A  A  LLLLL

```

```

000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
O  O  T  T  H  H  Y  Y  MM  MM  O  O
O  O  T  T  H  H  Y  M  M  O  O
000  T  T  H  H  Y  M  M  000

```

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\VH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\975dd415-c7bf-4351-84c5-b49a5757c8f0\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\VH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\975dd415-c7bf-4351-84c5-b49a5757c8f0\scen

DATE: 10-18-2024

TIME: 12:08:54



Post-Dev V0

USER:

COMMENTS: \_\_\_\_\_

-----

\*\*\*\*\*  
 \*\* SIMULATION : G. 2yr 24hr 15min SCS Type II \*\*  
 \*\*\*\*\*

-----

READ STORM	Filename: C:\Users\rdemesa\AppData
	ata\Local\Temp\
	77c03063-8c4f-41dc-868b-881b05d4a065\dc208b32
Ptotal= 60.13 mm	Comments: G. 2yr 24hr 15min SCS Type II

-----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.08	12.50	8.66	18.75	1.08
0.25	0.66	6.50	1.08	12.75	4.45	19.00	1.08
0.50	0.66	6.75	1.08	13.00	4.45	19.25	1.08
0.75	0.66	7.00	1.08	13.25	3.25	19.50	1.08
1.00	0.66	7.25	1.32	13.50	3.25	19.75	1.08
1.25	0.66	7.50	1.32	13.75	2.53	20.00	1.08
1.50	0.66	7.75	1.32	14.00	2.53	20.25	0.72
1.75	0.66	8.00	1.32	14.25	1.80	20.50	0.72
2.00	0.66	8.25	1.56	14.50	1.80	20.75	0.72
2.25	0.78	8.50	1.56	14.75	1.80	21.00	0.72
2.50	0.78	8.75	1.68	15.00	1.80	21.25	0.72
2.75	0.78	9.00	1.68	15.25	1.80	21.50	0.72
3.00	0.78	9.25	1.92	15.50	1.80	21.75	0.72
3.25	0.78	9.50	1.92	15.75	1.80	22.00	0.72
3.50	0.78	9.75	2.16	16.00	1.80	22.25	0.72
3.75	0.78	10.00	2.16	16.25	1.08	22.50	0.72
4.00	0.78	10.25	2.77	16.50	1.08	22.75	0.72
4.25	0.96	10.50	2.77	16.75	1.08	23.00	0.72
4.50	0.96	10.75	3.73	17.00	1.08	23.25	0.72
4.75	0.96	11.00	3.73	17.25	1.08	23.50	0.72
5.00	0.96	11.25	5.77	17.50	1.08	23.75	0.72
5.25	0.96	11.50	5.77	17.75	1.08	24.00	0.72
5.50	0.96	11.75	17.80	18.00	1.08		
5.75	0.96	12.00	73.60	18.25	1.08		

Post-Dev V0

6.00 0.96 | 12.25 8.66 | 18.50 1.08 |

-----

CALIB			
NASHYD ( 0009)	Area (ha)=	24.20	Curve Number (CN)= 64.7
ID= 1 DT= 5.0 min	Ia (mm)=	8.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.55	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72

Post-Dev VO

2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.394 (i)

TIME TO PEAK (hrs)= 12.750

RUNOFF VOLUME (mm)= 13.873

TOTAL RAINFALL (mm)= 60.130

RUNOFF COEFFICIENT = 0.231

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| NASHYD ( 0013) | Area (ha)= 2.33 Curve Number (CN)= 71.5
| ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.49

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72

Post-Dev VO

3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.060 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 19.586

TOTAL RAINFALL (mm)= 60.130

RUNOFF COEFFICIENT = 0.326

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

```

-----
| CALIB |
| NASHYD ( 0023) | Area (ha)= 6.14 Curve Number (CN)= 55.0
| ID= 1 DT= 5.0 min | Ia (mm)= 13.00 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.53 |

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72

Post-Dev VO

3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.060 (i)

TIME TO PEAK (hrs)= 12.750

RUNOFF VOLUME (mm)= 8.712

TOTAL RAINFALL (mm)= 60.130

RUNOFF COEFFICIENT = 0.145

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-  
-----

Post-Dev V0

CALIB	
STANDHYD ( 0001)	Area (ha)= 5.20
ID= 1 DT= 5.0 min	Total Imp(%)= 69.80 Dir. Conn.(%)= 61.50

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.63	1.57
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	186.19	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72



Post-Dev VO

2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Max.Eff.Inten.(mm/hr)=	73.60	40.88
over (min)	5.00	10.00
Storage Coeff. (min)=	5.16 (ii)	9.12 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.21	0.12

			*TOTALS*
PEAK FLOW (cms)=	0.63	0.13	0.752 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	59.13	21.68	44.71

Post-Dev V0

TOTAL RAINFALL (mm)= 60.13 60.13 60.13  
 RUNOFF COEFFICIENT = 0.98 0.36 0.74

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB	Area (ha)= 1.73		
STANDHYD ( 0007)	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.87	0.87
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	107.39	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08

Post-Dev V0

1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72

Post-Dev V0

5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Max.Eff.Inten.(mm/hr)=	73.60	24.33
over (min)	5.00	15.00
Storage Coeff. (min)=	3.71 (ii)	14.16 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.25	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.17	0.03	0.203 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	59.13	17.96	38.54
TOTAL RAINFALL (mm)=	60.13	60.13	60.13
RUNOFF COEFFICIENT =	0.98	0.30	0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	Area (ha)= 14.40
STANDHYD ( 0014)	Total Imp(%)= 81.70 Dir. Conn.(%)= 79.30
ID= 1 DT= 5.0 min	

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.76	2.64
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	309.84	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08

Post-Dev V0

0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72

Post-Dev VO

4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Max.Eff.Inten.(mm/hr)=	73.60	33.15
over (min)	5.00	15.00
Storage Coeff. (min)=	7.01 (ii)	10.74 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.17	0.09

			*TOTALS*
PEAK FLOW (cms)=	2.12	0.15	2.249 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	59.13	19.82	50.99
TOTAL RAINFALL (mm)=	60.13	60.13	60.13
RUNOFF COEFFICIENT =	0.98	0.33	0.85

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----				
ADD HYD ( 0020)				
1 + 2 = 3				
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	0.752	12.25	44.71
+ ID2= 2 ( 0014):	14.40	2.249	12.25	50.99
=====				
ID = 3 ( 0020):	19.60	3.001	12.25	49.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Post-Dev V0

```

-----
| ADD HYD ( 0020) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0020):	19.60	3.001	12.25	49.33
+ ID2= 2 ( 0007):	1.73	0.203	12.25	38.54
=====				
ID = 1 ( 0020):	21.33	3.204	12.25	48.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0010) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----

```

OVERFLOW IS OFF

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.5160	0.8710
	0.0000	0.0690	0.6160	0.9610
	0.0280	0.1400	0.7220	1.0540
	0.0400	0.2140	0.8340	1.1480
	0.0720	0.2900	0.9510	1.2440
	0.1220	0.4510	1.0730	1.3430
	0.1840	0.5310	1.2000	1.4430
	0.2550	0.6130	1.3320	1.5460
	0.3350	0.6970	1.4680	1.6500
	0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	3.204	12.25	48.45
OUTFLOW: ID= 1 ( 0010)	21.330	0.274	13.00	45.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.56  
 TIME SHIFT OF PEAK FLOW (min)= 45.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.6334

```

-----
| CALIB |
| STANDHYD ( 0016) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	2.64		
Total Imp(%)=	50.00	Dir. Conn.(%)=	50.00

	IMPERVIOUS (ha)=	PERVIOUS (i) (mm)=
Surface Area	1.32	1.32
Dep. Storage	1.00	5.00

Post-Dev V0

Average Slope (%)= 0.50 2.00  
 Length (m)= 132.66 30.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72



Post-Dev VO

3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Max.Eff.Inten.(mm/hr)= 73.60 24.33  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.21 (ii) 14.67 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.26 0.05 0.307 (iii)  
 TIME TO PEAK (hrs)= 12.25 12.33 12.25  
 RUNOFF VOLUME (mm)= 59.13 17.96 38.54  
 TOTAL RAINFALL (mm)= 60.13 60.13 60.13  
 RUNOFF COEFFICIENT = 0.98 0.30 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 Ia = Dep. Storage (Above)

Post-Dev V0

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

-

CALIB			
STANDHYD ( 0021)	Area (ha)=	30.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	77.00	Dir. Conn.(%)= 76.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	23.10	6.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	447.21	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72

Post-Dev VO

2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Max.Eff.Inten.(mm/hr)= 73.60 28.68  
 over (min) 10.00 15.00

Post-Dev V0

Storage Coeff. (min)=	8.73 (ii)	12.00 (ii)	
Unit Hyd. Tpeak (min)=	10.00	15.00	
Unit Hyd. peak (cms)=	0.12	0.09	
			*TOTALS*
PEAK FLOW (cms)=	3.70	0.33	3.975 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	59.13	18.59	49.40
TOTAL RAINFALL (mm)=	60.13	60.13	60.13
RUNOFF COEFFICIENT =	0.98	0.31	0.82

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
-----
| ADD HYD ( 0018) |
| 1 + 2 = 3 |
-----
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0016):	2.64	0.307	12.25	38.54
+ ID2= 2 ( 0021):	30.00	3.975	12.25	49.40
=====				
ID = 3 ( 0018):	32.64	4.282	12.25	48.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
| RESERVOIR( 0019) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----
```

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3280	1.2260
0.0070	0.1100	0.4140	1.3640
0.0240	0.2220	0.5060	1.5040
0.0330	0.3380	0.6050	1.6470
0.0400	0.4570	0.7100	1.7930
0.0460	0.5780	0.8210	1.9410
0.0740	0.7030	0.9370	2.0920
0.1220	0.8300	1.0580	2.2450
0.1810	0.9590	1.1840	2.4020
0.2500	1.0910	1.3150	2.5610

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
--------------	----------------	----------------	--------------

Post-Dev V0

INFLOW : ID= 2 ( 0018) 32.640 4.282 12.25 48.52  
OUTFLOW: ID= 1 ( 0019) 32.640 0.238 13.83 48.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.57  
TIME SHIFT OF PEAK FLOW (min)= 95.00  
MAXIMUM STORAGE USED (ha.m.)= 1.0690

-----  
-  
-----  
| ADD HYD ( 0022) |  
1 + 2 = 3
                  AREA      QPEAK      TPEAK      R.V.  
                  (ha)      (cms)      (hrs)      (mm)  
          ID1= 1 ( 0010): 21.33 0.274 13.00 45.19  
          + ID2= 2 ( 0013): 2.33 0.060 12.67 19.59  
                  =====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-  
-----  
| ADD HYD ( 0022) |  
3 + 2 = 1
                  AREA      QPEAK      TPEAK      R.V.  
                  (ha)      (cms)      (hrs)      (mm)  
          ID1= 3 ( 0022): 23.66 0.328 12.83 42.67  
          + ID2= 2 ( 0019): 32.64 0.238 13.83 48.02  
                  =====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-  
-----  
| ADD HYD ( 0022) |  
1 + 2 = 3
                  AREA      QPEAK      TPEAK      R.V.  
                  (ha)      (cms)      (hrs)      (mm)  
          ID1= 1 ( 0022): 56.30 0.546 13.00 45.77  
          + ID2= 2 ( 0023): 6.14 0.060 12.75 8.71  
                  =====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

Post-Dev V0
| ADD HYD ( 0022)|
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 0022):  62.44  0.602   12.92   42.12
+ ID2= 2 ( 0009):  24.20  0.394   12.75   13.87
=====
ID = 1 ( 0022):  86.64  0.987   12.83   34.23

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
-
=====
=====

```

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
WV   I  SSSSS  UUUUU  A  A  LLLLL

```

```

000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
O  O  T  T  H  H  Y  Y  MM MM  O  O
O  O  T  T  H  H  Y  M  M  O  O
000  T  T  H  H  Y  M  M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \49d18e93-2813-44ea-b62b-40f9813c79a7\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \49d18e93-2813-44ea-b62b-40f9813c79a7\scen

DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : H. 5yr 24hr 15min SCS Type II \*\*  
 \*\*\*\*\*

-----  
 | READ STORM | Filename: C:\Users\rdemesa\AppData  
 | | ata\Local\Temp\  
 | | 77c03063-8c4f-41dc-868b-881b05d4a065\16110151  
 | Ptotal= 79.65 mm | Comments: H. 5yr 24hr 15min SCS Type II  
 -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.43	12.50	11.47	18.75	1.43
0.25	0.88	6.50	1.43	12.75	5.89	19.00	1.43
0.50	0.88	6.75	1.43	13.00	5.89	19.25	1.43
0.75	0.88	7.00	1.43	13.25	4.30	19.50	1.43
1.00	0.88	7.25	1.75	13.50	4.30	19.75	1.43
1.25	0.88	7.50	1.75	13.75	3.35	20.00	1.43
1.50	0.88	7.75	1.75	14.00	3.35	20.25	0.96
1.75	0.88	8.00	1.75	14.25	2.39	20.50	0.96
2.00	0.88	8.25	2.07	14.50	2.39	20.75	0.96
2.25	1.04	8.50	2.07	14.75	2.39	21.00	0.96
2.50	1.04	8.75	2.23	15.00	2.39	21.25	0.96
2.75	1.04	9.00	2.23	15.25	2.39	21.50	0.96
3.00	1.04	9.25	2.55	15.50	2.39	21.75	0.96
3.25	1.04	9.50	2.55	15.75	2.39	22.00	0.96
3.50	1.04	9.75	2.87	16.00	2.39	22.25	0.96
3.75	1.04	10.00	2.87	16.25	1.43	22.50	0.96
4.00	1.04	10.25	3.66	16.50	1.43	22.75	0.96
4.25	1.27	10.50	3.66	16.75	1.43	23.00	0.96
4.50	1.27	10.75	4.94	17.00	1.43	23.25	0.96
4.75	1.27	11.00	4.94	17.25	1.43	23.50	0.96
5.00	1.27	11.25	7.65	17.50	1.43	23.75	0.96
5.25	1.27	11.50	7.65	17.75	1.43	24.00	0.96
5.50	1.27	11.75	23.58	18.00	1.43		
5.75	1.27	12.00	97.49	18.25	1.43		
6.00	1.27	12.25	11.47	18.50	1.43		

-----  
 | CALIB |

Post-Dev VO  
 | NASHYD ( 0009) | Area (ha)= 24.20 Curve Number (CN)= 64.7  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96



Post-Dev V0

3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.700 (i)

TIME TO PEAK (hrs)= 12.750

RUNOFF VOLUME (mm)= 23.968

TOTAL RAINFALL (mm)= 79.650

RUNOFF COEFFICIENT = 0.301

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---

CALIB			
NASHYD (0013)	Area (ha)=	2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)= 3.00

----- U.H. Tp(hrs)= 0.49

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27		12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27		12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43		12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43		12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43		12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43		12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43		12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43		12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43		12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43		13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43		13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43		13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43		13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43		13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75		13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75		13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75		13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75		13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75		13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75		13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75		13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75		14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75		14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75		14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75		14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75		14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07		14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07		14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07		14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07		14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07		14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07		14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23		14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23		15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23		15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23		15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23		15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23		15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55		15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55		15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55		15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55		15.667	2.39	21.75	0.96

Post-Dev VO

3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.099 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 31.854

TOTAL RAINFALL (mm)= 79.650

RUNOFF COEFFICIENT = 0.400

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
NASHYD ( 0023)	Area (ha)=	6.14	Curve Number (CN)= 55.0
ID= 1 DT= 5.0 min	Ia (mm)=	13.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.53	

Post-Dev V0

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96

Post-Dev V0

3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.118 (i)  
 TIME TO PEAK (hrs)= 12.750  
 RUNOFF VOLUME (mm)= 16.184  
 TOTAL RAINFALL (mm)= 79.650  
 RUNOFF COEFFICIENT = 0.203

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB	
STANDHYD ( 0001)	
ID= 1 DT= 5.0 min	
Area (ha)=	5.20
Total Imp(%)=	69.80
Dir. Conn.(%)=	61.50

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.63	1.57
Dep. Storage	(mm)=	1.00	5.00

Post-Dev V0

Average Slope (%)= 0.50 2.00  
 Length (m)= 186.19 20.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96

Post-Dev VO

3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Max.Eff.Inten.(mm/hr)=	97.49	65.38
over (min)	5.00	10.00
Storage Coeff. (min)=	4.61 (ii)	8.15 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.22	0.13

			*TOTALS*
PEAK FLOW (cms)=	0.84	0.21	1.053 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	78.65	34.70	61.73
TOTAL RAINFALL (mm)=	79.65	79.65	79.65
RUNOFF COEFFICIENT =	0.99	0.44	0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0    Ia = Dep. Storage (Above)

Post-Dev V0

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

-

CALIB			
STANDHYD ( 0007)	Area (ha)=	1.73	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.87	0.87
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	107.39	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96



Post-Dev VO

2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Max.Eff.Inten.(mm/hr)= 97.49 43.67  
over (min) 5.00 15.00

Post-Dev V0

Storage Coeff. (min)=	3.32 (ii)	11.59 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.09	
			*TOTALS*
PEAK FLOW (cms)=	0.23	0.06	0.286 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	78.65	29.52	54.08
TOTAL RAINFALL (mm)=	79.65	79.65	79.65
RUNOFF COEFFICIENT =	0.99	0.37	0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

-

CALIB	
STANDHYD ( 0014)	Area (ha)= 14.40
ID= 1 DT= 5.0 min	Total Imp(%)= 81.70 Dir. Conn.(%)= 79.30

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	11.76	2.64
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	309.84	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43

Post-Dev V0

1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96

Post-Dev V0

5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Max.Eff.Inten.(mm/hr)=	97.49	53.75	
over (min)	5.00	10.00	
Storage Coeff. (min)=	6.26 (ii)	9.60 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.19	0.11	
			*TOTALS*
PEAK FLOW (cms)=	2.87	0.27	3.148 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	78.65	32.14	69.02
TOTAL RAINFALL (mm)=	79.65	79.65	79.65
RUNOFF COEFFICIENT =	0.99	0.40	0.87

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

-----				
ADD HYD ( 0020)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	1.053	12.25	61.73
+ ID2= 2 ( 0014):	14.40	3.148	12.25	69.02
=====				
ID = 3 ( 0020):	19.60	4.201	12.25	67.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

-----				
ADD HYD ( 0020)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.

Post-Dev V0

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	4.201	12.25	67.09
+ ID2= 2 ( 0007):	1.73	0.286	12.25	54.08
=====				
ID = 1 ( 0020):	21.33	4.488	12.25	66.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | RESERVOIR( 0010) |  
 | IN= 2---> OUT= 1 |  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5160	0.8710
0.0000	0.0690	0.6160	0.9610
0.0280	0.1400	0.7220	1.0540
0.0400	0.2140	0.8340	1.1480
0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	4.488	12.25	66.03
OUTFLOW: ID= 1 ( 0010)	21.330	0.470	12.83	62.77

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.47  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.8279

-----  
 | CALIB |  
 | STANDHYD ( 0016) |  
ID= 1 DT= 5.0 min

Area (ha)= 2.64  
 Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96

Post-Dev VO

3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Max.Eff.Inten.(mm/hr)=	97.49	43.67
over (min)	5.00	15.00
Storage Coeff. (min)=	3.76 (ii)	12.04 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.25	0.09

\*TOTALS\*

PEAK FLOW (cms)=	0.35	0.10	0.433 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	78.65	29.52	54.08
TOTAL RAINFALL (mm)=	79.65	79.65	79.65
RUNOFF COEFFICIENT =	0.99	0.37	0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

