Appendix F

DRAINAGE AND STORMWATER MANAGEMENT REPORT

### VMC Schedule 'C' Class Environmental Assessment (EA) Studies for the Extensions of Interchange Way and Millway Avenue

**Drainage and Stormwater Management Report** 

May 2025





May 28, 2025

City of Vaughan 2141 Major Mackenzie Drive Vaughan, ON, L6A 1T1

Attention: James Norris, P.Eng, Project Manager

Dear Mr. Norris

Subject:Vaughan Metropolitan Centre Extensions of Interchange Way and MillwayAvenue Drainage and Stormwater Management Report

WSP is pleased to submit one electronic copy of the FINAL Drainage and Stormwater Management report for the Vaughan Metropolitan Centre Schedule 'C' Class Environmental Assessment (EA) for the Extensions of Interchange Way and Millway Avenue. This report documents the hydrologic analysis of the study area, and it outlines the preliminary stormwater management plan.

We trust the submission of this documents meets your requirements. Should you have any comments we look forward to your response.

Yours sincerely,

Bryan Orendorff, M.A.Sc., P.Eng. Manager, Water Resources

WSP ref.: 20M-01179-00





#### Revision History

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### 1 Introduction

#### 1.1 Project Description and Purpose

WSP Canada Inc. (WSP) was retained by the City of Vaughan (the City) to assist in the Municipal Class Environmental Assessment (MCEA) process for the extensions of Interchange Way and Millway Avenue. WSP is also assisting the City in updating the Transportation Master Plan (TMP) to confirm transportation needs, supportive policies, and a phasing strategy to 2041 with a focus on street connectivity, accessibility, and support for multi-modal mobility (i.e., walking, cycling, transit, ride share).

Proposed works include widening of Interchange Way from two to four lanes, extension of Interchange Way east of Jane Street to Creditstone Road, and the construction of an extension of Millway Avenue south of Highway 7 that will connect with Interchange Way.

Millway Avenue will be classified as a Special Collector Road, serving as a mobility hub with adjacent retail, commercial, transit, high-density residential and public spaces. Interchange Way will be classified as a Major Collector Road, with multi-modal transportation prioritized through the accommodation of transit and pedestrian / cycling infrastructure.

These road improvements require design strategies to achieve quantity and quality control targets, for all road surfaces, in adherence to the Toronto and Region Conservation Authority (TRCA) Stormwater Management Design Criteria (2012).

The improvements also include the re-alignment of Black Creek and new Interchange Way overpass which will be completed under a separate project (Black Creek Renewal Project).

This report outlines the hydrologic analysis as well as the preliminary stormwater management (SWM) plan for the MCEA of the roadway extensions.





The study area is shown in Exhibit 1. All exhibits are included at the end of the report.

#### 1.2 Background Information

WSP reviewed the following background documents which were used in the assessments and analysis for this study:

- Vaughan Metropolitan Centre Municipal Servicing Class Environmental Assessment Master Plan (MSMP) prepared by The Municipal Infrastructure Group LTD (TMIG) for the City of Vaughan, November 2012.
- Vaughan Metropolitan Centre Black Creek Renewal (BCR) Class EA Report prepared by TMIG for the City of Vaughan, August 2018.
- Urban Water Plan Vaughan Metropolitan Centre Functional Servicing Strategy Report (FSSR) Volume 4 – Stormwater Management Report prepared by Civica, September 2024.
- Digital based mapping.
- Aerial Images.

The following is a summary of the VMC MSMP, BCR EA and VMC FSSR SWM. Report studies:

- The MSMP (2012) identified that the existing Interchange stormwater management (SWM) Pond would be retrofitted to achieve current SWM criteria (quantity, quality and erosion control) for Interchange Way. It also proposed a SWM pond for the Vaughan Metropolitan Centre southeast quadrant (SEQ) which included Interchange Way east of Jane Street.
- The Black Creek Renewal EA (2018) outlined concerns with implementing the proposed pond within the SEQ. The SWM alternative outlined in the BCR EA is no longer applicable and the City is working on a new SWM strategy for the SEQ. The resulting

1-2



SWM strategy for the SEQ will provide quantity and quality control for Interchange Way east of Jane Street.

 In the Vaughan Metropolitan Centre FSSR (2024) it noted that the rights-of-way within the Vaughan Metropolitan Centre, including Interchange Way west and east of Jane Street would remain uncontrolled and end of pipe facilities would provide quantity control for its tributary areas.

Based up on the above, mitigation measures to provide quantity control for the proposed Interchange Way improvements, as part of the road improvements are not required due to the retrofit of the existing Interchange Way Pond and likely end-of-pipe solution(s) as part of the on-going SEQ SWM strategy assessment.

For the area west of Jane Street, the Interchange Pond retrofit will provide the required quality control. For the area east of Jane Street (within the SEQ), the City is currently asking for quality control on an interim basis for road rights-of-way via Low Impact Development (LID). The City is currently establishing the SWM Tree Trench standard which may be an interim or permanent solution. It should be noted that the City will not accept filter-type units, such as Jellyfish, within the City's rights-of-way.

#### 1.3 Scope of Work

The scope of work entails the following:

- Collect and review relevant background information.
- Conduct a field investigation to assess the potential impact of the proposed road improvements and inspect the conditions of all drainage elements.
- Outline the drainage and stormwater management criteria to conform with the TRCA and the City of Vaughan requirements.
- Delineate drainage mosaics, complete hydrologic analysis for existing and proposed conditions.