```

-----
| CALIB |
| STANDHYD ( 0021) | Area (ha)= 30.00
| ID= 1 DT= 5.0 min | Total Imp(%)= 77.00 Dir. Conn.(%)= 76.00
-----

```

```

                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          23.10          6.90
Dep. Storage    (mm)=           1.00          5.00
Average Slope   (%)=           0.50          2.00
Length          (m)=          447.21         20.00
Mannings n     =             0.013         0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96



Post-Dev VO

2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Max.Eff.Inten.(mm/hr)=	97.49	46.95
over (min)	10.00	15.00
Storage Coeff. (min)=	7.80 (ii)	10.72 (ii)
Unit Hyd. Tpeak (min)=	10.00	15.00
Unit Hyd. peak (cms)=	0.13	0.09

\*TOTALS\*

PEAK FLOW (cms)=	5.09	0.57	5.574 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25

Post-Dev V0

RUNOFF VOLUME	(mm)=	78.65	30.42	67.07
TOTAL RAINFALL	(mm)=	79.65	79.65	79.65
RUNOFF COEFFICIENT	=	0.99	0.38	0.84

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
-----
-
-----
| ADD HYD ( 0018) |
| 1 + 2 = 3 |
-----
```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0016):	2.64	0.433	12.25	54.08
+ ID2= 2 ( 0021):	30.00	5.574	12.25	67.07
=====				
ID = 3 ( 0018):	32.64	6.007	12.25	66.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
-
-----
| RESERVOIR( 0019) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----
```

OVERFLOW IS OFF

	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.3280	1.2260
	0.0070	0.1100	0.4140	1.3640
	0.0240	0.2220	0.5060	1.5040
	0.0330	0.3380	0.6050	1.6470
	0.0400	0.4570	0.7100	1.7930
	0.0460	0.5780	0.8210	1.9410
	0.0740	0.7030	0.9370	2.0920
	0.1220	0.8300	1.0580	2.2450
	0.1810	0.9590	1.1840	2.4020
	0.2500	1.0910	1.3150	2.5610

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0018)	32.640	6.007	12.25	66.02
OUTFLOW: ID= 1 ( 0019)	32.640	0.435	13.42	65.49

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.24  
 TIME SHIFT OF PEAK FLOW (min)= 70.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.3965

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0010):	21.33	0.470	12.83	62.77
+ ID2= 2 ( 0013):	2.33	0.099	12.67	31.85
=====				
ID = 3 ( 0022):	23.66	0.563	12.75	59.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	23.66	0.563	12.75	59.72
+ ID2= 2 ( 0019):	32.64	0.435	13.42	65.49
=====				
ID = 1 ( 0022):	56.30	0.977	12.92	63.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0022):	56.30	0.977	12.92	63.07
+ ID2= 2 ( 0023):	6.14	0.118	12.75	16.18
=====				
ID = 3 ( 0022):	62.44	1.091	12.83	58.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	62.44	1.091	12.83	58.46
+ ID2= 2 ( 0009):	24.20	0.700	12.75	23.97
=====				

Post-Dev V0

ID = 1 ( 0022): 86.64 1.783 12.75 48.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-  
=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\77ccf208-5f31-4a5c-af28-a33c709123bd\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
\77ccf208-5f31-4a5c-af28-a33c709123bd\scen

DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

-----  
-----

\*\*\*\*\*  
\*\* SIMULATION : I. 10yr 24hr 15min SCS Type I \*\*  
\*\*\*\*\*

```

-----
|   READ STORM   |   Filename: C:\Users\rdemesa\AppData
|               |               ata\Local\Temp\
|               |               77c03063-8c4f-41dc-868b-881b05d4a065\a2bed49a
| Ptotal= 92.66 mm |   Comments: I. 10yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.67	12.50	13.34	18.75	1.67
0.25	1.02	6.50	1.67	12.75	6.86	19.00	1.67
0.50	1.02	6.75	1.67	13.00	6.86	19.25	1.67
0.75	1.02	7.00	1.67	13.25	5.00	19.50	1.67
1.00	1.02	7.25	2.04	13.50	5.00	19.75	1.67
1.25	1.02	7.50	2.04	13.75	3.89	20.00	1.67
1.50	1.02	7.75	2.04	14.00	3.89	20.25	1.11
1.75	1.02	8.00	2.04	14.25	2.78	20.50	1.11
2.00	1.02	8.25	2.41	14.50	2.78	20.75	1.11
2.25	1.20	8.50	2.41	14.75	2.78	21.00	1.11
2.50	1.20	8.75	2.59	15.00	2.78	21.25	1.11
2.75	1.20	9.00	2.59	15.25	2.78	21.50	1.11
3.00	1.20	9.25	2.97	15.50	2.78	21.75	1.11
3.25	1.20	9.50	2.97	15.75	2.78	22.00	1.11
3.50	1.20	9.75	3.34	16.00	2.78	22.25	1.11
3.75	1.20	10.00	3.34	16.25	1.67	22.50	1.11
4.00	1.20	10.25	4.26	16.50	1.67	22.75	1.11
4.25	1.48	10.50	4.26	16.75	1.67	23.00	1.11
4.50	1.48	10.75	5.74	17.00	1.67	23.25	1.11
4.75	1.48	11.00	5.74	17.25	1.67	23.50	1.11
5.00	1.48	11.25	8.90	17.50	1.67	23.75	1.11
5.25	1.48	11.50	8.90	17.75	1.67	24.00	1.11
5.50	1.48	11.75	27.43	18.00	1.67		
5.75	1.48	12.00	113.42	18.25	1.67		
6.00	1.48	12.25	13.34	18.50	1.67		

```

-----
| CALIB          |
| NASHYD ( 0009) | Area (ha)= 24.20 Curve Number (CN)= 64.7
| ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00
|                 | U.H. Tp(hrs)= 0.55
-----

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11

Post-Dev V0

3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 0.934 (i)

TIME TO PEAK (hrs)= 12.750

RUNOFF VOLUME (mm)= 31.614

TOTAL RAINFALL (mm)= 92.660

RUNOFF COEFFICIENT = 0.341

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| NASHYD ( 0013) | Area (ha)= 2.33 Curve Number (CN)= 71.5
| ID= 1 DT= 5.0 min | Ia (mm)= 4.74 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.49

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

Post-Dev VO

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11



Post-Dev V0

4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.128 (i)  
 TIME TO PEAK (hrs)= 12.667  
 RUNOFF VOLUME (mm)= 40.861  
 TOTAL RAINFALL (mm)= 92.660  
 RUNOFF COEFFICIENT = 0.441

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -  
 -----  
 | CALIB |  
 | NASHYD ( 0023) | Area (ha)= 6.14 Curve Number (CN)= 55.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 13.00 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.53

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN  
 hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr

Post-Dev V0

0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11

Post-Dev V0

4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.164 (i)

TIME TO PEAK (hrs)= 12.750

RUNOFF VOLUME (mm)= 22.073

TOTAL RAINFALL (mm)= 92.660

RUNOFF COEFFICIENT = 0.238

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB			
STANDHYD ( 0001)	Area (ha)=	5.20	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.80	Dir. Conn.(%)= 61.50

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.63	1.57
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	186.19	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11

Post-Dev VO

3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Max.Eff.Inten. (mm/hr)=	113.42	83.08
over (min)	5.00	10.00
Storage Coeff. (min)=	4.34 (ii)	7.67 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.23	0.13

\*TOTALS\*

PEAK FLOW (cms)=	0.98	0.28	1.262 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	91.66	44.18	73.38
TOTAL RAINFALL (mm)=	92.66	92.66	92.66
RUNOFF COEFFICIENT =	0.99	0.48	0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

CALIB			
STANDHYD ( 0007)	Area (ha)=	1.73	
ID= 1 DT= 5.0 min	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.87	0.87
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	107.39	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11

Post-Dev VO

2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Max.Eff.Inten.(mm/hr)=	113.42	56.31
over (min)	5.00	15.00
Storage Coeff. (min)=	3.12 (ii)	10.59 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.27	0.09

\*TOTALS\*

PEAK FLOW (cms)=	0.27	0.09	0.345 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25

Post-Dev V0

RUNOFF VOLUME	(mm)=	91.66	38.08	64.87
TOTAL RAINFALL	(mm)=	92.66	92.66	92.66
RUNOFF COEFFICIENT	=	0.99	0.41	0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB				
STANDHYD ( 0014)		Area (ha)=	14.40	
ID= 1 DT= 5.0 min		Total Imp(%)=	81.70	Dir. Conn.(%)= 79.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	11.76	2.64
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	309.84	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67



Post-Dev V0

1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11

Post-Dev V0

5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Max.Eff.Inten.(mm/hr)=	113.42	68.80
over (min)	5.00	10.00
Storage Coeff. (min)=	5.89 (ii)	9.04 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.19	0.12

			*TOTALS*
PEAK FLOW (cms)=	3.38	0.36	3.742 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	91.66	41.17	81.21
TOTAL RAINFALL (mm)=	92.66	92.66	92.66
RUNOFF COEFFICIENT =	0.99	0.44	0.88

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
      THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

ADD HYD ( 0020)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	1.262	12.25	73.38
+ ID2= 2 ( 0014):	14.40	3.742	12.25	81.21
=====				
ID = 3 ( 0020):	19.60	5.003	12.25	79.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0020)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	5.003	12.25	79.13
+ ID2= 2 ( 0007):	1.73	0.345	12.25	64.87
=====				
ID = 1 ( 0020):	21.33	5.348	12.25	77.97

Post-Dev V0

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0010) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
-----

```

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5160	0.8710
0.0000	0.0690	0.6160	0.9610
0.0280	0.1400	0.7220	1.0540
0.0400	0.2140	0.8340	1.1480
0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	5.348	12.25	77.97
OUTFLOW: ID= 1 ( 0010)	21.330	0.611	12.83	74.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.43  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.9578

```

-----
| CALIB          |
| STANDHYD ( 0016) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)= 2.64  
 Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67

Post-Dev V0

0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11

Post-Dev VO

4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Max.Eff.Inten.(mm/hr)= 113.42 56.31  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.54 (ii) 11.02 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.41 0.13 0.522 (iii)  
 TIME TO PEAK (hrs)= 12.25 12.33 12.25  
 RUNOFF VOLUME (mm)= 91.66 38.08 64.87  
 TOTAL RAINFALL (mm)= 92.66 92.66 92.66  
 RUNOFF COEFFICIENT = 0.99 0.41 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -  
 -----  
 | CALIB |  
 | STANDHYD ( 0021) | Area (ha)= 30.00  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 77.00 Dir. Conn.(%)= 76.00  
 -----

IMPERVIOUS PERVIOUS (i)

Post-Dev V0

Surface Area	(ha)=	23.10	6.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	447.21	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11

Post-Dev VO

3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Max.Eff.Inten. (mm/hr)=	113.42	60.38
over (min)	5.00	15.00
Storage Coeff. (min)=	7.35 (ii)	10.09 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.17	0.10

			*TOTALS*
PEAK FLOW (cms)=	6.46	0.75	7.105 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	91.66	39.15	79.06
TOTAL RAINFALL (mm)=	92.66	92.66	92.66
RUNOFF COEFFICIENT =	0.99	0.42	0.85

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

Post-Dev V0

CN\* = 69.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
-----  
-  
-----  
| ADD HYD ( 0018) |  
| 1 + 2 = 3 |  
-----  
          AREA      QPEAK      TPEAK      R.V.  
          (ha)      (cms)      (hrs)      (mm)  
ID1= 1 ( 0016):    2.64    0.522    12.25    64.87  
+ ID2= 2 ( 0021):   30.00    7.105    12.25    79.06  
=====
```

```
ID = 3 ( 0018):    32.64    7.627    12.25    77.91
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----  
-  
-----  
| RESERVOIR( 0019) | OVERFLOW IS OFF  
| IN= 2---> OUT= 1 |  
| DT= 5.0 min |  
-----  
          OUTFLOW      STORAGE      | OUTFLOW      STORAGE  
          (cms)      (ha.m.)      | (cms)      (ha.m.)  
0.0000    0.0000      | 0.3280    1.2260  
0.0070    0.1100      | 0.4140    1.3640  
0.0240    0.2220      | 0.5060    1.5040  
0.0330    0.3380      | 0.6050    1.6470  
0.0400    0.4570      | 0.7100    1.7930  
0.0460    0.5780      | 0.8210    1.9410  
0.0740    0.7030      | 0.9370    2.0920  
0.1220    0.8300      | 1.0580    2.2450  
0.1810    0.9590      | 1.1840    2.4020  
0.2500    1.0910      | 1.3150    2.5610  
  
          AREA      QPEAK      TPEAK      R.V.  
          (ha)      (cms)      (hrs)      (mm)  
INFLOW : ID= 2 ( 0018)   32.640    7.627    12.25    77.91  
OUTFLOW: ID= 1 ( 0019)   32.640    0.584    13.25    77.37
```

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.66  
TIME SHIFT OF PEAK FLOW (min)= 60.00  
MAXIMUM STORAGE USED (ha.m.)= 1.6166

```
-----  
-  
-----  
| ADD HYD ( 0022) |
```



Post-Dev V0

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
-----	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0010):	21.33	0.611	12.83	74.71
+ ID2= 2 ( 0013):	2.33	0.128	12.67	40.86
=====				
ID = 3 ( 0022):	23.66	0.735	12.75	71.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	23.66	0.735	12.75	71.38
+ ID2= 2 ( 0019):	32.64	0.584	13.25	77.37
=====				
ID = 1 ( 0022):	56.30	1.302	12.83	74.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0022):	56.30	1.302	12.83	74.85
+ ID2= 2 ( 0023):	6.14	0.164	12.75	22.07
=====				
ID = 3 ( 0022):	62.44	1.462	12.83	69.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	62.44	1.462	12.83	69.66
+ ID2= 2 ( 0009):	24.20	0.934	12.75	31.61
=====				
ID = 1 ( 0022):	86.64	2.393	12.75	59.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Post-Dev V0

=====

```

V   V   I   SSSSS U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U  AAAAA L
V   V   I   SS    U   U  A   A  L
  WV    I   SSSSS UUUUU A   A  LLLLL

```

```

000  TTTT  TTTT  H   H   Y   Y   M   M   000  TM
0  0  T    T    H   H   Y Y  MM MM  0  0
0  0  T    T    H   H   Y   M   M  0  0
000  T    T    H   H   Y   M   M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \c036278b-f333-4dea-a67e-43ef0f6b5f41\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \c036278b-f333-4dea-a67e-43ef0f6b5f41\scen

DATE: 10-18-2024

TIME: 12:08:55

USER:

COMMENTS: \_\_\_\_\_

-----

```

*****
** SIMULATION : J. 25yr 24hr 15min SCS Type I **
*****

```

```

-----
|   READ STORM   |   Filename: C:\Users\rdemesa\AppData
|                 |   ata\Local\Temp\

```

Post-Dev V0

|  
 77c03063-8c4f-41dc-868b-881b05d4a065\3658f99e  
 | Ptotal=108.80 mm | Comments: J. 25yr 24hr 15min SCS Type II

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	1.96	12.50	15.67	18.75	1.96
0.25	1.20	6.50	1.96	12.75	8.05	19.00	1.96
0.50	1.20	6.75	1.96	13.00	8.05	19.25	1.96
0.75	1.20	7.00	1.96	13.25	5.88	19.50	1.96
1.00	1.20	7.25	2.39	13.50	5.88	19.75	1.96
1.25	1.20	7.50	2.39	13.75	4.57	20.00	1.96
1.50	1.20	7.75	2.39	14.00	4.57	20.25	1.31
1.75	1.20	8.00	2.39	14.25	3.26	20.50	1.31
2.00	1.20	8.25	2.83	14.50	3.26	20.75	1.31
2.25	1.41	8.50	2.83	14.75	3.26	21.00	1.31
2.50	1.41	8.75	3.05	15.00	3.26	21.25	1.31
2.75	1.41	9.00	3.05	15.25	3.26	21.50	1.31
3.00	1.41	9.25	3.48	15.50	3.26	21.75	1.31
3.25	1.41	9.50	3.48	15.75	3.26	22.00	1.31
3.50	1.41	9.75	3.92	16.00	3.26	22.25	1.31
3.75	1.41	10.00	3.92	16.25	1.96	22.50	1.31
4.00	1.41	10.25	5.00	16.50	1.96	22.75	1.31
4.25	1.74	10.50	5.00	16.75	1.96	23.00	1.31
4.50	1.74	10.75	6.75	17.00	1.96	23.25	1.31
4.75	1.74	11.00	6.75	17.25	1.96	23.50	1.31
5.00	1.74	11.25	10.44	17.50	1.96	23.75	1.31
5.25	1.74	11.50	10.44	17.75	1.96	24.00	1.31
5.50	1.74	11.75	32.20	18.00	1.96		
5.75	1.74	12.00	133.17	18.25	1.96		
6.00	1.74	12.25	15.67	18.50	1.96		

-----  
 -  
 -----  
 | CALIB |  
 | NASHYD ( 0009) | Area (ha)= 24.20 Curve Number (CN)= 64.7  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.80 # of Linear Res.(N)= 3.00  
 -----  
 U.H. Tp(hrs)= 0.55

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96

Post-Dev VO

0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31

Post-Dev V0

4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 1.250 (i)  
 TIME TO PEAK (hrs)= 12.750  
 RUNOFF VOLUME (mm)= 41.913  
 TOTAL RAINFALL (mm)= 108.800  
 RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB					
NASHYD ( 0013)		Area (ha)=	2.33	Curve Number (CN)=	71.5
ID= 1 DT= 5.0 min		Ia (mm)=	4.74	# of Linear Res.(N)=	3.00
-----		U.H. Tp(hrs)=	0.49		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96

Post-Dev VO

0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31

Post-Dev V0

4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.167 (i)

TIME TO PEAK (hrs)= 12.583

RUNOFF VOLUME (mm)= 52.740

TOTAL RAINFALL (mm)= 108.800

RUNOFF COEFFICIENT = 0.485

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---

-----			
-			
-----			
CALIB			
NASHYD ( 0023)	Area (ha)=	6.14	Curve Number (CN)= 55.0
ID= 1 DT= 5.0 min	Ia (mm)=	13.00	# of Linear Res.(N)= 3.00
-----		U.H. Tp(hrs)=	0.53

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96

Post-Dev VO

0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31



Post-Dev VO

4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.228 (i)  
 TIME TO PEAK (hrs)= 12.667  
 RUNOFF VOLUME (mm)= 30.226  
 TOTAL RAINFALL (mm)= 108.800  
 RUNOFF COEFFICIENT = 0.278

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB	
STANDHYD ( 0001)	Area (ha)= 5.20
ID= 1 DT= 5.0 min	Total Imp(%)= 69.80 Dir. Conn.(%)= 61.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.63	1.57
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	186.19	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96

Post-Dev VO

0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31

Post-Dev VO

4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Max.Eff.Inten.(mm/hr)=	133.17	106.13
over (min)	5.00	10.00
Storage Coeff. (min)=	4.07 (ii)	7.20 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.24	0.14

\*TOTALS\*

PEAK FLOW (cms)=	1.16	0.37	1.527 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	107.80	56.58	88.08
TOTAL RAINFALL (mm)=	108.80	108.80	108.80
RUNOFF COEFFICIENT =	0.99	0.52	0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB	
STANDHYD ( 0007)	Area (ha)= 1.73
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00   Dir. Conn.(%)= 50.00

IMPERVIOUS    PERVIOUS (i)

Post-Dev V0

Surface Area	(ha)=	0.87	0.87
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	107.39	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31

Post-Dev V0

3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Max.Eff.Inten. (mm/hr)=	133.17	73.01
over (min)	5.00	10.00
Storage Coeff. (min)=	2.93 (ii)	9.66 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.11

			*TOTALS*
PEAK FLOW (cms)=	0.32	0.12	0.441 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	107.80	49.44	78.62
TOTAL RAINFALL (mm)=	108.80	108.80	108.80
RUNOFF COEFFICIENT =	0.99	0.45	0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

Post-Dev V0

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
-
-----
| CALIB |
| STANDHYD ( 0014) | Area (ha)= 14.40
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.70 Dir. Conn.(%)= 79.30
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	11.76	2.64
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	309.84	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96

Post-Dev V0

2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Post-Dev V0

Max.Eff.Inten.(mm/hr)=	133.17	88.52	
over (min)	5.00	10.00	
Storage Coeff. (min)=	5.53 (ii)	8.47 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.20	0.12	
			*TOTALS*
PEAK FLOW (cms)=	4.01	0.48	4.490 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	107.80	53.08	96.47
TOTAL RAINFALL (mm)=	108.80	108.80	108.80
RUNOFF COEFFICIENT =	0.99	0.49	0.89

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0020)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	1.527	12.25	88.08
+ ID2= 2 ( 0014):	14.40	4.490	12.25	96.47
=====				
ID = 3 ( 0020):	19.60	6.017	12.25	94.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0020)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	6.017	12.25	94.25
+ ID2= 2 ( 0007):	1.73	0.441	12.25	78.62
=====				
ID = 1 ( 0020):	21.33	6.458	12.25	92.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

RESERVOIR( 0010)	OVERFLOW IS OFF
IN= 2---> OUT= 1	



Post-Dev V0

| DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.5160	0.8710
0.0000	0.0690	0.6160	0.9610
0.0280	0.1400	0.7220	1.0540
0.0400	0.2140	0.8340	1.1480
0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	6.458	12.25	92.98
OUTFLOW: ID= 1 ( 0010)	21.330	0.797	12.75	89.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.34  
 TIME SHIFT OF PEAK FLOW (min)= 30.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.1183

-----  
 -

| CALIB  
 | STANDHYD ( 0016)  
 | ID= 1 DT= 5.0 min |

Area (ha)= 2.64  
 Total Imp(%)= 50.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96

Post-Dev V0

0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31

Post-Dev VO

4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Max.Eff.Inten.(mm/hr)=	133.17	73.01
over (min)	5.00	15.00
Storage Coeff. (min)=	3.32 (ii)	10.06 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.26	0.10

\*TOTALS\*

PEAK FLOW (cms)=	0.48	0.17	0.636 (iii)
TIME TO PEAK (hrs)=	12.25	12.33	12.25
RUNOFF VOLUME (mm)=	107.80	49.44	78.62
TOTAL RAINFALL (mm)=	108.80	108.80	108.80
RUNOFF COEFFICIENT =	0.99	0.45	0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
      THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

-

CALIB	
STANDHYD ( 0021)	Area (ha)= 30.00
ID= 1 DT= 5.0 min	Total Imp(%)= 77.00   Dir. Conn.(%)= 76.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	23.10	6.90
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	447.21	20.00
Mannings n =	0.013	0.250

Post-Dev V0

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31

Post-Dev VO

3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Max.Eff.Inten.(mm/hr)=	133.17	78.09
over (min)	5.00	10.00
Storage Coeff. (min)=	6.89 (ii)	9.46 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.18	0.12

			*TOTALS*
PEAK FLOW (cms)=	7.69	1.06	8.751 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	107.80	50.70	94.10
TOTAL RAINFALL (mm)=	108.80	108.80	108.80
RUNOFF COEFFICIENT =	0.99	0.47	0.86

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

```

-----
| ADD HYD ( 0018) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0016):	2.64	0.636	12.25	78.62
+ ID2= 2 ( 0021):	30.00	8.751	12.25	94.10
=====				
ID = 3 ( 0018):	32.64	9.387	12.25	92.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0019) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----

```

OVERFLOW IS OFF

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3280	1.2260
	0.0070	0.1100	0.4140	1.3640
	0.0240	0.2220	0.5060	1.5040
	0.0330	0.3380	0.6050	1.6470
	0.0400	0.4570	0.7100	1.7930
	0.0460	0.5780	0.8210	1.9410
	0.0740	0.7030	0.9370	2.0920
	0.1220	0.8300	1.0580	2.2450
	0.1810	0.9590	1.1840	2.4020
	0.2500	1.0910	1.3150	2.5610

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0018)	32.640	9.387	12.25	92.84
OUTFLOW: ID= 1 ( 0019)	32.640	0.786	13.00	92.29

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.37  
 TIME SHIFT OF PEAK FLOW (min)= 45.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.8943

```

-----
| ADD HYD ( 0022) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0010):	21.33	0.797	12.75	89.71
+ ID2= 2 ( 0013):	2.33	0.167	12.58	52.74
=====				
ID = 3 ( 0022):	23.66	0.959	12.67	86.07

Post-Dev V0

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

---

-----

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	23.66	0.959	12.67	86.07
+ ID2= 2 ( 0019):	32.64	0.786	13.00	92.29
=====				
ID = 1 ( 0022):	56.30	1.730	12.83	89.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

---

-----

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0022):	56.30	1.730	12.83	89.68
+ ID2= 2 ( 0023):	6.14	0.228	12.67	30.23
=====				
ID = 3 ( 0022):	62.44	1.955	12.75	83.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

---

-----

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	62.44	1.955	12.75	83.83
+ ID2= 2 ( 0009):	24.20	1.250	12.75	41.91
=====				
ID = 1 ( 0022):	86.64	3.206	12.75	72.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

---

-----

V V I SSSSS U U A L (v 6.2.2015)

V V I SS U U A A L

V V I SS U U AAAAA L

V V I SS U U A A L

Post-Dev V0

```

      WV      I      SSSSS  UUUUU  A  A  LLLLL
      000    TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
      0  0    T      T  H  H  Y  Y  MM MM  0  0
      0  0    T      T  H  H  Y      M  M  0  0
      000    T      T  H  H  Y      M  M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \d30a8864-53f3-4e3e-b2b0-9d029294de2d\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \d30a8864-53f3-4e3e-b2b0-9d029294de2d\scen

DATE: 10-18-2024

TIME: 12:08:55

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----

\*\*\*\*\*  
 \*\* SIMULATION : K. 50yr 24hr 15min SCS Type I \*\*  
 \*\*\*\*\*

```

-----
|  READ STORM  |  Filename: C:\Users\rdemesa\AppData
|              |              ata\Local\Temp\
|              |
|              |  77c03063-8c4f-41dc-868b-881b05d4a065\83cc3826
| Ptotal=120.77 mm |  Comments: K. 50yr 24hr 15min SCS Type II
-----

```

TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN



Post-Dev V0

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	6.25	2.17	12.50	17.39	18.75	2.17
0.25	1.33	6.50	2.17	12.75	8.94	19.00	2.17
0.50	1.33	6.75	2.17	13.00	8.94	19.25	2.17
0.75	1.33	7.00	2.17	13.25	6.52	19.50	2.17
1.00	1.33	7.25	2.66	13.50	6.52	19.75	2.17
1.25	1.33	7.50	2.66	13.75	5.07	20.00	2.17
1.50	1.33	7.75	2.66	14.00	5.07	20.25	1.45
1.75	1.33	8.00	2.66	14.25	3.62	20.50	1.45
2.00	1.33	8.25	3.14	14.50	3.62	20.75	1.45
2.25	1.57	8.50	3.14	14.75	3.62	21.00	1.45
2.50	1.57	8.75	3.38	15.00	3.62	21.25	1.45
2.75	1.57	9.00	3.38	15.25	3.62	21.50	1.45
3.00	1.57	9.25	3.86	15.50	3.62	21.75	1.45
3.25	1.57	9.50	3.86	15.75	3.62	22.00	1.45
3.50	1.57	9.75	4.35	16.00	3.62	22.25	1.45
3.75	1.57	10.00	4.35	16.25	2.17	22.50	1.45
4.00	1.57	10.25	5.56	16.50	2.17	22.75	1.45
4.25	1.93	10.50	5.56	16.75	2.17	23.00	1.45
4.50	1.93	10.75	7.49	17.00	2.17	23.25	1.45
4.75	1.93	11.00	7.49	17.25	2.17	23.50	1.45
5.00	1.93	11.25	11.59	17.50	2.17	23.75	1.45
5.25	1.93	11.50	11.59	17.75	2.17	24.00	1.45
5.50	1.93	11.75	35.75	18.00	2.17		
5.75	1.93	12.00	147.82	18.25	2.17		
6.00	1.93	12.25	17.39	18.50	2.17		

-----  
-

CALIB			
NASHYD ( 0009)	Area (ha)=	24.20	Curve Number (CN)= 64.7
ID= 1 DT= 5.0 min	Ia (mm)=	8.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.55	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17

Post-Dev V0

0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45

Post-Dev V0

4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 1.502 (i)  
 TIME TO PEAK (hrs)= 12.667  
 RUNOFF VOLUME (mm)= 50.037  
 TOTAL RAINFALL (mm)= 120.770  
 RUNOFF COEFFICIENT = 0.414

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB			
NASHYD ( 0013)	Area (ha)=	2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min	Ia (mm)=	4.74	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.49	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17

Post-Dev V0

0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45

Post-Dev V0

5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.197 (i)  
 TIME TO PEAK (hrs)= 12.583  
 RUNOFF VOLUME (mm)= 61.959  
 TOTAL RAINFALL (mm)= 120.770  
 RUNOFF COEFFICIENT = 0.513

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD ( 0023)	Area (ha)= 6.14	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 13.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.53		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17

Post-Dev V0

1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45

Post-Dev V0

5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.280 (i)  
 TIME TO PEAK (hrs)= 12.667  
 RUNOFF VOLUME (mm)= 36.801  
 TOTAL RAINFALL (mm)= 120.770  
 RUNOFF COEFFICIENT = 0.305

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB	
STANDHYD ( 0001)	Area (ha)= 5.20
ID= 1 DT= 5.0 min	Total Imp(%)= 69.80 Dir. Conn.(%)= 61.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.63	1.57
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	186.19	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17

Post-Dev V0

0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45



Post-Dev VO

4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Max.Eff.Inten.(mm/hr)=	147.82	123.81
over (min)	5.00	10.00
Storage Coeff. (min)=	3.91 (ii)	6.90 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.25	0.14

\*TOTALS\*

PEAK FLOW (cms)=	1.29	0.44	1.727 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	119.77	66.16	99.13
TOTAL RAINFALL (mm)=	120.77	120.77	120.77
RUNOFF COEFFICIENT =	0.99	0.55	0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---

CALIB	
STANDHYD ( 0007)	Area (ha)= 1.73
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00   Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.87	0.87
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	107.39	30.00
Mannings n =	0.013	0.250

Post-Dev V0

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45

Post-Dev VO

3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Max.Eff.Inten.(mm/hr)=	147.82	85.98
over (min)	5.00	10.00
Storage Coeff. (min)=	2.81 (ii)	9.12 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.12

			*TOTALS*
PEAK FLOW (cms)=	0.35	0.15	0.503 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	119.77	58.30	89.03
TOTAL RAINFALL (mm)=	120.77	120.77	120.77
RUNOFF COEFFICIENT =	0.99	0.48	0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0014) |  
ID= 1 DT= 5.0 min

Area (ha)= 14.40  
 Total Imp(%)= 81.70 Dir. Conn.(%)= 79.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	11.76	2.64
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	309.84	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45

Post-Dev VO

2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Max.Eff.Inten.(mm/hr)=	147.82	103.74
over (min)	5.00	10.00
Storage Coeff. (min)=	5.30 (ii)	8.13 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.21	0.13

\*TOTALS\*

Post-Dev V0

PEAK FLOW	(cms)=	4.48	0.58	5.052 (iii)
TIME TO PEAK	(hrs)=	12.25	12.25	12.25
RUNOFF VOLUME	(mm)=	119.77	62.32	107.88
TOTAL RAINFALL	(mm)=	120.77	120.77	120.77
RUNOFF COEFFICIENT	=	0.99	0.52	0.89

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0020)				
1 + 2 = 3				
-----	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	1.727	12.25	99.13
+ ID2= 2 ( 0014):	14.40	5.052	12.25	107.88
=====				
ID = 3 ( 0020):	19.60	6.779	12.25	105.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0020)				
3 + 2 = 1				
-----	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	6.779	12.25	105.56
+ ID2= 2 ( 0007):	1.73	0.503	12.25	89.03
=====				
ID = 1 ( 0020):	21.33	7.282	12.25	104.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

RESERVOIR( 0010)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min				
-----				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.5160	0.8710
	0.0000	0.0690	0.6160	0.9610
	0.0280	0.1400	0.7220	1.0540
	0.0400	0.2140	0.8340	1.1480

Post-Dev V0

0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	7.282	12.25	104.22
OUTFLOW: ID= 1 ( 0010)	21.330	0.940	12.75	100.95

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.91  
 TIME SHIFT OF PEAK FLOW (min)= 30.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.2361

-----  
 -

CALIB	Area (ha)= 2.64		
STANDHYD ( 0016)	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17

Post-Dev V0

1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45



Post-Dev V0

5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Max.Eff.Inten.(mm/hr)= 147.82 85.98  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 3.19 (ii) 9.50 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.27 0.12