#### 1.4 Site Investigation

A field investigation of the study area and existing drainage features was conducted by WSP on September 20, 2022. Prior to the field investigation, WSP contacted the City to coordinate a date to meet up on site with the City representatives to discuss any drainage concerns in the area. The purpose of this field investigation was to review the existing drainage conditions, confirm the drainage patterns, inspect existing culverts and identify any drainage concerns and provide recommendations for the drainage features.

Maplecrete Road and Creditstone Road were also investigated at the areas where the proposed Interchange Way extension will intersect these streets. Photographs were taken of the existing Interchange Pond (Pond 1) east of Highway 400, south of Interchange Way and north of Highway 407 from the fence line.

The following drainage conditions were observed:

- Based on visual inspection the sidewalks and grassed areas within the rights-of-way (ROW) of Interchange Way is draining towards the road.
- Maplecrete Road is quite flat.
- The low point of Creditstone Road was observed to be where it intersects with Peelar Road.

The existing Black Creek Tributary crossing located west of Jane Street was inspected. The following was observed:

- Upstream end
  - o Gabion collapsing, garbage present
  - o Steep slope unable to inspect
  - o From what could be observed from above little flow going through
- Downstream end
  - o Gabion wall, lots of trees



1-4



- Steep slope unable to inspect
- From what could be observed from above standing water is present

A photographic inventory of the site investigation is provided in Appendix A.





# 2 Design Criteria andStandards

The following criteria were considered in the assessment of the drainage and SWM strategy. These criteria were based on the following guidelines:

- TRCA's Stormwater Management Criteria, August 2012
- MOE (now MECP) Stormwater Management Planning and Design Manual, March 2003
- Stormwater Management System, City of Vaughan Engineering Design Criteria & Standard Drawings, December 2020

#### 2.1 Design Criteria – Stormwater Management (SWM)

Based on the criteria and standards provided by the Regulatory agencies, general stormwater management objectives and practices have been recognized to minimize the impact of the preferred alternative. The identified objectives are as follows:

- Where feasible maintain existing drainage patterns
- Minimize peak flow increases and potential roadway overtopping
- Provide quantity and quality control of runoff for all new pavement areas, as needed
- Provide erosion control and water balance, as needed
- Minimize risk to public safety
- Minimize future maintenance requirements

As previously stated, the drainage and stormwater management design will follow the TRCA and the City of Vaughan requirements. The relevant stormwater management criteria from the TRCA's Stormwater Management Criteria are summarized in Table 2-1 while Table



2-3 summarizes the relevant Stormwater Management Criteria for the City of Vaughan. Table 2-3 summarizes the relevant criteria considered in the previous studies within the study area such as the MSMP (2012), Black Creek Renewal EA (2018) and the FSSR (2024).

Table 2-1:	Relevant TRCA	Stormwater	Management Criteria
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Criteria	Section	Description
Stormwater Quantity (Flood) Control Criteria	3.2	<ul> <li>Existing watershed boundaries and drainage patterns should be maintained, and pre-development drainage areas must be used to determine the allowable release rate when using the unit flow rate equation.</li> <li>Unit flow relationships have been established and should be used for all other sites located in the Humber River Watershed.</li> <li>Based on Table E.1 in Appendix A of the TRCA SWM Criteria and the location of the site, Equation G for Sub-basin 46 should be used to determine the storage requirements for the study area.</li> <li>Development outside of the approved urban boundary when the hydrology study was finalized may require Regional storm protection, proponents should consult with TRCA staff to confirm.</li> </ul>
Quality Control Criteria	5.2	- All watercourses and water bodies within the TRCA's jurisdiction are classified as requiring an Enhanced level of water quality protection, equivalent to 80% Total Suspended Solids (TSS) removal.
Erosion Control Criteria	4.2	<ul> <li>The minimum erosion control requirement is retention of the first 5 mm of every rainfall event.</li> <li>For sites with a SWM pond, extended detention of the 25 mm event for a period of 48 hours may also be required, depending on the results of the erosion assessment.</li> </ul>





#### Table 2-2: Relevant City of Vaughan Stormwater Management Criteria

Criteria	Section	Description
Stormwater Management System – General Design Considerations	1.3.1	<ul> <li>SWM plan should be developed in accordance with the City's Design Criteria and Standard Drawings, the TRCA's SWM Criteria (April 2012 or most recent) and the MCEP's SWM Planning and Design Manual (2003 or most recent)</li> <li>Designed to provide conveyance drainage for a variety of storm frequencies through the minor and major system to provide flood protection for all storms up to the greater of the 100-year storms where mandated by the TRCA.</li> </ul>
Infiltration	1.3.1.12	- Where soils are suitable for infiltration, lot level controls, infiltration trenches and perforated pipe systems are suitable and shall be encouraged.
Stormwater Management Facilities	1.3.5	<ul> <li>End of pipe quality control facilities typically considered for developments greater than 5 ha where source controls are impractical</li> <li>For developments less than 5 ha, quality control measures such as but not limited to Low Impact Development (LID) measures and Oil / Grit Separators (OGS) must be considered</li> <li>These guidelines are considered supplementary to the latest versions of the MCEP SWM Practices Planning and Design Manual and the TRCA SWM Criteria</li> </ul>

#### Table 2-3: Considered SWM Criteria From Previous Studies

SWM	2012 MSMP	2018 Black Creek Renewal EA (applicable for SEQ Only)	2024 FSSR
Public ROW			
Water Quantity	To be provided via end of pipe facility	For SEQ: See below for retention volume	For Southwest Quadrant (SWQ): None
Water Quality	To be provided via end of pipe facility	For SEQ: See below for retention volume	For SWQ: To be provided via end of pipe facility For SEQ: Interim conditions: Basic-