\*TOTALS\*

PEAK FLOW (cms)= 0.54 0.22 0.762 (iii)  
 TIME TO PEAK (hrs)= 12.25 12.25 12.25  
 RUNOFF VOLUME (mm)= 119.77 58.30 89.03  
 TOTAL RAINFALL (mm)= 120.77 120.77 120.77  
 RUNOFF COEFFICIENT = 0.99 0.48 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -  
 -----  

CALIB	Area (ha)=	30.00	
STANDHYD ( 0021)	Total Imp(%)=	77.00	Dir. Conn.(%)= 76.00
ID= 1 DT= 5.0 min			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	23.10	6.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	447.21	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

Post-Dev VO

0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45

Post-Dev VO

4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Max.Eff.Inten.(mm/hr)=	147.82	91.80
over (min)	5.00	10.00
Storage Coeff. (min)=	6.61 (ii)	9.08 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.18	0.12

			*TOTALS*
PEAK FLOW (cms)=	8.61	1.27	9.886 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	119.77	59.69	105.35
TOTAL RAINFALL (mm)=	120.77	120.77	120.77
RUNOFF COEFFICIENT =	0.99	0.49	0.87

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
      THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

-----  
| ADD HYD ( 0018) |  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)

Post-Dev V0

ID1= 1 ( 0016):	2.64	0.762	12.25	89.03
+ ID2= 2 ( 0021):	30.00	9.886	12.25	105.35
=====				
ID = 3 ( 0018):	32.64	10.648	12.25	104.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | RESERVOIR( 0019) |  
 | IN= 2---> OUT= 1 |  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3280	1.2260
0.0070	0.1100	0.4140	1.3640
0.0240	0.2220	0.5060	1.5040
0.0330	0.3380	0.6050	1.6470
0.0400	0.4570	0.7100	1.7930
0.0460	0.5780	0.8210	1.9410
0.0740	0.7030	0.9370	2.0920
0.1220	0.8300	1.0580	2.2450
0.1810	0.9590	1.1840	2.4020
0.2500	1.0910	1.3150	2.5610

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0018)	32.640	10.648	12.25	104.03
OUTFLOW: ID= 1 ( 0019)	32.640	0.944	12.92	103.47

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.87  
 TIME SHIFT OF PEAK FLOW (min)= 40.00  
 MAXIMUM STORAGE USED (ha.m.)= 2.1013

-----  
 | ADD HYD ( 0022) |  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0010):	21.33	0.940	12.75	100.95
+ ID2= 2 ( 0013):	2.33	0.197	12.58	61.96
=====				
ID = 3 ( 0022):	23.66	1.134	12.67	97.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Post-Dev V0

ADD HYD ( 0022)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1=	3 ( 0022):	23.66	1.134	12.67	97.11
+	ID2= 2 ( 0019):	32.64	0.944	12.92	103.47
=====					
ID =	1 ( 0022):	56.30	2.061	12.75	100.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0022)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1=	1 ( 0022):	56.30	2.061	12.75	100.80
+	ID2= 2 ( 0023):	6.14	0.280	12.67	36.80
=====					
ID =	3 ( 0022):	62.44	2.340	12.75	94.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0022)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1=	3 ( 0022):	62.44	2.340	12.75	94.51
+	ID2= 2 ( 0009):	24.20	1.502	12.67	50.04
=====					
ID =	1 ( 0022):	86.64	3.841	12.75	82.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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

```
V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
VV   I  SSSSS  UUUUU  A  A  LLLLL
```

Post-Dev V0

```

      000   TTTT   TTTT   H   H   Y   Y   M   M   000   TM
      0 0   T     T     H   H   Y Y   MM MM 0 0
      0 0   T     T     H   H   Y     M   M 0 0
      000   T     T     H   H   Y     M   M 000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \0fb8a824-a98d-4d17-b6f6-b721cedc71e3\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \0fb8a824-a98d-4d17-b6f6-b721cedc71e3\scen

DATE: 10-18-2024

TIME: 12:08:54

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : L. 100yr 24hr 15min SCS Type \*\*  
 \*\*\*\*\*

```

-----
|  READ STORM  |  Filename: C:\Users\rdemesa\AppData
|              |              ata\Local\Temp\
|              |
|              |  77c03063-8c4f-41dc-868b-881b05d4a065\19444fb3
| Ptotal=132.74 mm |  Comments: L. 100yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

Post-Dev VO

0.00	0.00	6.25	2.39	12.50	19.11	18.75	2.39
0.25	1.46	6.50	2.39	12.75	9.82	19.00	2.39
0.50	1.46	6.75	2.39	13.00	9.82	19.25	2.39
0.75	1.46	7.00	2.39	13.25	7.17	19.50	2.39
1.00	1.46	7.25	2.92	13.50	7.17	19.75	2.39
1.25	1.46	7.50	2.92	13.75	5.58	20.00	2.39
1.50	1.46	7.75	2.92	14.00	5.58	20.25	1.59
1.75	1.46	8.00	2.92	14.25	3.98	20.50	1.59
2.00	1.46	8.25	3.45	14.50	3.98	20.75	1.59
2.25	1.73	8.50	3.45	14.75	3.98	21.00	1.59
2.50	1.73	8.75	3.72	15.00	3.98	21.25	1.59
2.75	1.73	9.00	3.72	15.25	3.98	21.50	1.59
3.00	1.73	9.25	4.25	15.50	3.98	21.75	1.59
3.25	1.73	9.50	4.25	15.75	3.98	22.00	1.59
3.50	1.73	9.75	4.78	16.00	3.98	22.25	1.59
3.75	1.73	10.00	4.78	16.25	2.39	22.50	1.59
4.00	1.73	10.25	6.11	16.50	2.39	22.75	1.59
4.25	2.12	10.50	6.11	16.75	2.39	23.00	1.59
4.50	2.12	10.75	8.23	17.00	2.39	23.25	1.59
4.75	2.12	11.00	8.23	17.25	2.39	23.50	1.59
5.00	2.12	11.25	12.74	17.50	2.39	23.75	1.59
5.25	2.12	11.50	12.74	17.75	2.39	24.00	1.59
5.50	2.12	11.75	39.29	18.00	2.39		
5.75	2.12	12.00	162.47	18.25	2.39		
6.00	2.12	12.25	19.11	18.50	2.39		

-----

CALIB	
NASHYD ( 0009)	Area (ha)= 24.20 Curve Number (CN)= 64.7
ID= 1 DT= 5.0 min	Ia (mm)= 8.80 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.55

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39

Post-Dev VO

0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59



Post-Dev V0

5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 1.766 (i)  
 TIME TO PEAK (hrs)= 12.667  
 RUNOFF VOLUME (mm)= 58.512  
 TOTAL RAINFALL (mm)= 132.740  
 RUNOFF COEFFICIENT = 0.441

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB			
NASHYD ( 0013)		Area (ha)= 2.33	Curve Number (CN)= 71.5
ID= 1 DT= 5.0 min		Ia (mm)= 4.74	# of Linear Res.(N)= 3.00
-----		U.H. Tp(hrs)= 0.49	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39

Post-Dev V0

1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59

Post-Dev V0

5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.228 (i)  
 TIME TO PEAK (hrs)= 12.583  
 RUNOFF VOLUME (mm)= 71.465  
 TOTAL RAINFALL (mm)= 132.740  
 RUNOFF COEFFICIENT = 0.538

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB			
NASHYD ( 0023)	Area (ha)= 6.14	Curve Number (CN)= 55.0	
ID= 1 DT= 5.0 min	Ia (mm)= 13.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.53		

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39

Post-Dev VO

1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59

Post-Dev V0

5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.336 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 43.770

TOTAL RAINFALL (mm)= 132.740

RUNOFF COEFFICIENT = 0.330

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	
STANDHYD ( 0001)	Area (ha)= 5.20
ID= 1 DT= 5.0 min	Total Imp(%)= 69.80 Dir. Conn.(%)= 61.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.63	1.57
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	186.19	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39

Post-Dev V0

0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59

Post-Dev VO

5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Max.Eff.Inten.(mm/hr)=	162.47	141.88
over (min)	5.00	10.00
Storage Coeff. (min)=	3.76 (ii)	6.65 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.25	0.14

\*TOTALS\*

PEAK FLOW (cms)=	1.42	0.51	1.930 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	131.74	76.00	110.28
TOTAL RAINFALL (mm)=	132.74	132.74	132.74
RUNOFF COEFFICIENT =	0.99	0.57	0.83

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
      THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB	
STANDHYD ( 0007)	Area (ha)= 1.73
ID= 1 DT= 5.0 min	Total Imp(%)= 50.00   Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.87	0.87
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	107.39	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59



Post-Dev V0

3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Max.Eff.Inten.(mm/hr)= 162.47 99.35  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.70 (ii) 7.59 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.29 0.13

\*TOTALS\*

PEAK FLOW (cms)= 0.39 0.19 0.574 (iii)  
 TIME TO PEAK (hrs)= 12.25 12.25 12.25  
 RUNOFF VOLUME (mm)= 131.74 67.47 99.60  
 TOTAL RAINFALL (mm)= 132.74 132.74 132.74  
 RUNOFF COEFFICIENT = 0.99 0.51 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0

```

-----
| CALIB                               |
| STANDHYD ( 0014)                   |
| ID= 1 DT= 5.0 min                   |
-----

```

```

Area      (ha)= 14.40
Total Imp(%)= 81.70   Dir. Conn.(%)= 79.30

```

```

                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=      11.76      2.64
Dep. Storage    (mm)=       1.00      5.00
Average Slope   (%)=       0.50      2.00
Length          (m)=     309.84     30.00
Mannings n      =       0.013     0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59

Post-Dev VO

2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Max.Eff.Inten.(mm/hr)=	162.47	119.36
over (min)	5.00	10.00
Storage Coeff. (min)=	5.11 (ii)	7.83 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.21	0.13

PEAK FLOW (cms)=	4.94	0.67	*TOTALS*
			5.619 (iii)

Post-Dev V0

TIME TO PEAK	(hrs)=	12.25	12.25	12.25
RUNOFF VOLUME	(mm)=	131.74	71.84	119.34
TOTAL RAINFALL	(mm)=	132.74	132.74	132.74
RUNOFF COEFFICIENT	=	0.99	0.54	0.90

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0020)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	1.930	12.25	110.28
+ ID2= 2 ( 0014):	14.40	5.619	12.25	119.34
=====				
ID = 3 ( 0020):	19.60	7.548	12.25	116.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0020)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	7.548	12.25	116.94
+ ID2= 2 ( 0007):	1.73	0.574	12.25	99.60
=====				
ID = 1 ( 0020):	21.33	8.123	12.25	115.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

RESERVOIR( 0010)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.5160	0.8710
	0.0000	0.0690	0.6160	0.9610
	0.0280	0.1400	0.7220	1.0540
	0.0400	0.2140	0.8340	1.1480
	0.0720	0.2900	0.9510	1.2440

Post-Dev V0

0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	8.123	12.25	115.53
OUTFLOW: ID= 1 ( 0010)	21.330	1.086	12.75	112.27

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.37  
 TIME SHIFT OF PEAK FLOW (min)= 30.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.3533

---

CALIB			
STANDHYD ( 0016)			
ID= 1 DT= 5.0 min	Area (ha)= 2.64	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39

Post-Dev V0

1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59

Post-Dev V0

5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Max.Eff.Inten.(mm/hr)=	162.47	99.35
over (min)	5.00	10.00
Storage Coeff. (min)=	3.07 (ii)	7.96 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.27	0.13

\*TOTALS\*

PEAK FLOW (cms)=	0.59	0.28	0.870 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	131.74	67.47	99.60
TOTAL RAINFALL (mm)=	132.74	132.74	132.74
RUNOFF COEFFICIENT =	0.99	0.51	0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
    THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

CALIB	
STANDHYD ( 0021)	Area (ha)= 30.00
ID= 1 DT= 5.0 min	Total Imp(%)= 77.00   Dir. Conn.(%)= 76.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	23.10	6.90
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	447.21	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39

Post-Dev V0

0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59



Post-Dev VO

4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Max.Eff.Inten.(mm/hr)=	162.47	105.92
over (min)	5.00	10.00
Storage Coeff. (min)=	6.36 (ii)	8.74 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.18	0.12

			*TOTALS*
PEAK FLOW (cms)=	9.54	1.50	11.035 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	131.74	68.98	116.68
TOTAL RAINFALL (mm)=	132.74	132.74	132.74
RUNOFF COEFFICIENT =	0.99	0.52	0.88

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---

-----				
ADD HYD ( 0018)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
-----	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0016):	2.64	0.870	12.25	99.60

Post-Dev V0

+ ID2= 2 ( 0021): 30.00 11.035 12.25 116.68

=====  
ID = 3 ( 0018): 32.64 11.905 12.25 115.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| RESERVOIR( 0019) |  
| IN= 2---> OUT= 1 |  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.3280	1.2260
0.0070	0.1100	0.4140	1.3640
0.0240	0.2220	0.5060	1.5040
0.0330	0.3380	0.6050	1.6470
0.0400	0.4570	0.7100	1.7930
0.0460	0.5780	0.8210	1.9410
0.0740	0.7030	0.9370	2.0920
0.1220	0.8300	1.0580	2.2450
0.1810	0.9590	1.1840	2.4020
0.2500	1.0910	1.3150	2.5610

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0018)	32.640	11.905	12.25	115.30
OUTFLOW: ID= 1 ( 0019)	32.640	1.108	12.92	114.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.30  
TIME SHIFT OF PEAK FLOW (min)= 40.00  
MAXIMUM STORAGE USED (ha.m.)= 2.3077

-----  
| ADD HYD ( 0022) |  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0010):	21.33	1.086	12.75	112.27
+ ID2= 2 ( 0013):	2.33	0.228	12.58	71.47
===== ID = 3 ( 0022):	23.66	1.312	12.67	108.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
ADD HYD ( 0022)

Post-Dev V0

3 + 2 = 1		AREA	QPEAK	TPEAK	R.V.
-----		(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):		23.66	1.312	12.67	108.25
+ ID2= 2 ( 0019):		32.64	1.108	12.92	114.73
=====					
ID = 1 ( 0022):		56.30	2.402	12.75	112.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

-

ADD HYD ( 0022)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0022):		56.30	2.402	12.75	112.01
+ ID2= 2 ( 0023):		6.14	0.336	12.67	43.77
=====					
ID = 3 ( 0022):		62.44	2.736	12.75	105.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

-

ADD HYD ( 0022)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):		62.44	2.736	12.75	105.30
+ ID2= 2 ( 0009):		24.20	1.766	12.67	58.51
=====					
ID = 1 ( 0022):		86.64	4.499	12.75	92.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

-

Post-Dev V0 Hazel

=====

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  WV   I  SSSSS  UUUUU  A  A  LLLLL

```

```

000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000

```

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \abe7098c-7ad9-4e59-8778-22fbc7afb0b9\scen

Summary filename:

C:\Users\rdemesa\AppData\Local\Civica\XH5\75a6e1d3-2ab2-4644-ad95-3e2548ba76ff  
 \abe7098c-7ad9-4e59-8778-22fbc7afb0b9\scen

DATE: 10-18-2024

TIME: 12:18:39

USER:

COMMENTS: \_\_\_\_\_

-----

```

*****
** SIMULATION : Hazel          **
*****

```

-----

| READ STORM | Filename: C:\Users\rdemesa\AppData

Post-Dev VO Hazel

ata\Local\Temp\

39cfd154-4ab2-498f-8246-b01acd432600\ecf23fba

Ptotal=222.76 mm | Comments: Hazel

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	7.00	18.94	14.00	7.80	21.00	1.11
1.00	1.11	8.00	18.94	15.00	4.46	22.00	1.11
2.00	1.11	9.00	51.24	16.00	4.46	23.00	1.11
3.00	1.11	10.00	51.24	17.00	2.23	24.00	1.11
4.00	1.11	11.00	14.48	18.00	2.23		
5.00	6.68	12.00	14.48	19.00	1.11		
6.00	6.68	13.00	7.80	20.00	1.11		

CALIB			
NASHYD ( 0009)	Area (ha)=	24.20	Curve Number (CN)= 81.0
ID= 1 DT= 5.0 min	Ia (mm)=	8.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.55	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11

Post-Dev VO Hazel

1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11

Post-Dev VO Hazel

5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Unit Hyd Qpeak (cms)= 1.681

PEAK FLOW (cms)= 2.959 (i)  
 TIME TO PEAK (hrs)= 11.083  
 RUNOFF VOLUME (mm)= 167.352  
 TOTAL RAINFALL (mm)= 222.760  
 RUNOFF COEFFICIENT = 0.751

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB			
NASHYD ( 0013)			
ID= 1 DT= 5.0 min			
Area	(ha)=	2.33	Curve Number (CN)= 85.0
Ia	(mm)=	4.74	# of Linear Res.(N)= 3.00
U.H. Tp	(hrs)=	0.49	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11

Post-Dev VO Hazel

1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11



Post-Dev VO Hazel

5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.303 (i)  
 TIME TO PEAK (hrs)= 11.000  
 RUNOFF VOLUME (mm)= 180.831  
 TOTAL RAINFALL (mm)= 222.760  
 RUNOFF COEFFICIENT = 0.812

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB			
NASHYD ( 0023)			
ID= 1	DT= 5.0 min	Area (ha)= 6.14	Curve Number (CN)= 74.0
		Ia (mm)= 13.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.53	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11

Post-Dev VO Hazel

1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11

Post-Dev VO Hazel

5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Unit Hyd Qpeak (cms)= 0.442

PEAK FLOW (cms)= 0.682 (i)  
 TIME TO PEAK (hrs)= 11.083  
 RUNOFF VOLUME (mm)= 147.148  
 TOTAL RAINFALL (mm)= 222.760  
 RUNOFF COEFFICIENT = 0.661

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----

CALIB	
STANDHYD ( 0001)	Area (ha)= 5.20
ID= 1 DT= 5.0 min	Total Imp(%)= 69.80 Dir. Conn.(%)= 61.50

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.63	1.57
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	186.19	20.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11

Post-Dev VO Hazel

1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11
1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11

Post-Dev V0 Hazel

5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11
5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Max.Eff.Inten.(mm/hr)= 51.24 62.66  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 5.97 (ii) 10.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.19 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.46 0.27 0.727 (iii)  
 TIME TO PEAK (hrs)= 10.58 11.00 11.00  
 RUNOFF VOLUME (mm)= 221.76 186.50 208.18  
 TOTAL RAINFALL (mm)= 222.76 222.76 222.76  
 RUNOFF COEFFICIENT = 1.00 0.84 0.93

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 84.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -  
 -----  

CALIB	Area (ha)=	1.73	
STANDHYD ( 0007)	Total Imp(%)=	50.00	Dir. Conn.(%)= 50.00
ID= 1 DT= 5.0 min			

 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.87	0.87
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	107.39	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

Post-Dev VO Hazel

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11
1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11

Post-Dev VO Hazel

4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11
5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Max.Eff.Inten.(mm/hr)=	51.24	48.16
over (min)	5.00	15.00
Storage Coeff. (min)=	4.29 (ii)	12.24 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.23	0.09

			*TOTALS*
PEAK FLOW (cms)=	0.12	0.11	0.238 (iii)
TIME TO PEAK (hrs)=	10.33	11.00	11.00
RUNOFF VOLUME (mm)=	221.76	178.17	199.96
TOTAL RAINFALL (mm)=	222.76	222.76	222.76
RUNOFF COEFFICIENT =	1.00	0.80	0.90

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 84.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev VO Hazel

```

-----
| CALIB |
| STANDHYD ( 0014) | Area (ha)= 14.40
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.70 Dir. Conn.(%)= 79.30
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	11.76	2.64
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	309.84	30.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11
1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11



Post-Dev VO Hazel

2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11
5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Max.Eff.Inten.(mm/hr)=	51.24	55.09
over (min)	10.00	15.00
Storage Coeff. (min)=	8.10 (ii)	12.42 (ii)
Unit Hyd. Tpeak (min)=	10.00	15.00
Unit Hyd. peak (cms)=	0.13	0.08

\*TOTALS\*

Post-Dev VO Hazel

PEAK FLOW	(cms)=	1.63	0.40	2.026 (iii)
TIME TO PEAK	(hrs)=	11.00	11.00	11.00
RUNOFF VOLUME	(mm)=	221.76	182.57	213.65
TOTAL RAINFALL	(mm)=	222.76	222.76	222.76
RUNOFF COEFFICIENT	=	1.00	0.82	0.96

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 84.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
-

ADD HYD ( 0020)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	5.20	0.727	11.00	208.18
+ ID2= 2 ( 0014):	14.40	2.026	11.00	213.65
=====				
ID = 3 ( 0020):	19.60	2.753	11.00	212.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

ADD HYD ( 0020)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0020):	19.60	2.753	11.00	212.20
+ ID2= 2 ( 0007):	1.73	0.238	11.00	199.96
=====				
ID = 1 ( 0020):	21.33	2.990	11.00	211.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
-

RESERVOIR( 0010)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.5160	0.8710
	0.0000	0.0690	0.6160	0.9610
	0.0280	0.1400	0.7220	1.0540
	0.0400	0.2140	0.8340	1.1480

Post-Dev VO Hazel

0.0720	0.2900	0.9510	1.2440
0.1220	0.4510	1.0730	1.3430
0.1840	0.5310	1.2000	1.4430
0.2550	0.6130	1.3320	1.5460
0.3350	0.6970	1.4680	1.6500
0.4220	0.7830	1.6090	1.7570

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0020)	21.330	2.990	11.00	211.21
OUTFLOW: ID= 1 ( 0010)	21.330	1.895	11.17	207.94

PEAK FLOW REDUCTION [Qout/Qin](%)= 63.38  
 TIME SHIFT OF PEAK FLOW (min)= 10.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.9749

-----  
 -

CALIB	Area (ha)= 2.64		
STANDHYD ( 0016)	Total Imp(%)= 50.00	Dir. Conn.(%)= 50.00	
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.32	1.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	0.50	2.00
Length (m)=	132.66	30.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11

Post-Dev VO Hazel

1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11
1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11
4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11

Post-Dev VO Hazel

5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11
5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Max.Eff.Inten.(mm/hr)= 51.24 48.16  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.87 (ii) 12.82 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.19 0.17 0.363 (iii)  
 TIME TO PEAK (hrs)= 10.42 11.00 11.00  
 RUNOFF VOLUME (mm)= 221.76 178.17 199.96  
 TOTAL RAINFALL (mm)= 222.76 222.76 222.76  
 RUNOFF COEFFICIENT = 1.00 0.80 0.90

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 84.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -

CALIB	Area (ha)=	30.00	
STANDHYD ( 0021)	Total Imp(%)=	77.00	Dir. Conn.(%)= 76.00
ID= 1 DT= 5.0 min			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	23.10	6.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	0.50	2.00
Length	(m)=	447.21	20.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

Post-Dev VO Hazel

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.333	6.68	12.583	14.48	18.83	2.23
0.167	0.00	6.417	6.68	12.667	14.48	18.92	2.23
0.250	0.00	6.500	6.68	12.750	14.48	19.00	2.23
0.333	0.00	6.583	6.68	12.833	14.48	19.08	1.11
0.417	0.00	6.667	6.68	12.917	14.48	19.17	1.11
0.500	0.00	6.750	6.68	13.000	14.48	19.25	1.11
0.583	0.00	6.833	6.68	13.083	7.80	19.33	1.11
0.667	0.00	6.917	6.68	13.167	7.80	19.42	1.11
0.750	0.00	7.000	6.68	13.250	7.80	19.50	1.11
0.833	0.00	7.083	18.94	13.333	7.80	19.58	1.11
0.917	0.00	7.167	18.94	13.417	7.80	19.67	1.11
1.000	0.00	7.250	18.94	13.500	7.80	19.75	1.11
1.083	1.11	7.333	18.94	13.583	7.80	19.83	1.11
1.167	1.11	7.417	18.94	13.667	7.80	19.92	1.11
1.250	1.11	7.500	18.94	13.750	7.80	20.00	1.11
1.333	1.11	7.583	18.94	13.833	7.80	20.08	1.11
1.417	1.11	7.667	18.94	13.917	7.80	20.17	1.11
1.500	1.11	7.750	18.94	14.000	7.80	20.25	1.11
1.583	1.11	7.833	18.94	14.083	7.80	20.33	1.11
1.667	1.11	7.917	18.94	14.167	7.80	20.42	1.11
1.750	1.11	8.000	18.94	14.250	7.80	20.50	1.11
1.833	1.11	8.083	18.94	14.333	7.80	20.58	1.11
1.917	1.11	8.167	18.94	14.417	7.80	20.67	1.11
2.000	1.11	8.250	18.94	14.500	7.80	20.75	1.11
2.083	1.11	8.333	18.94	14.583	7.80	20.83	1.11
2.167	1.11	8.417	18.94	14.667	7.80	20.92	1.11
2.250	1.11	8.500	18.94	14.750	7.80	21.00	1.11
2.333	1.11	8.583	18.94	14.833	7.80	21.08	1.11
2.417	1.11	8.667	18.94	14.917	7.80	21.17	1.11
2.500	1.11	8.750	18.94	15.000	7.80	21.25	1.11
2.583	1.11	8.833	18.94	15.083	4.46	21.33	1.11
2.667	1.11	8.917	18.94	15.167	4.46	21.42	1.11
2.750	1.11	9.000	18.94	15.250	4.46	21.50	1.11
2.833	1.11	9.083	51.24	15.333	4.46	21.58	1.11
2.917	1.11	9.167	51.24	15.417	4.46	21.67	1.11
3.000	1.11	9.250	51.24	15.500	4.46	21.75	1.11
3.083	1.11	9.333	51.24	15.583	4.46	21.83	1.11
3.167	1.11	9.417	51.24	15.667	4.46	21.92	1.11
3.250	1.11	9.500	51.24	15.750	4.46	22.00	1.11
3.333	1.11	9.583	51.24	15.833	4.46	22.08	1.11
3.417	1.11	9.667	51.24	15.917	4.46	22.17	1.11
3.500	1.11	9.750	51.24	16.000	4.46	22.25	1.11
3.583	1.11	9.833	51.24	16.083	4.46	22.33	1.11
3.667	1.11	9.917	51.24	16.167	4.46	22.42	1.11
3.750	1.11	10.000	51.24	16.250	4.46	22.50	1.11
3.833	1.11	10.083	51.24	16.333	4.46	22.58	1.11
3.917	1.11	10.167	51.24	16.417	4.46	22.67	1.11
4.000	1.11	10.250	51.24	16.500	4.46	22.75	1.11

Post-Dev VO Hazel

4.083	1.11	10.333	51.24	16.583	4.46	22.83	1.11
4.167	1.11	10.417	51.24	16.667	4.46	22.92	1.11
4.250	1.11	10.500	51.24	16.750	4.46	23.00	1.11
4.333	1.11	10.583	51.24	16.833	4.46	23.08	1.11
4.417	1.11	10.667	51.24	16.917	4.46	23.17	1.11
4.500	1.11	10.750	51.24	17.000	4.46	23.25	1.11
4.583	1.11	10.833	51.24	17.083	2.23	23.33	1.11
4.667	1.11	10.917	51.24	17.167	2.23	23.42	1.11
4.750	1.11	11.000	51.24	17.250	2.23	23.50	1.11
4.833	1.11	11.083	14.48	17.333	2.23	23.58	1.11
4.917	1.11	11.167	14.48	17.417	2.23	23.67	1.11
5.000	1.11	11.250	14.48	17.500	2.23	23.75	1.11
5.083	6.68	11.333	14.48	17.583	2.23	23.83	1.11
5.167	6.68	11.417	14.48	17.667	2.23	23.92	1.11
5.250	6.68	11.500	14.48	17.750	2.23	24.00	1.11
5.333	6.68	11.583	14.48	17.833	2.23	24.08	1.11
5.417	6.68	11.667	14.48	17.917	2.23	24.17	1.11
5.500	6.68	11.750	14.48	18.000	2.23	24.25	1.11
5.583	6.68	11.833	14.48	18.083	2.23	24.33	1.11
5.667	6.68	11.917	14.48	18.167	2.23	24.42	1.11
5.750	6.68	12.000	14.48	18.250	2.23	24.50	1.11
5.833	6.68	12.083	14.48	18.333	2.23	24.58	1.11
5.917	6.68	12.167	14.48	18.417	2.23	24.67	1.11
6.000	6.68	12.250	14.48	18.500	2.23	24.75	1.11
6.083	6.68	12.333	14.48	18.583	2.23	24.83	1.11
6.167	6.68	12.417	14.48	18.667	2.23	24.92	1.11
6.250	6.68	12.500	14.48	18.750	2.23	25.00	1.11

Max.Eff.Inten.(mm/hr)=	51.24	50.46
over (min)	10.00	15.00
Storage Coeff. (min)=	10.10 (ii)	13.87 (ii)
Unit Hyd. Tpeak (min)=	10.00	15.00
Unit Hyd. peak (cms)=	0.11	0.08

			*TOTALS*
PEAK FLOW (cms)=	3.25	0.96	4.203 (iii)
TIME TO PEAK (hrs)=	11.00	11.00	11.00
RUNOFF VOLUME (mm)=	221.76	179.73	211.67
TOTAL RAINFALL (mm)=	222.76	222.76	222.76
RUNOFF COEFFICIENT =	1.00	0.81	0.95

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 84.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Post-Dev V0 Hazel

```

-----
| ADD HYD ( 0018) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0016):	2.64	0.363	11.00	199.96
+ ID2= 2 ( 0021):	30.00	4.203	11.00	211.67
=====				
ID = 3 ( 0018):	32.64	4.566	11.00	210.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0019) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----

```

OVERFLOW IS OFF

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.3280	1.2260
	0.0070	0.1100	0.4140	1.3640
	0.0240	0.2220	0.5060	1.5040
	0.0330	0.3380	0.6050	1.6470
	0.0400	0.4570	0.7100	1.7930
	0.0460	0.5780	0.8210	1.9410
	0.0740	0.7030	0.9370	2.0920
	0.1220	0.8300	1.0580	2.2450
	0.1810	0.9590	1.1840	2.4020
	0.2500	1.0910	1.3150	2.5610

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0018)	32.640	4.566	11.00	210.73
OUTFLOW: ID= 1 ( 0019)	32.640	2.144	11.33	210.15

PEAK FLOW REDUCTION [Qout/Qin](%)= 46.96  
 TIME SHIFT OF PEAK FLOW (min)= 20.00  
 MAXIMUM STORAGE USED (ha.m.)= 3.5688

```

-----
| ADD HYD ( 0022) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0010):	21.33	1.895	11.17	207.94
+ ID2= 2 ( 0013):	2.33	0.303	11.00	180.83
=====				
ID = 3 ( 0022):	23.66	2.190	11.17	205.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



Post-Dev V0 Hazel

---

-

---

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	23.66	2.190	11.17	205.27
+ ID2= 2 ( 0019):	32.64	2.144	11.33	210.15
=====				
ID = 1 ( 0022):	56.30	4.315	11.17	208.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

---

-

---

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0022):	56.30	4.315	11.17	208.10
+ ID2= 2 ( 0023):	6.14	0.682	11.08	147.15
=====				
ID = 3 ( 0022):	62.44	4.987	11.17	202.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

---

-

---

ADD HYD ( 0022)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0022):	62.44	4.987	11.17	202.11
+ ID2= 2 ( 0009):	24.20	2.959	11.08	167.35
=====				
ID = 1 ( 0022):	86.64	7.916	11.08	192.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

# APPENDIX F

## SWM Facility Design Calculations



Project No: 1060-6489  
 Project: Dundalk Southeast  
 File: SWMF1  
 Design by: AM  
 Checked by: NOC  
 Date: 2024.08.29

**Post-Development Scenario Water Quality Requirements for SWM Facility 1**

Areas Contributing	Area (ha)	% Imp	25mm RV (mm)	25mm RV (m <sup>3</sup> )
POST - 1	5.20	69.8	7.02	365
POST - 2	14.40	81.7	8.83	1272
SWMF 1	1.73	50.0	5.70	99
<b>Total</b>	<b>21.33</b>	<b>76.2</b>	<b>8.14</b>	<b>1736</b>
MOE Total WQ Volume (m <sup>3</sup> /ha)				235
MOE ED Volume (m <sup>3</sup> /ha)				40
MOE ED Volume (m <sup>3</sup> )				853
MOE PP Volume (m <sup>3</sup> /ha)				195
MOE PP Volume (m <sup>3</sup> )				4167
Pond Required PP Volume (m <sup>3</sup> )				4167
Pond Required ED Volume (m <sup>3</sup> )				1736
Provided PP Volume (m <sup>3</sup> )				7805
Provided ED Volume (m <sup>3</sup> )				2136



**STAGE STORAGE DISCHARGE - SWMF1**

**SWM Facility 1 Storage - Outflow Calculations**

Outlet Structure	
E.D. Orifice Diameter:	0.20 m
E.D. Orifice Invert Elevation:	507.10 m
V-notch angle	0 degrees
V-notch constant	0.00 const
V-notch invert	0.00 m
Rect weir length	0.40 m
Rect weir invert	507.40 m
Extended Detention Depth:	0.50 m

Main Cell Spillway	
Emergency Spill Elev.	509.10
Emerg Spill Bot. Width	15
Trap. Side Slopes	3 :1

PP  
ED  
HWL  
TOB

Elev. (m)	Pond Dimensions			Outlet Structure			Cell Spillway		Total Discharge (cu.m/s)	Storage (ha-m)
	Depth Above PP (m)	Area (sqm)	Volume (cu.m)	ED Orifice Discharge (cu.m/s)	V-notch Discharge (cu.m/s)	Rect. Weir Discharge (cu.m/s)	Emerg. Weir Ave. Width (m)	Emerg. Weir Discharge (cu.m/s)		
507.10	0.00	6744	0	0.0000	0.0000	0.000	0.00	0.000	0.000	0.000
507.20	0.10	6993	687	0.0000	0.0000	0.000	0.00	0.000	0.000	0.069
507.30	0.20	7241	1399	0.0282	0.0000	0.000	0.00	0.000	0.028	0.140
507.40	0.30	7490	2136	0.0398	0.0000	0.000	0.00	0.000	0.040	0.214
507.50	0.40	7695	2895	0.0488	0.0000	0.023	0.00	0.000	0.072	0.290
507.60	0.50	7900	4505	0.0563	0.0000	0.066	0.00	0.000	0.122	0.451
507.70	0.60	8104	5305	0.0630	0.0000	0.121	0.00	0.000	0.184	0.531
507.80	0.70	8309	6126	0.0690	0.0000	0.186	0.00	0.000	0.255	0.613
507.90	0.80	8514	6967	0.0745	0.0000	0.260	0.00	0.000	0.335	0.697
508.00	0.90	8719	7829	0.0797	0.0000	0.342	0.00	0.000	0.422	0.783
508.10	1.00	8923	8711	0.0845	0.0000	0.431	0.00	0.000	0.516	0.871
508.20	1.10	9128	9613	0.0891	0.0000	0.527	0.00	0.000	0.616	0.961
508.30	1.20	9333	10536	0.0934	0.0000	0.628	0.00	0.000	0.722	1.054
508.40	1.30	9538	11480	0.0976	0.0000	0.736	0.00	0.000	0.834	1.148
508.50	1.40	9742	12444	0.1015	0.0000	0.849	0.00	0.000	0.951	1.244
508.60	1.50	9947	13428	0.1054	0.0000	0.967	0.00	0.000	1.073	1.343
508.70	1.60	10152	14433	0.1091	0.0000	1.091	0.00	0.000	1.200	1.443
508.80	1.70	10357	15459	0.1127	0.0000	1.219	0.00	0.000	1.332	1.546
508.90	1.80	10561	16505	0.1161	0.0000	1.352	0.00	0.000	1.468	1.650
509.00	1.90	10766	17571	0.1195	0.0000	1.490	0.00	0.000	1.609	1.757
509.10	2.00	10971	18075	0.1228	0.0000	1.631	15.000	0.000	1.754	1.808
509.20	2.10	11151	19181	0.1259	0.0000	1.777	15.600	0.908	2.811	1.918
509.30	2.20	11331	20305	0.1291	0.0000	1.928	16.200	2.666	4.723	2.031
509.40	2.30	11511	21447	0.1321	0.0000	2.082	16.800	5.079	7.293	2.145