SWM	2012 MSMP	2018 Black Creek Renewal EA (applicable for SEQ Only)	2024 FSSR
			Enhanced (60 - 80% TSS Removal) Ultimate conditions: To be provided via end of pipe facility
Retention Volume (i.e. Water Balance)	None	For SEQ: 15 mm	For SWQ: None For SEQ: None
End of Pipe Facility			
Water Quantity	Humber River Unit Flow Rates	n/a due to the proposed	Humber River Unit Flow Rates
Water Quality	Enhanced (80% TSS removal)	pond being removed for this report. The 15 mm on-site retention on the ROW is	Enhanced (80% TSS removal)
Retention Volume	None	proposed instead of the SEQ SWM facility	Based on subwatershed area and unit release rate





### 3 Predevelopment Conditions

#### 3.1 Existing Drainage Condition

Under existing conditions, runoff from all roadways included in this study get captured by catch basins and conveyed through storm sewers. Interchange Way consists of one lane in either direction while Millway Avenue consists of two lanes in either direction.

The land areas east of Jane Street and south of Highway 7 drains in a south westerly direction towards the main branch of Black Creek. The majority of land south of Highway 7 and west of Jane Street drains to the southwest, towards an existing pond called the Interchange Pond. There is a development south of Highway 7 and west of Jane Street that has its own SWM pond and any runoff from the development gets conveyed to the Toromont SWM pond instead of the Interchange Pond.

The existing condition drainage mosaic, shown on Exhibits 2 to 5 illustrates existing drainage features within the study area and the catchment delineations of the rights-of-way (ROW). The drainage catchments were delineated based on contours.

#### 3.1.1 Land Use and Soil Surface

The existing land use of the study area is mainly comprised of impervious area coming from commercial, manufacturing and industrial properties.

Based on the Soil Map of York County acquired from the Soil Survey Reports for Ontario on the Government of Canada website, the predominant soils within the study area were





classified as clay or clay loam which represents a "CD" soil classification based on hydrologic soil groups (HGS). Due to this soil classification, there is more runoff potential within the catchment areas.

#### 3.2 Rainfall Information

The design storms for the 2-, 5-, 10-, 25-, 50- and the 100-year storm events was created with the rainfall intensities outlined in Appendix 14 of the Final Report Humber River Hydrology Update (June 2015) prepared for the TRCA. This will be further discussed in Section 3.3.

#### 3.3 Hydrologic Modelling

Hydrologic modelling is used to simulate the hydrologic response of the drainage area during the design storms.

The methodology used to develop the hydrologic model can be summarized as follows:

- Hydrologic parameters were estimated for each drainage area based on the catchment area, land use distribution (confirmed with topographic mapping, survey, and aerial photograph(s)), soil distribution and slope of the overland and channel portions of the catchment.
- The hydrologic response of the drainage areas with a directly connected impervious land use greater than 20 percent was obtained using STANDHYD instantaneous hydrograph.
- The hydrologic response of the drainage areas with a directly connected impervious land use less than 20 percent was obtained using NASH instantaneous hydrograph (NASHYD).





A Visual OTTHYMO hydrologic model was developed for the 2-year to 100-year design storms in the study area to determine peak flow runoff rates that would occur during flood events. As mentioned above, the design storms were generated using the rainfall intensities outlined in Appendix 14 of the Final Report Humber River Hydrology Update (June 2015) prepared for the TRCA to create the required rainfall data for the 6- and 12-hour Atmospheric Environment Service (AES) distributions. The rainfall data was inputted into the Visual OTTHYMO model to calculate the peak flows for each distribution. The larger conservative flows will be used for the analysis.

Visual OTTHYMO version 6.2 (VO6) is a single event hydrologic model used to simulate hydrographs by modelling rainfall, infiltration, runoff and routing through a watershed. This model uses the Soil Conservation Curve Number (CN) Method of estimating runoff characteristics in combination with instantaneous unit hydrograph routines to produce storm hydrographs.

#### 3.4 Flow Rates

A summary of the hydrologic parameters used in the existing modelling, including the Curve Number (CN), Initial Abstraction (I<sub>a</sub>), and the total impervious percent, is summarized in Table 3-1. Table 3-2 presents the peak flow comparison between the 6 and 12-hour AES distributions under existing conditions. The larger 6-hour AES distribution flows will be used in the analysis. The Visual OTTHYMO output results for existing conditions are included in Appendix B.

#### Table 3-1: Existing Hydrologic Input Parameters

Catchment ID	Hydrograph Type	Area (ha)	CN	l <sub>a</sub> (mm)	Total Impervious (%)
100	Standard	1.10	82	2.2	92
105	Standard	3.24	82	2.9	70



Catchment ID	Hydrograph Type	Area (ha)	CN	l <sub>a</sub> (mm)	Total Impervious (%)
200	Standard	2.08	82	2.5	84
300	Standard	0.52	82	2.5	84

#### Table 3-2: Peak Flow Comparison – Existing Conditions

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Catchment	Area (ba)	Peak Flows (m <sup>3</sup> /s)					
ID	Area (ha)	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
6-Hour AES [	Distribution						
100	1.10	0.094	0.129	0.151	0.178	0.199	0.219
105	3.24	0.222	0.304	0.367	0.442	0.499	0.556
200	2.08	0.165	0.223	0.264	0.314	0.352	0.393
300	0.52	0.041	0.056	0.066	0.079	0.089	0.098
12-Hour AES	12-Hour AES Distribution						
100	1.10	0.056	0.073	0.084	0.099	0.111	0.122
105	3.24	0.137	0.186	0.219	0.261	0.294	0.325
200	2.08	0.099	0.131	0.153	0.180	0.201	0.221
300	0.52	0.025	0.033	0.038	0.045	0.050	0.055

3-4



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### 4 Post Development Conditions

#### 4.1 Proposed Drainage Condition

Similarly to existing conditions, runoff will be captured by catch basins and conveyed through storm sewers to an end of pipe outlet. The proposed improvements will include the following:

- Widening Interchange Way from two to four lanes with a center median barrier
- Millway Avenue extension south of Highway 7 that will connect with Interchange Way
- New 2 m wide raised cycle tracks on both sides along Interchange Way and Millway Avenue
- Drainage and stormwater management improvements

The preferred cross-section of Interchange Way and Millway Avenue includes a concrete walkway, a concrete buffer, an asphalt cycle track and raised planters on both sides of the ROW. As for the roadway, the preferred cross-section includes two lanes in either direction with a concrete median in the middle.

Due to the road improvements, a slight increase in impervious area and flows is to be expected. The existing storm sewer network within the study limits may need to be increased in size due to the Millway Avenue and Interchange Way improvements.

Under proposed conditions, the drainage pattern is assumed to stay the same as existing conditions. The proposed drainage mosaic is illustrated in Exhibits 6 to 9.



#### 4.2 Flow Rates

A summary of the hydrologic parameters used in the proposed modelling including the Curve Number (CN), Initial Abstraction (I<sub>a</sub>), and the total impervious percent is summarized in Table 4-1. Table 4-2 presents the calculated 6-hour AES distribution peak flows under proposed conditions. The Visual OTTHYMO output results for proposed conditions are included in Appendix C.

#### Table 4-1: Proposed Hydrologic Input Parameters

Catchment ID	Hydrograph Type	Area (ha)	CN	l₄ (mm)	Total Impervious (%)
100	Standard	1.10	82	2.2	92
105	Standard	3.24	82	2.3	91
200	Standard	2.08	82	2.2	92
300	Standard	0.52	82	2.1	98

#### Table 4-2: Calculated Peak Flows – Proposed Conditions

Catchment	Area (ba)	Peak Flows (m <sup>3</sup> /s)					
ID	Area (ha)	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
100	1.10	0.094	0.129	0.151	0.178	0.199	0.219
105	3.24	0.275	0.376	0.440	0.522	0.583	0.643
200	2.08	0.178	0.243	0.284	0.337	0.376	0.415
300	0.52	0.047	0.063	0.073	0.087	0.096	0.106

4-2



### 5 Stormwater Management

#### 5.1 Overview

Under existing conditions, for the areas west of Jane Street, stormwater management measures currently exist in the form of existing ponds (Interchange Pond and the Toromont Pond). However, the areas east of Jane Street and south of Highway 7 have no existing stormwater management measures in place. Roadway runoff is generally captured by existing catch basins and conveyed through existing storm sewer networks.

As previously mentioned in the MSMP (2012), Black Creek Renewal EA (2018) and the FSSR (2024) reports, quantity and quality control for Interchange Way west of Jane Street will be provided by the proposed retrofit of the Interchange Pond, while the SWM strategy for the SEQ will provide the quantity and quality control of Interchange Way east of Jane Street.

The Visual OTTHYMO results summarized in the previous sections were used to determine the storage requirement for the road improvements west and east of Jane Street that should be considered in the Interchange Pond retrofit and the SWM strategy of the SEQ. This will be further discussed in the following sections.

#### 5.2 Impact of the Preferred Design

A slight adjustment of the Interchange Way alignment is proposed east of Jane Street for the preferred alternative. This new slightly shifted alignment of Interchange Way will not produce any significant changes compared with the initial proposed alignment.

Based on the proposed design, three out of the four ROW catchments have an increase in impervious area (Catchments 105, 200 and 300) while the last catchment (100) has the same



impervious area as existing conditions. Table 5-1 includes the impervious area comparison between existing and proposed conditions for each catchment. Increase in impervious areas and flows, as a result of the proposed design, is proposed to be addressed through the retrofit of the Interchange Pond for the ROW catchment areas within the study limits west of Jane Street and the SWM Strategy of the SEQ for the ROW east of Jane Street.

	Imperviou	s Area (ha)		
Catchment ID	Existing Conditions	Proposed Conditions	Area Increase (%)	
100	1.01	1.01	0.0	
105	2.27	2.95	30.0	
200	1.75	1.91	9.1	
300	0.44	0.51	15.9	

#### Table 5-1: Impervious Area Comparison

#### 5.3 Water Quantity Control

As the project area is located in the Humber River Watershed, as mentioned in the design requirements, unit flow relationships have been used as per Humber River Stormwater Management Control Release Rates Map and Table E.1 in Appendix A of the TRCA SWM Criteria. The required release rate needed for the west and east of Jane Street ROW catchments was calculated and used as input in the Visual OTTHYMO model. The Visual OTTHYMO model was then used to calculate the required storage to control the ROW west and east of Jane Street that should be considered in the Interchange Pond retrofit and the SWM strategy of the SEQ.

Table 5-2 summarizes the target TRCA release flows from Equation G Sub-basin 46 of the Humber River unit flow relationships for the study areas west and east of Jane Street.