Project No: 1060-6489  
 Project: Dundalk Southeast  
 File: SWMF2  
 Design by: AM  
 Checked by: NCO  
 Date: 2024.10.18

**Post-Development Scenario Water Quality Requirements for SWM Facility 2**

Areas Contributing	Area (ha)	% Imp	25mm RV (mm)	25mm RV (m <sup>3</sup> )
POST - 3	30.00	77.0	8.47	2541
SWMF - 2	2.64	50.0	5.69	150
<b>Total</b>	<b>32.64</b>	<b>74.8</b>	<b>8.25</b>	<b>2691</b>
MOE Total WQ Volume (m <sup>3</sup> /ha)				233
MOE ED Volume (m <sup>3</sup> /ha)				40
MOE ED Volume (m <sup>3</sup> )				1306
MOE PP Volume (m <sup>3</sup> /ha)				193
MOE PP Volume (m <sup>3</sup> )				6300
Pond Required PP Volume (m <sup>3</sup> )				6300
Pond Required ED Volume (m <sup>3</sup> )				2691
Provided PP Volume (m <sup>3</sup> )				13580
Provided ED Volume (m <sup>3</sup> )				3381



**STAGE STORAGE DISCHARGE - SWMF2**
**SWM Facility 2 Storage - Outflow Calculations**

Outlet Structure	
E.D. Orifice Diameter:	0.179 m
E.D. Orifice Invert Elevation:	507.10 m
V-notch angle	0 degrees
V-notch constant	0.00 const
V-notch invert	0.00 m
Rect weir length	0.4 m
Rect weir invert	507.60 m
Extended Detention Depth:	0.30 m

Main Cell Spillway	
Emergency Spill Elev.	509.10
Emerg Spill Bot. Width	15
Trap. Side Slopes	3 :1

	Pond Dimensions			Outlet Structure			Cell Spillway		Total Discharge (cu.m/s)	Storage (ha-m)	
	Elev. (m)	Depth Above PP (m)	Area (sqm)	Volume (cu.m)	ED Orifice Discharge (cu.m/s)	V-notch Discharge (cu.m/s)	Rect. Weir Discharge (cu.m/s)	Emerg. Weir Ave. Width (m)			Emerg. Weir Discharge (cu.m/s)
PP	507.10	0.00	10792	0	0.0000	0.0000	0.000	0.00	0.000	0.000	0.000
	507.20	0.10	11112	1095	0.0073	0.0000	0.000	0.00	0.000	0.007	0.110
	507.30	0.20	11432	2222	0.0237	0.0000	0.000	0.00	0.000	0.024	0.222
ED	507.40	0.30	11752	3381	0.0327	0.0000	0.000	0.00	0.000	0.033	0.338
	507.50	0.40	12019	4570	0.0398	0.0000	0.000	0.00	0.000	0.040	0.457
	507.60	0.50	12287	5785	0.0457	0.0000	0.000	0.00	0.000	0.046	0.578
	507.70	0.60	12554	7027	0.0510	0.0000	0.023	0.00	0.000	0.074	0.703
	507.80	0.70	12821	8296	0.0557	0.0000	0.066	0.00	0.000	0.122	0.830
	507.90	0.80	13088	9591	0.0601	0.0000	0.121	0.00	0.000	0.181	0.959
	508.00	0.90	13356	10913	0.0642	0.0000	0.186	0.00	0.000	0.250	1.091
	508.10	1.00	13623	12262	0.0681	0.0000	0.260	0.00	0.000	0.328	1.226
	508.20	1.10	13890	13638	0.0717	0.0000	0.342	0.00	0.000	0.414	1.364
	508.30	1.20	14158	15040	0.0752	0.0000	0.431	0.00	0.000	0.506	1.504
	508.40	1.30	14425	16469	0.0785	0.0000	0.527	0.00	0.000	0.605	1.647
	508.50	1.40	14692	17925	0.0817	0.0000	0.628	0.00	0.000	0.710	1.793
	508.60	1.50	14960	19408	0.0847	0.0000	0.736	0.00	0.000	0.821	1.941
	508.70	1.60	15227	20917	0.0877	0.0000	0.849	0.00	0.000	0.937	2.092
	508.80	1.70	15494	22453	0.0905	0.0000	0.967	0.00	0.000	1.058	2.245
100 Year HWL	508.90	1.80	15761	24016	0.0933	0.0000	1.091	0.00	0.000	1.184	2.402
	509.00	1.90	16029	25606	0.0960	0.0000	1.219	0.00	0.000	1.315	2.561
Spillway Sill	509.10	2.00	16296	27333	0.0986	0.0000	1.352	15.000	0.000	1.451	2.733
	509.20	2.10	16562	28976	0.1012	0.0000	1.490	15.600	0.908	2.498	2.898
	509.30	2.20	16827	30645	0.1036	0.0000	1.631	16.200	2.666	4.401	3.065
TOB	509.40	2.30	17093	32341	0.1061	0.0000	1.777	16.800	5.079	6.963	3.234



---

## EXT-1 Conveyance Pipe

---

### Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

### Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00500	m/m
Diameter	1.35	m
Discharge	2.96	m <sup>3</sup> /s

### Results

Normal Depth	0.90	m
Flow Area	1.01	m <sup>2</sup>
Wetted Perimeter	2.58	m
Hydraulic Radius	0.39	m
Top Width	1.27	m
Critical Depth	0.92	m
Percent Full	66.7	%
Critical Slope	0.00470	m/m
Velocity	2.92	m/s
Velocity Head	0.43	m
Specific Energy	1.33	m
Froude Number	1.04	
Maximum Discharge	4.06	m <sup>3</sup> /s
Discharge Full	3.77	m <sup>3</sup> /s
Slope Full	0.00307	m/m
Flow Type	SuperCritical	

### GVF Input Data

Downstream Depth	0.00	m
Length	0.00	m
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	m
Profile Description		
Profile Headloss	0.00	m
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	66.67	%
Downstream Velocity	Infinity	m/s

---

## EXT-1 Conveyance Pipe

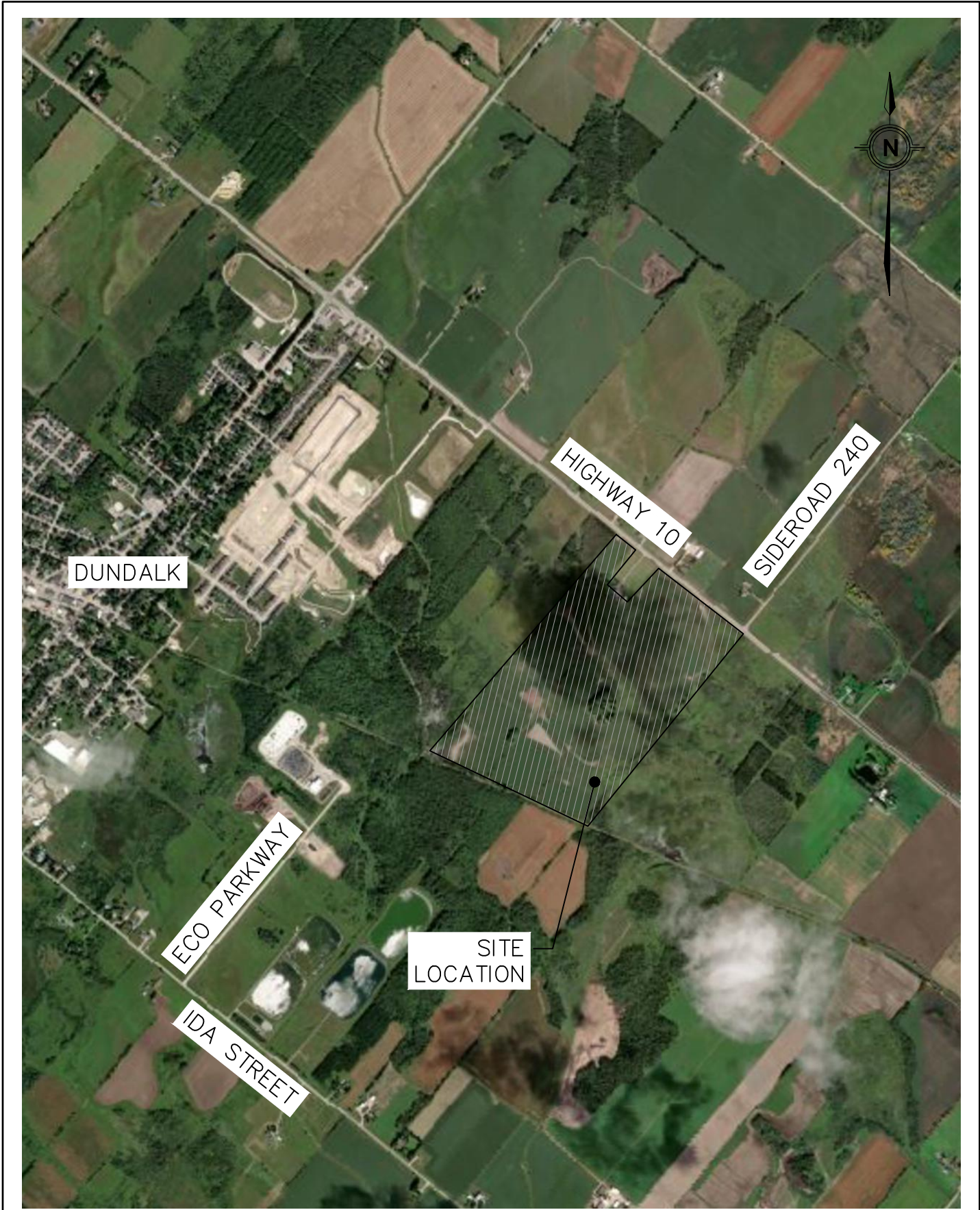
---


### GVF Output Data

Upstream Velocity	Infinity	m/s
Normal Depth	0.90	m
Critical Depth	0.92	m
Channel Slope	0.00500	m/m
Critical Slope	0.00470	m/m


# LIST OF FIGURES

Figure 1:	Site Location Plan
Figure 2:	Draft Plan
Figure 3:	Site Servicing Plan
Figure 4:	Site Grading Plan
Figure 5:	Pre-Development Catchment Plan
Figure 6:	Post Development Catchment Plan
Figure 7:	Stormwater Management Facilities Plans



Legend	
	= SUBJECT LANDS

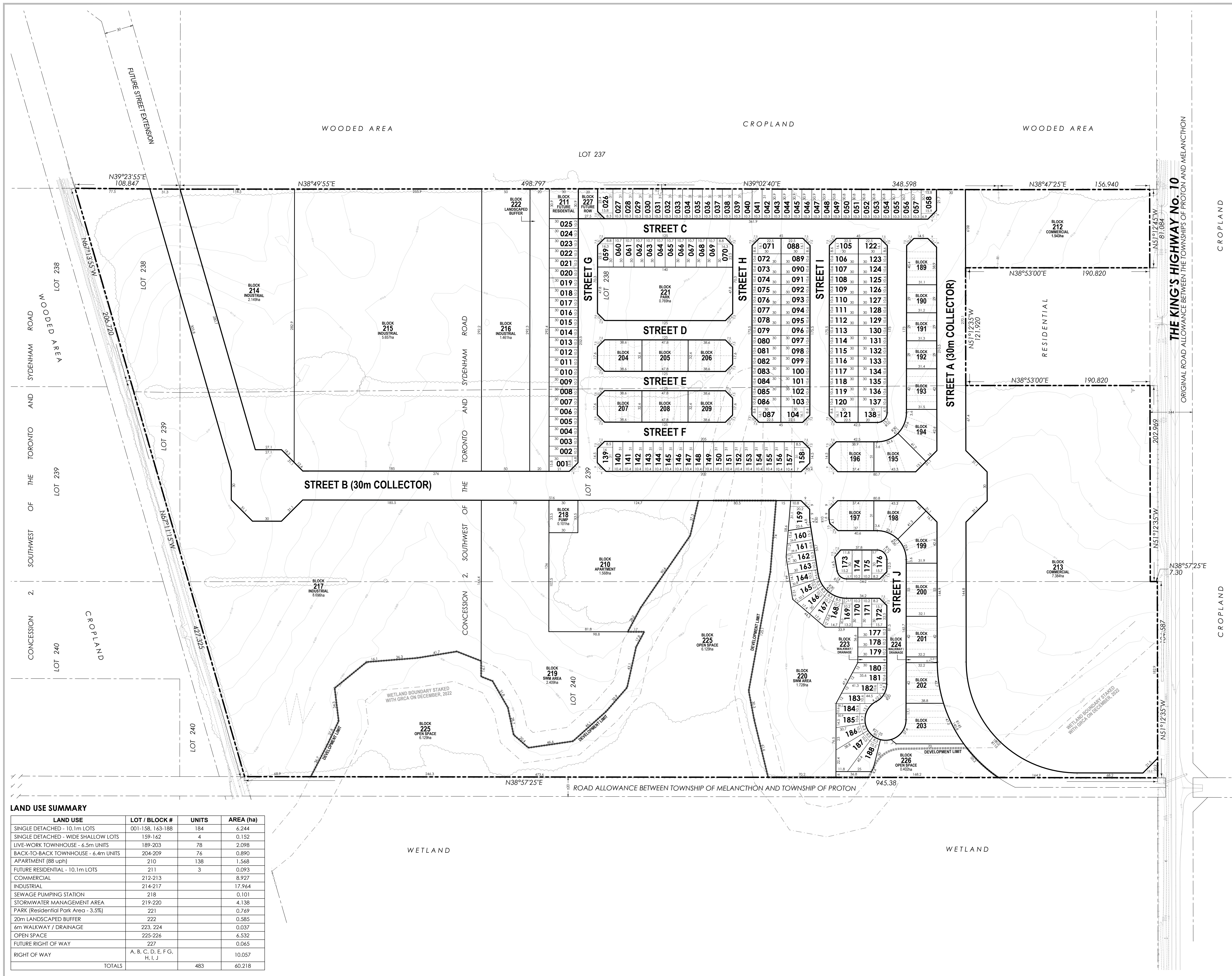
Project	DUNDALK SOUTHEAST TOWNSHIP OF SOUTHGATE	
Drawing	SITE LOCATION PLAN	



**CROZIER**  
CONSULTING ENGINEERS

Drawn By	R.D.M.	Design By	R.D.M.	Project	1060-6489
Scale	N.T.S.	Date	OCT/18/2024	Check By	J.L'A.