Location	TRCA Target Release Outflows (m <sup>3</sup> /s)					
Location	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
West of Jane Street	0.029	0.043	0.052	0.065	0.075	0.085
East of Jane Street	0.018	0.027	0.033	0.041	0.048	0.054

#### Table 5-2 TRCA Target Release Flows

Table 5-3 summarizes a comparison between the existing flows, proposed flows without control and proposed flows with control for the contributing ROW study areas east and west of Jane Street.

#### Table 5-3 Flow Comparison

Description	Storm Event (m <sup>3</sup> /s)					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
West of Jane	Street					
Existing	0.316	0.433	0.517	0.620	0.698	0.775
Proposed Without Control	0.369	0.504	0.591	0.700	0.782	0.862
Proposed With Control	0.029	0.043	0.053	0.066	0.075	0.085
East of Jane S	Street					
Existing	0.207	0.279	0.330	0.393	0.441	0.491
Proposed Without Control	0.226	0.306	0.358	0.423	0.472	0.521
Proposed With Control	0.018	0.027	0.033	0.042	0.048	0.054



Table 5-4 summarizes the volumes required for quantity control that meet the TRCA target release flows for the contributing ROW study areas east and west of Jane Street for the 100-year storm event to be considered for the Interchange Pond retrofit and the SWM strategy for the SEQ. The Visual OTTHYMO results can be found in Appendix D.

#### Table 5-4: 100-Year Storage Volume to be Considered

Location	Contributing ROW Catchment Area (ha)	Required Volume for 100-Year Event (m <sup>3</sup> )		
West of Jane Street	4.34	2606		
East of Jane Street	2.60	1565		

Based on Table 5-4, the 100-year volume calculated for the ROW study area west of Jane Street should be considered for the Interchange Pond retrofit while the 100-year volume calculated for the ROW study area east of Jane Street should be considered for the SWM strategy of the SEQ.

The above-mentioned quantity control volumes should further be confirmed and refined at the detailed design stage. A storm sewer analysis should also be completed at the detailed design stage to confirm that the existing sewer system has the required capacity to convey the flow increase. Further communication with the City of Vaughan will be required during the detailed design stage.

#### 5.4 Water Quality Control

Based on the TRCA's Stormwater Management Criteria, all watercourse and water bodies within the TRCA jurisdiction requires an Enhanced level of water quality protection equivalent to 80% Total Suspended Solids (TSS) removal. Based on the MSMP, FSSR and the Black Creek Renewal Class EA, the quality control will be achieved through the retrofitted Interchange Pond for the ROW catchments west of Jane Street while the quality control for the ROW catchments east of Jane Street will be achieved through the on-going



5-5

SWM strategy of the SEQ. It is noted that the City will not accept filter units, such as Jellyfish, within the City rights-of-way.

The use of LID was investigated, however due to the proposed road design which includes construction of bike lanes in front of the planters in the boulevard throughout the project area, runoff from the roadway is unable to make its way to the boulevard. As such, the use of LIDs such as bioretention facilities within the ROW study area, is not feasible. Note, the City is currently recommending LIDs be implemented within rights-of-way within the VMC southeast quadrant to achieve water quality control. This may be an interim solution or part of a treatment train approach as a permanent solution. This will be determined through the City's on-going VMC SWM Enhancement Study.

For the study area west of Jane Street (Millway Avenue and Interchange Way), 15 mm onsite retention is being proposed for development sites. The Interchange Pond retrofit will include erosion control via extended detention. For the study area east of Jane Street, 15 mm onsite retention is being proposed for development sites. The SWM strategy for SEQ may include erosion control via extended detention should a pond be proposed.

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## 6 Sediment and Erosion Control

Sediment and erosion control measures will be implemented during all phases of construction, clean up and restoration to prevent sediment laden runoff from entering any of the watercourses directly from the construction zone.

Uncontrolled erosion and sedimentation occurring during construction can result in loss in topsoil, a disruption of nearby watercourses and degradation of downstream water quality. During construction, erosion and sedimentation control measures should be implemented to prevent the migration of soils from site.

The following recommended erosion and sedimentation control measures should be considered:

Vegetative:

- All areas not subject to active construction 30 days after area grading should be top soiled and seeded immediately after completion of such grading.
- Immediately following seed application, a straw erosion control blanket should be installed on any exposed slopes adjacent to sensitive features.

#### Structural:

 As construction proceeds, diversion swales should be graded where needed along the right of way boundaries to intercept drainage from external areas and direct it away from exposed surfaces.





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- Temporary silt fencing and sedimentation traps should be placed around existing drainage features.
- Temporary silt fencing should be installed around sensitive vegetative features.
- Additional erosion control works may be required during the course of construction.
   These may consist of silt fences, swales, and/or diversion berms. The location and need for these works will be established in the field.

The integration of these measures will minimize the impacts of erosion and sedimentation during construction.