Drawing FIG. 1



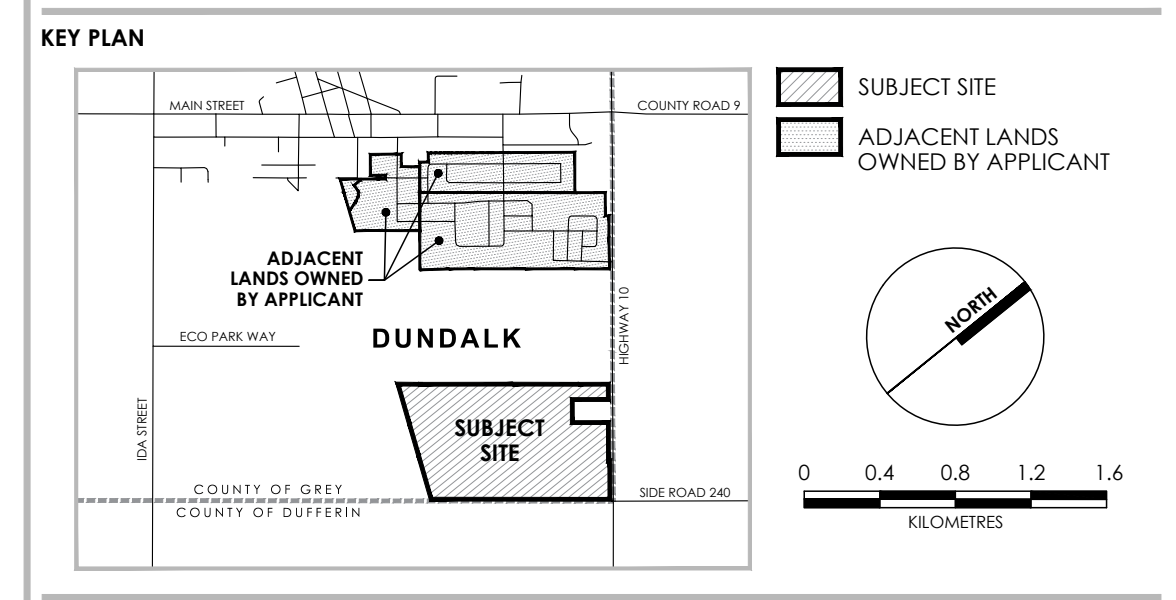
**LAND USE SUMMARY**

LAND USE	LOT / BLOCK #	UNITS	AREA (ha)
SINGLE DETACHED - 10.1m LOTS	001-158, 163-188	184	6.244
SINGLE DETACHED - WIDE SHALLOW LOTS	159-162	4	0.152
LIVE-WORK TOWNHOUSE - 6.5m UNITS	189-203	78	2.098
BACK-TO-BACK TOWNHOUSE - 6.4m UNITS	204-209	76	0.890
APARTMENT (88 uph)	210	138	1.568
FUTURE RESIDENTIAL - 10.1m LOTS	211	3	0.093
COMMERCIAL	212-213		8.927
INDUSTRIAL	214-217		17.964
SEWAGE PUMPING STATION	218		0.101
STORMWATER MANAGEMENT AREA	219-220		4.138
PARK (Residential Park Area - 3.5%)	221		0.769
20m LANDSCAPED BUFFER	222		0.585
6m WALKWAY / DRAINAGE	223, 224		0.037
OPEN SPACE	225-226		6.532
FUTURE RIGHT OF WAY	227		0.065
RIGHT OF WAY	A, B, C, D, E, F, G, H, I, J		10.057
<b>TOTALS</b>		<b>483</b>	<b>60.218</b>

**LEGAL DESCRIPTION**  
 PART OF LOTS 238, 239 AND 240  
 CONCESSION 1, SWTSR AND  
 PART OF LOTS 238 AND 239  
 CONCESSION 2, SWTSR  
 GEOGRAPHIC TOWNSHIP OF PROTON  
 TOWNSHIP OF SOUTHGATE  
 COUNTY OF GREY

**OWNER'S CERTIFICATE**  
 I HEREBY AUTHORIZE MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED TO  
 SUBMIT THIS PLAN FOR APPROVAL.  
 DATE: \_\_\_\_\_

**SURVEYOR'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ON THIS PLAN AND  
 THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.  
 DATE: \_\_\_\_\_



**LEGEND**

- PROJECT BOUNDARY LINE
- RIGHT OF WAY LINE
- BLOCK LINE
- LOT LINE
- PARCEL FABRIC

REVISION No.	DATE	ISSUED / REVISION	BY
<b>ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT            R.S.O. 1990 C.P.13 AS AMENDED</b>			
A. AS SHOWN	F. AS SHOWN	K. ALL SERVICES AS REQUIRED (WATER, SANITARY, STORMWATER, HYDRO)	
B. AS SHOWN	G. AS SHOWN	L. AS SHOWN	
C. AS SHOWN	H. MUNICIPAL WATER SUPPLY		
D. AS SHOWN	I. SILT LOADS		
E. AS SHOWN	J. AS SHOWN		

**PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE**  
 113 COLLIER STREET, BARRIE, ON, L4M 1H2 | P: 705.728.0045 | WWW.MHBCPLAN.COM

**STAMP**

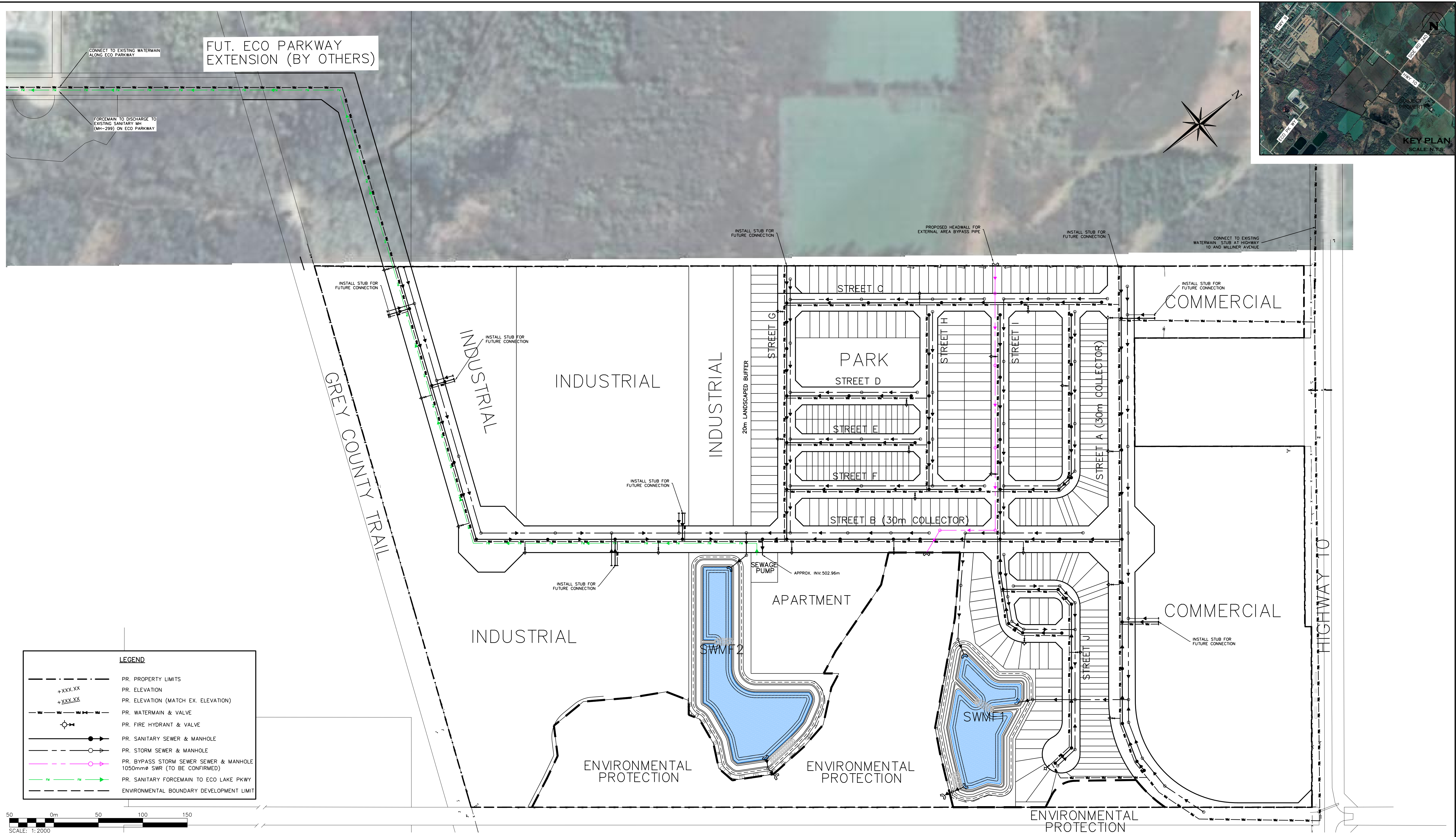
DATE	OCT. 9, 2024
FILE No.	15184AS
SCALE	1:1,800 (ARCH D)
DRAWN BY	M.M.
CHECKED BY	K.C.
OTHER	

**PROJECT**  
**FLATO SOUTHEAST (ECO PARK)**  
 FLATO ECO PARK DUNDALK INC.  
 3621 HIGHWAY 7 EAST, SUITE 503  
 MARKHAM, ON L3R 0G6  
 P: (905) 479-9292 F: (905) 429-9165  
 WWW.FLATOGROUP.COM

**FILE NAME** DRAFT PLAN OF SUBDIVISION **DWG No.** 1 of 1

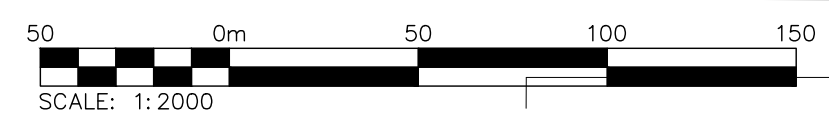
**SCALE BAR**  
 0 9 18 27 36 45 75 90 135 180m  
 MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 3.048

N:\Southgate\Flato - Eco Park - 15184AS\Drawings\Draft Plan\CAD\15184AS - Draft Plan - 2024-10-09.dwg



**LEGEND**

---	PR. PROPERTY LIMITS
+xxx.xx	PR. ELEVATION
+xxx.xx	PR. ELEVATION (MATCH EX. ELEVATION)
---	PR. WATERMAIN & VALVE
⊕	PR. FIRE HYDRANT & VALVE
—●—	PR. SANITARY SEWER & MANHOLE
—○—	PR. STORM SEWER & MANHOLE
—○—	PR. BYPASS STORM SEWER & MANHOLE 1050mm SWR (TO BE CONFIRMED)
—●—	PR. SANITARY FORCEMAIN TO ECO LAKE PKWY
---	ENVIRONMENTAL BOUNDARY DEVELOPMENT LIMIT



1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
2. THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
5. DO NOT SCALE DRAWINGS.

**TEMPORARY BENCHMARKS**  
 EXISTING TOPOGRAPHIC INFORMATION BASED ON SURVEY BY SCHAEFFER DZALDOV PURCELL LTD. COMPLETED ON JANUARY 19, 2023. ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY MONUMENT No. 00819688527 HAVING A PUBLISHED ELEVATION OF 515.566m (DATUM: CGVD28-78).

No.	ISSUE	DATE: YYYY/MM/DD
0	ISSUED FOR 1st SUBMISSION	2024/10/18

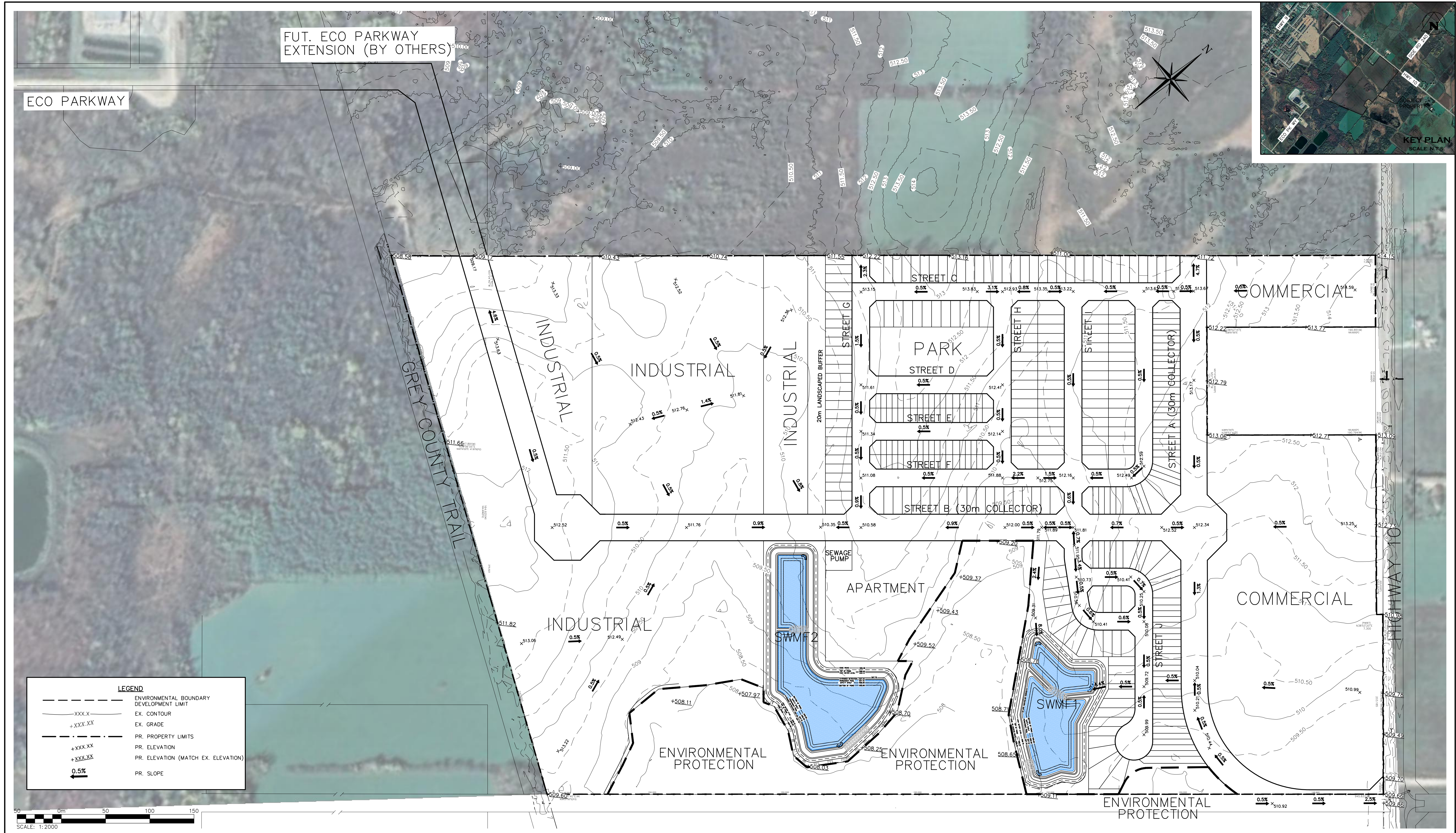
**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

**DUNDALK SOUTHEAST  
TOWNSHIP OF SOUTHGATE**

**GENERAL SITE SERVICING PLAN**

**CROZIER**  
CONSULTING ENGINEERS

Drawn By	R.D.M.	Design By	A.M./R.D.M.	Project	1060-6489
Check By	J.L.A.	Check By	A.M.	Drawing	FIG 3



1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.  
 2. THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.  
 3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.  
 4. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.  
 5. DO NOT SCALE DRAWINGS.

**TEMPORARY BENCHMARKS**  
 EXISTING TOPOGRAPHIC INFORMATION BASED ON SURVEY BY SCHAEFFER DZALDOV PURCELL LTD. COMPLETED ON JANUARY 19, 2023. ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY MONUMENT No. 00819688527 HAVING A PUBLISHED ELEVATION OF 515.566m (DATUM: CGVD28:78).



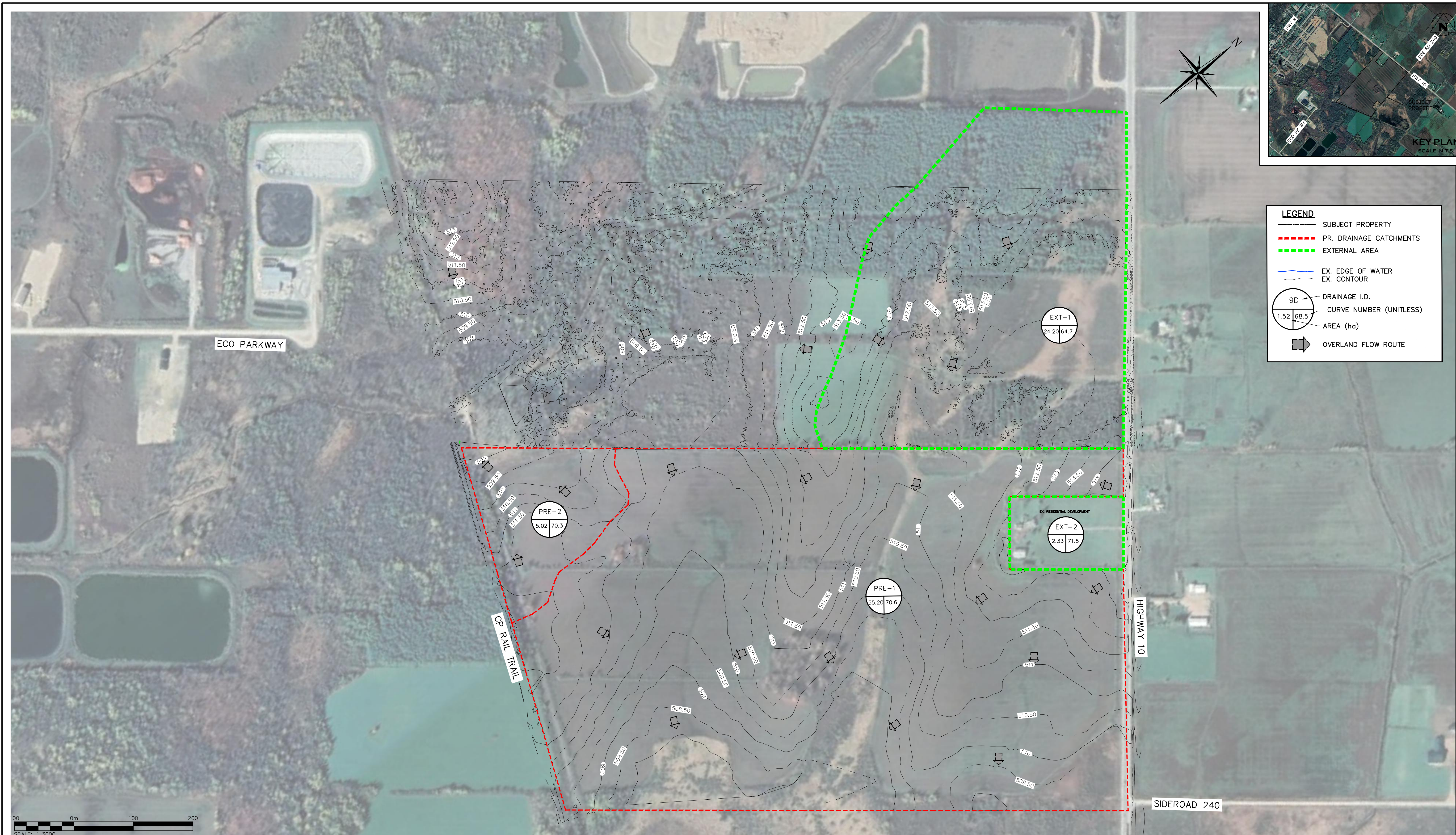
No.	ISSUE	DATE: YYYY/MM/DD	Engineer
0	ISSUED FOR 1st SUBMISSION	2024/10/18	

**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

Project: DUNDALK SOUTHEAST TOWNSHIP OF SOUTHGATE  
 Drawing: PRELIMINARY GRADING PLAN

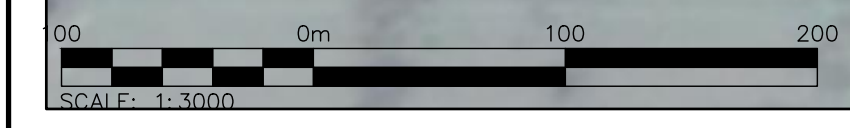
**CROZIER**  
CONSULTING ENGINEERS

Drawn By: R.D.M.	Design By: A.M./R.D.M.	Project: 1060-6489
Check By: J.L'A.	Check By: A.M.	Drawing: FIG 4



**LEGEND**

- SUBJECT PROPERTY
- PR. DRAINAGE CATCHMENTS
- EXTERNAL AREA
- EX. EDGE OF WATER
- EX. CONTOUR
- 9D DRAINAGE I.D.
- 1.52 68.5 CURVE NUMBER (UNITLESS)
- 2.33 71.5 AREA (ha)
- OVERLAND FLOW ROUTE



1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
2. THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
5. DO NOT SCALE DRAWINGS.