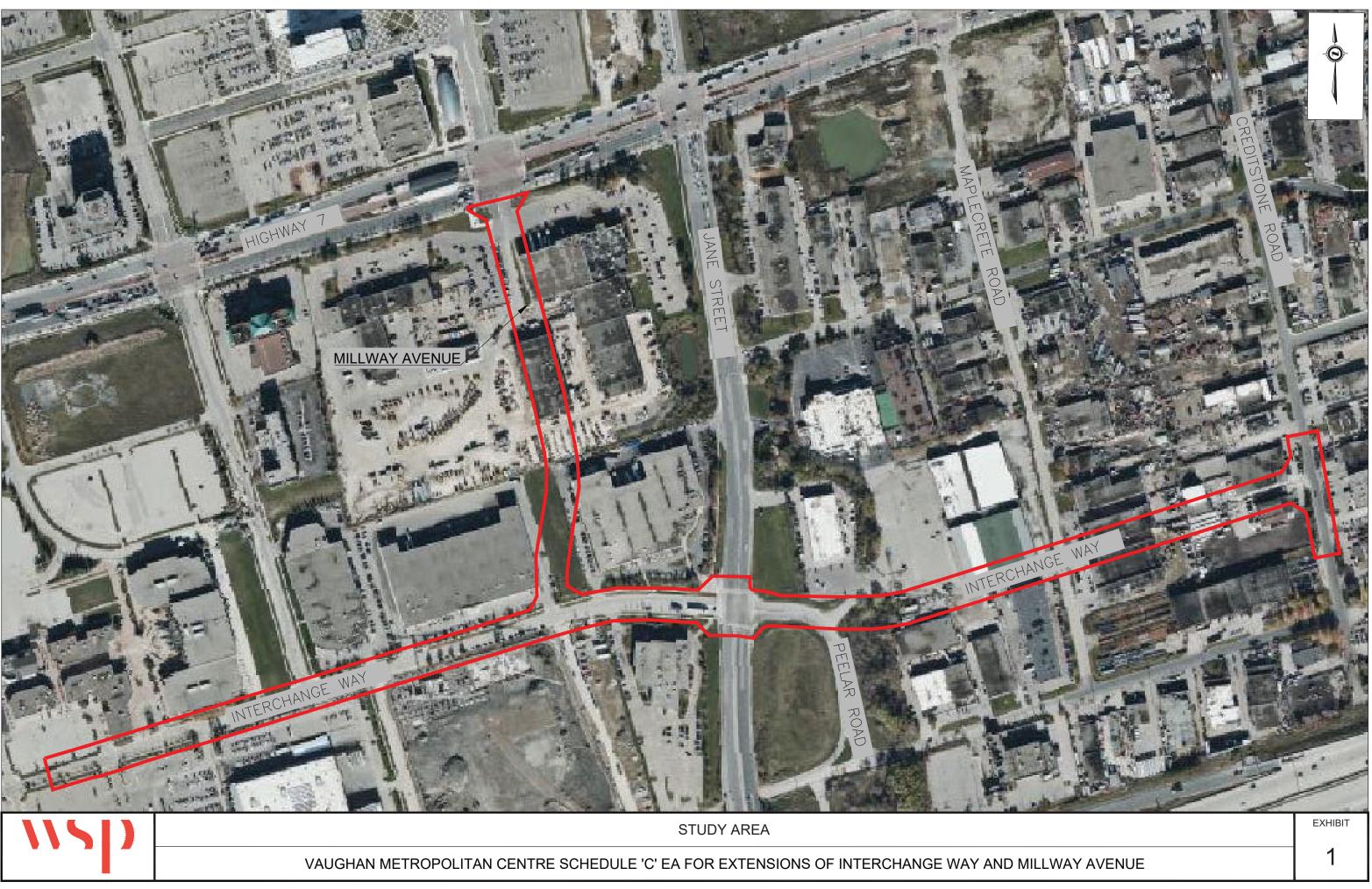
Future detailed designs and plans should identify all regulated features and boundaries within or adjacent to the anticipated work areas to demonstrate that the anticipated impacts to regulated features are mitigated.