**TEMPORARY BENCHMARKS**  
 EXISTING TOPOGRAPHIC INFORMATION BASED ON SURVEY BY SCHAEFFER DZALDOV PURCELL LTD. COMPLETED ON JANUARY 19, 2023. ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY MONUMENT No. 00819688527 HAVING A PUBLISHED ELEVATION OF 515.566m (DATUM: CGVD28:78).

Town



No.	ISSUE	DATE: YYYY/MM/DD
0	ISSUED FOR 1st SUBMISSION	2024/10/18

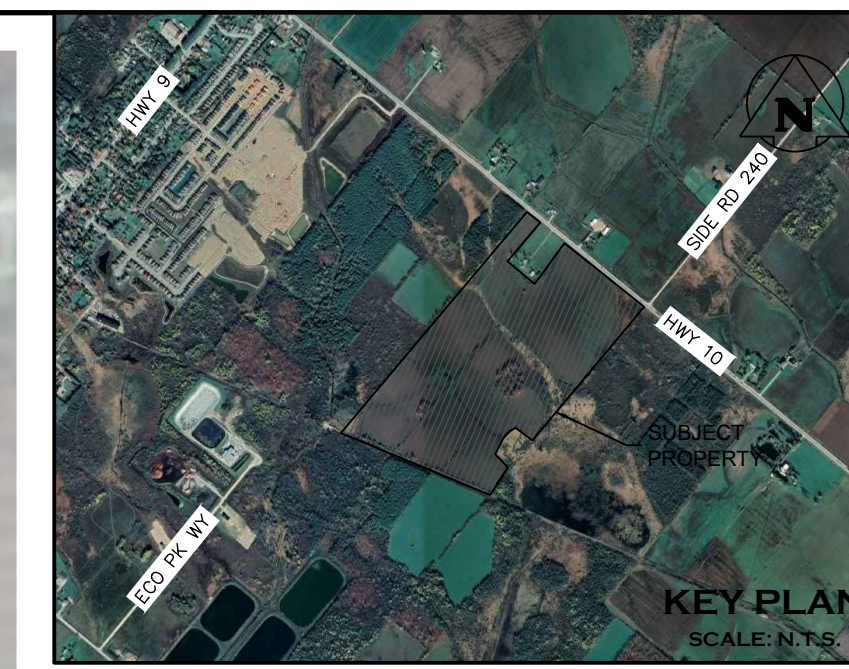
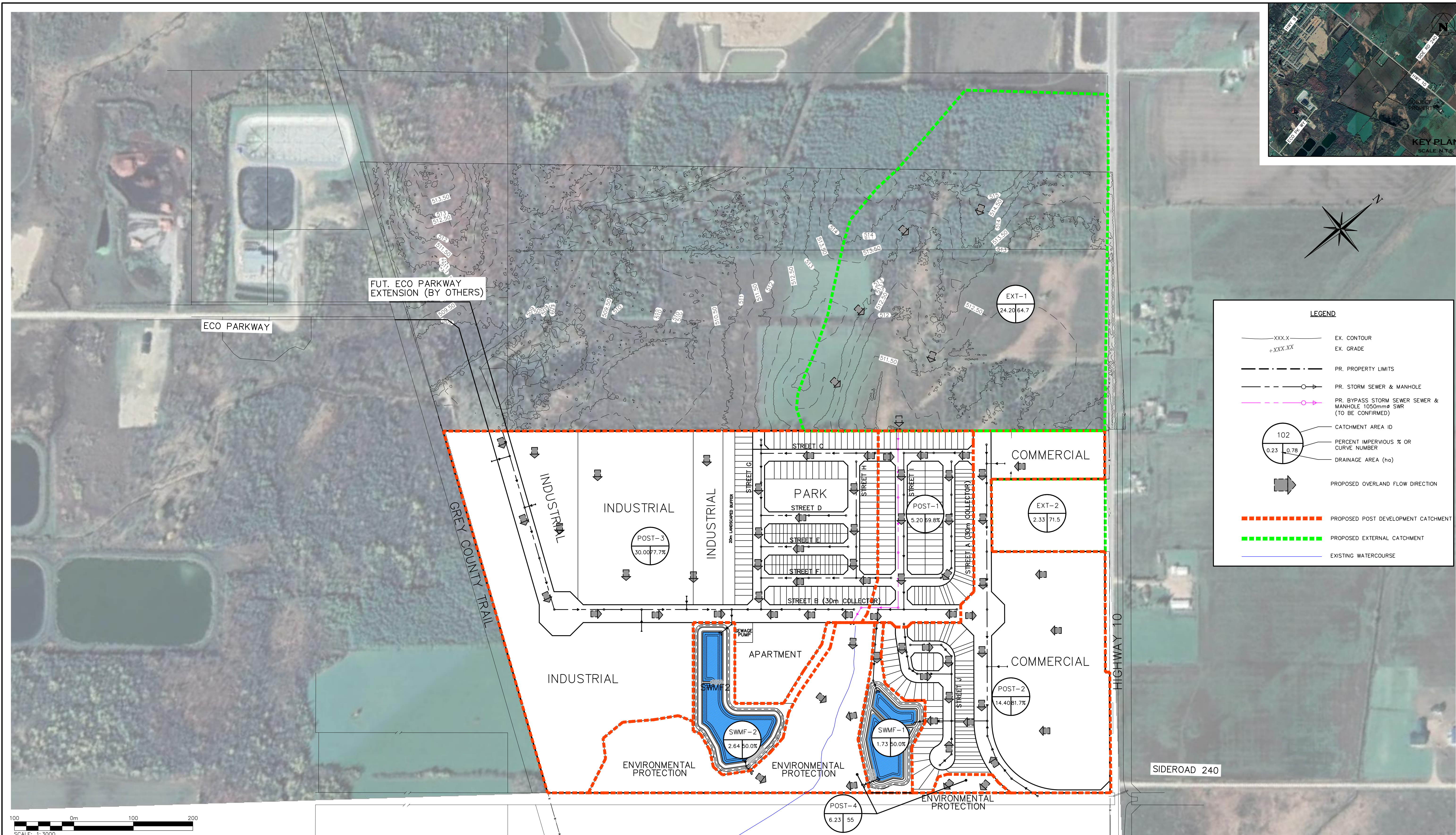
**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

Project: **DUNDALK SOUTHEAST TOWNSHIP OF SOUTHGATE**  
 Drawing: **PRE-DEVELOPMENT & EXTERNAL AREA DRAINAGE AREA PLAN**

**CROZIER CONSULTING ENGINEERS**

Drawn By: R.D.M.	Design By: A.M./R.D.M.	Project: 1060-6489
Check By: J.L.A.	Check By: A.M.	Drawing: <b>FIG 3</b>





**LEGEND**

- XXX.X--- EX. CONTOUR
- +XXX.XX EX. GRADE
- - - - - PR. PROPERTY LIMITS
- - - - - PR. STORM SEWER & MANHOLE
- - - - - PR. BYPASS STORM SEWER & MANHOLE 1050mm SWR (TO BE CONFIRMED)
- 102  
0.23 0.78  
CATCHMENT AREA ID  
PERCENT IMPERVIOUS % OR CURVE NUMBER  
DRAINAGE AREA (ha)
- ➔ PROPOSED OVERLAND FLOW DIRECTION
- - - - - PROPOSED POST DEVELOPMENT CATCHMENT
- - - - - PROPOSED EXTERNAL CATCHMENT
- EXISTING WATERCOURSE



- THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
- THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
- THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. DO NOT SCALE DRAWINGS.

**TEMPORARY BENCHMARKS**  
 EXISTING TOPOGRAPHIC INFORMATION BASED ON SURVEY BY SCHAEFFER DZALDOV PURCELL LTD. COMPLETED ON JANUARY 19, 2023. ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY MONUMENT No. 00819688527 HAVING A PUBLISHED ELEVATION OF 515.566m (DATUM: CGVD28-78).

No.	ISSUE	DATE: YYYY/MM/DD	Engineer
0	ISSUED FOR 1st SUBMISSION	2024/10/18	

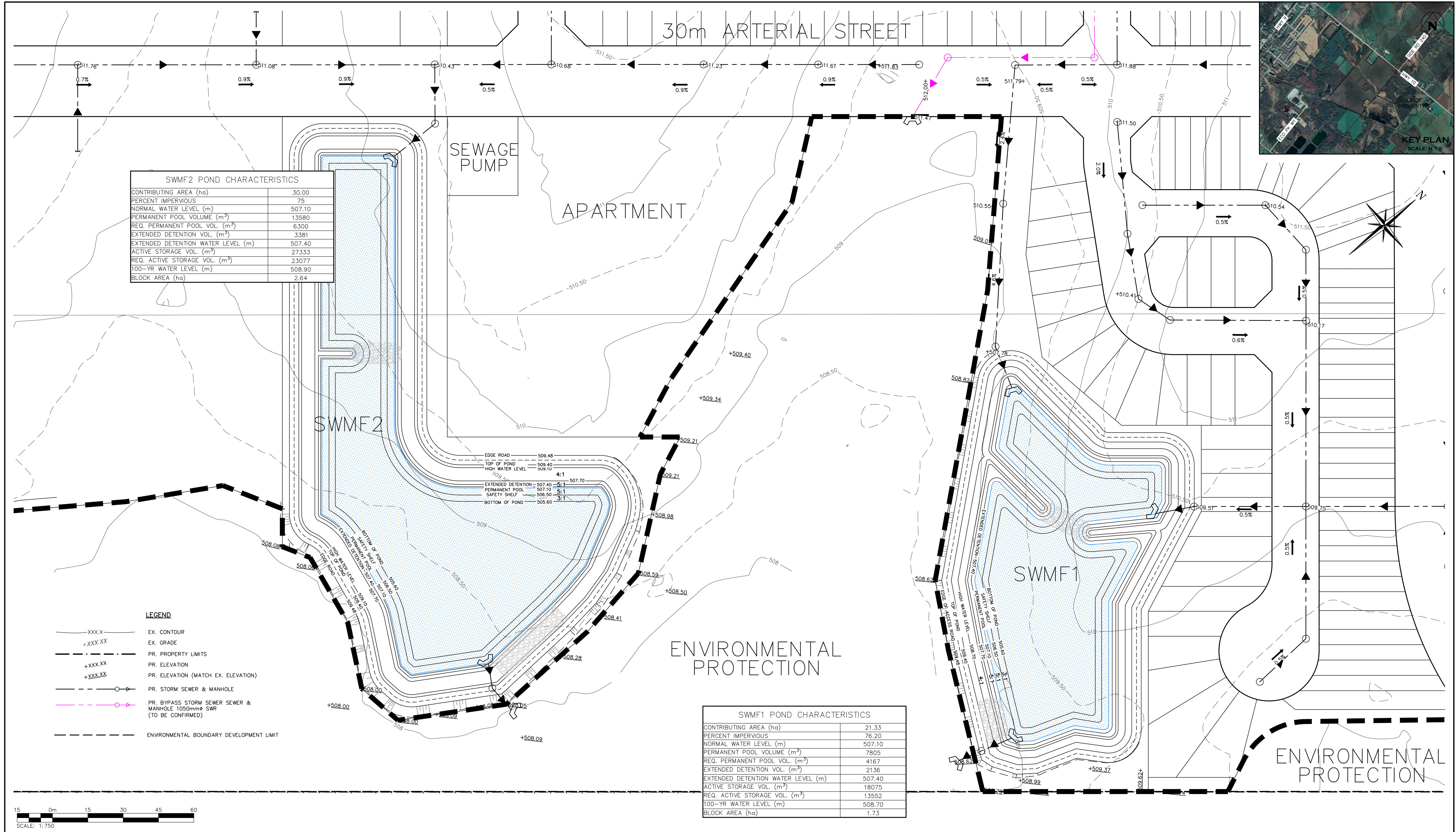
**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

**DUNDALK SOUTHEAST**  
TOWNSHIP OF SOUTHGATE

POST DEVELOPMENT DRAINAGE PLAN

**CROZIER**  
CONSULTING ENGINEERS

Drawn By	R.D.M.	Design By	A.M./R.D.M.	Project	1060-6489
Check By	J.L.A.	Check By	A.M.	Drawing	<b>FIG 6</b>



SWMF2 POND CHARACTERISTICS	
CONTRIBUTING AREA (ha)	30.00
PERCENT IMPERVIOUS	75
NORMAL WATER LEVEL (m)	507.10
PERMANENT POOL VOLUME (m³)	13580
REQ. PERMANENT POOL VOL. (m³)	6300
EXTENDED DETENTION VOL. (m³)	3381
EXTENDED DETENTION WATER LEVEL (m)	507.40
ACTIVE STORAGE VOL. (m³)	27333
REQ. ACTIVE STORAGE VOL. (m³)	23077
100-YR WATER LEVEL (m)	508.90
BLOCK AREA (ha)	2.64

EDGE ROAD	509.48
TOP OF POND	509.40
HIGH WATER LEVEL	509.10
EXTENDED DETENTION	507.40
PERMANENT POOL	507.10
SAFETY SHELF	506.50
BOTTOM OF POND	505.60

EDGE ROAD	508.82
TOP OF POND	508.40
HIGH WATER LEVEL	508.10
EXTENDED DETENTION	507.40
PERMANENT POOL	507.10
SAFETY SHELF	506.50
BOTTOM OF POND	505.60

- LEGEND**
- XXX.X--- EX. CONTOUR
  - +XXX.XX EX. GRADE
  - - - - - PR. PROPERTY LIMITS
  - +XXX.XX PR. ELEVATION
  - +XXX.XX PR. ELEVATION (MATCH EX. ELEVATION)
  - - - - - PR. STORM SEWER & MANHOLE
  - - - - - PR. BYPASS STORM SEWER SEWER & MANHOLE 1050mm SWR (TO BE CONFIRMED)
  - - - - - ENVIRONMENTAL BOUNDARY DEVELOPMENT LIMIT

SWMF1 POND CHARACTERISTICS	
CONTRIBUTING AREA (ha)	21.33
PERCENT IMPERVIOUS	76.20
NORMAL WATER LEVEL (m)	507.10
PERMANENT POOL VOLUME (m³)	7805
REQ. PERMANENT POOL VOL. (m³)	4167
EXTENDED DETENTION VOL. (m³)	2136
EXTENDED DETENTION WATER LEVEL (m)	507.40
ACTIVE STORAGE VOL. (m³)	18075
REQ. ACTIVE STORAGE VOL. (m³)	13552
100-YR WATER LEVEL (m)	508.70
BLOCK AREA (ha)	1.73



- THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
- THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
- THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
- ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- DO NOT SCALE DRAWINGS.

**TEMPORARY BENCHMARKS**  
 EXISTING TOPOGRAPHIC INFORMATION BASED ON SURVEY BY SCHAEFFER DZALDOV PURCELL LTD. COMPLETED ON JANUARY 19, 2023. ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY MONUMENT No. 00819688527 HAVING A PUBLISHED ELEVATION OF 515.566m (DATUM: CGVD28.78).


Town



No.	ISSUE	DATE: YYYY/MM/DD	Engineer
0	ISSUED FOR 1st SUBMISSION	2024/10/18	

**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

Project  
**DUNDALK SOUTHEAST TOWNSHIP OF SOUTHGATE**  
 Drawing  
**PRELIMINARY PLAN OF SWMF 1 AND SWMF 2**



**CROZIER**  
CONSULTING ENGINEERS

Drawn By	R.D.M.	Design By	A.M./R.D.M.	Project	1060-6489
Check By	J.L'A.	Check By	A.M.	Drawing	FIG 7