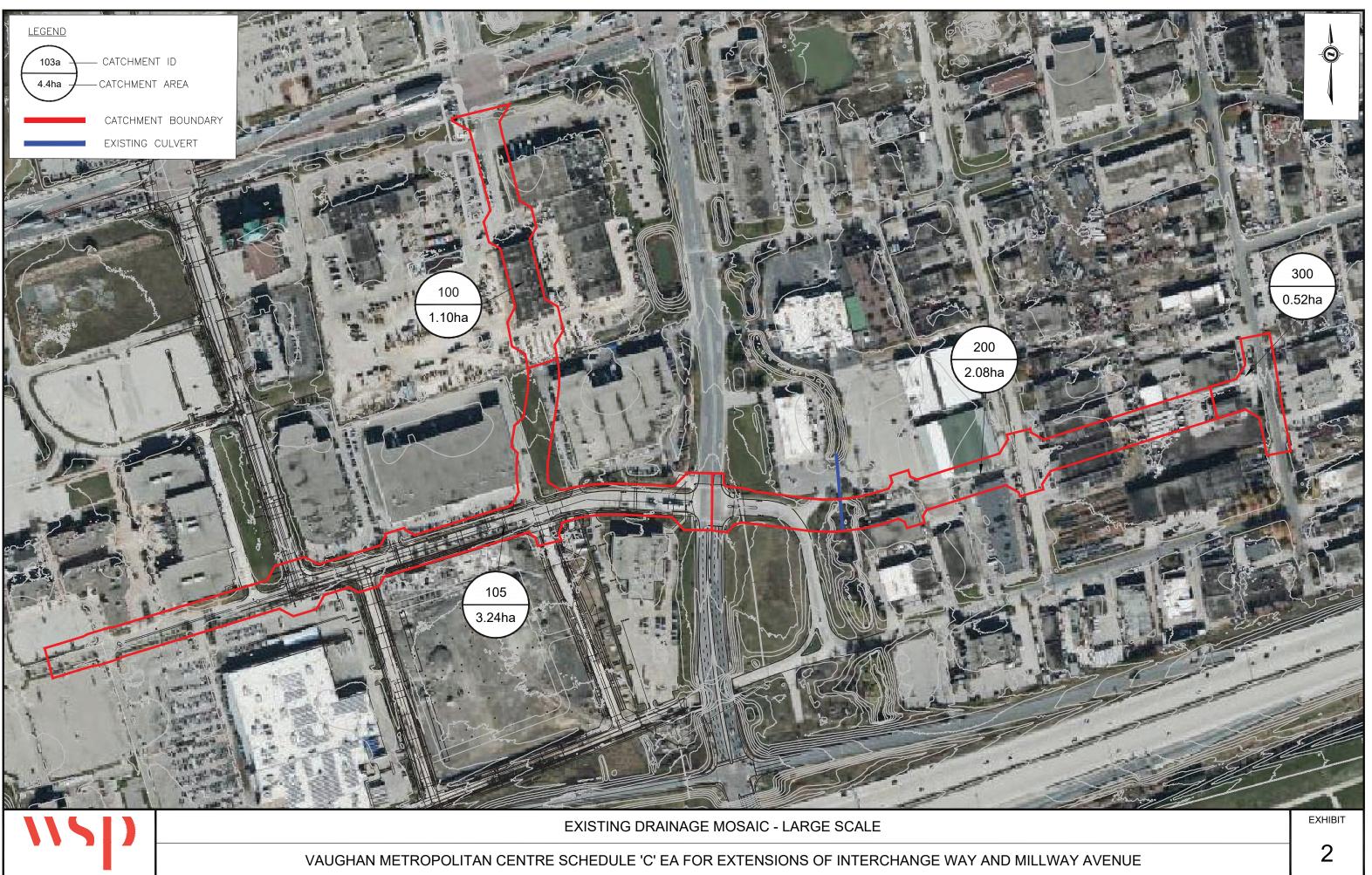


### 7 Conclusions

This report outlines the hydrologic analysis of the contributing ROW catchments within the study limits west and east of Jane Street as well as the 100-year storage to be considered in the Interchange Pond retrofit and the SWM strategy of the SEQ based on the road extensions on Interchange Way and Millway Avenue. The following conclusions can be made:

- The proposed design includes an extension of Millway Avenue from Highway 7 to Interchange Way and the improvement and extension of Interchange Way between Commerce Street and Creditstone Road.
- Hydrological analysis of the roadway corridor was carried out using the Visual OTTHYMO hydrologic model under existing and proposed conditions.
- Unit flow relationships were used to calculate the 100-year required volumes for quantity control of the contributing ROW study areas west and east of Jane Street. The volumes are the following:
  - For the contributing study area west of Jane Street a volume of 2606 m<sup>3</sup> should be considered in the Interchange Pond retrofit.
  - For the contributing study area east of Jane Street a volume of 1565 m<sup>3</sup> should be considered in the SWM strategy of the SEQ.
- SWM Quality Control and onsite retention will be achieved through the Interchange Pond retrofit and the SWM strategy of the SEQ.
- 15 mm onsite retention is being proposed for development sites west and east of Jane Street achieved by the Interchange Pond retrofit via extended detention and the SWM strategy for the SEQ may include extended detention should a pond be proposed.

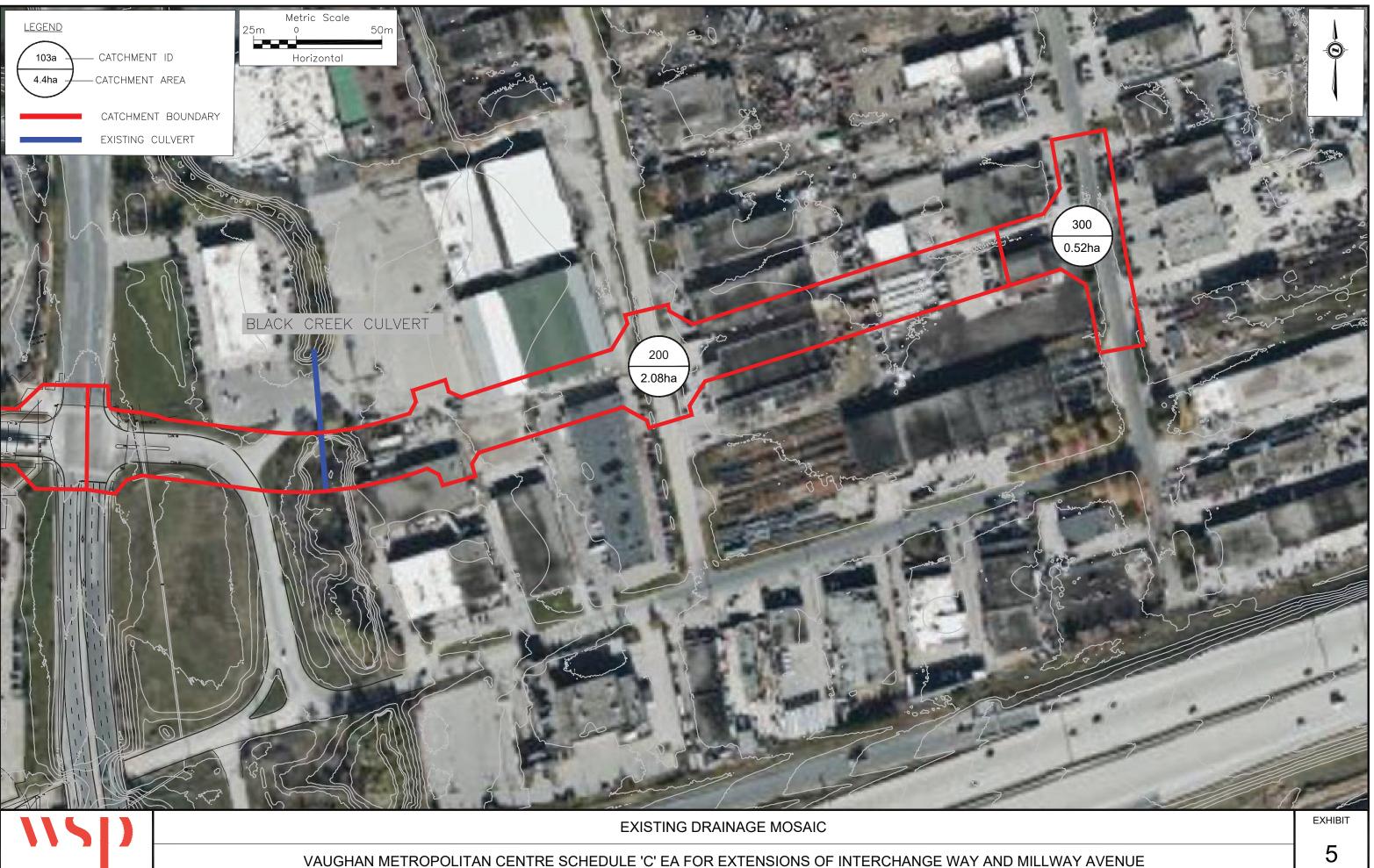


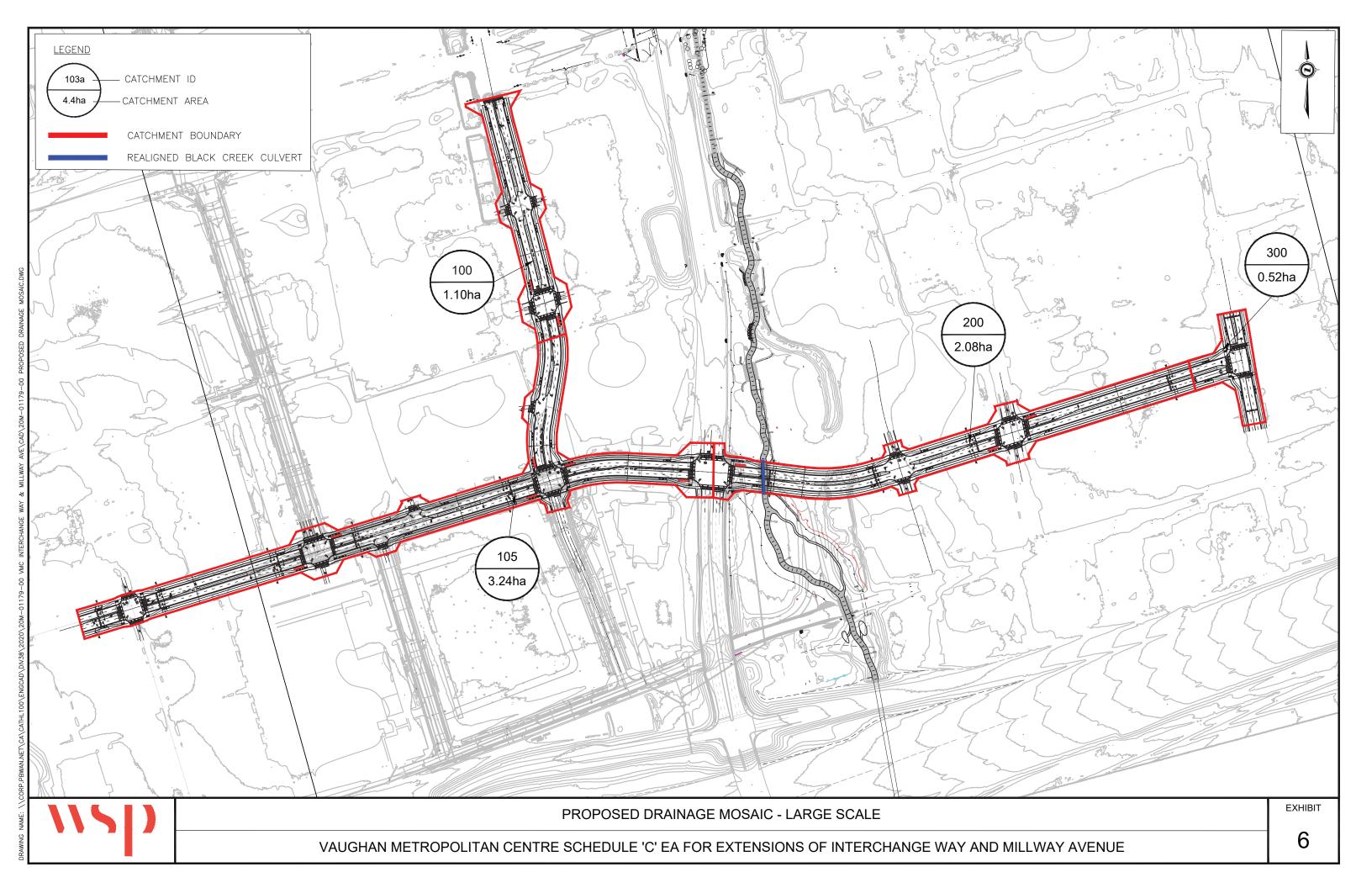


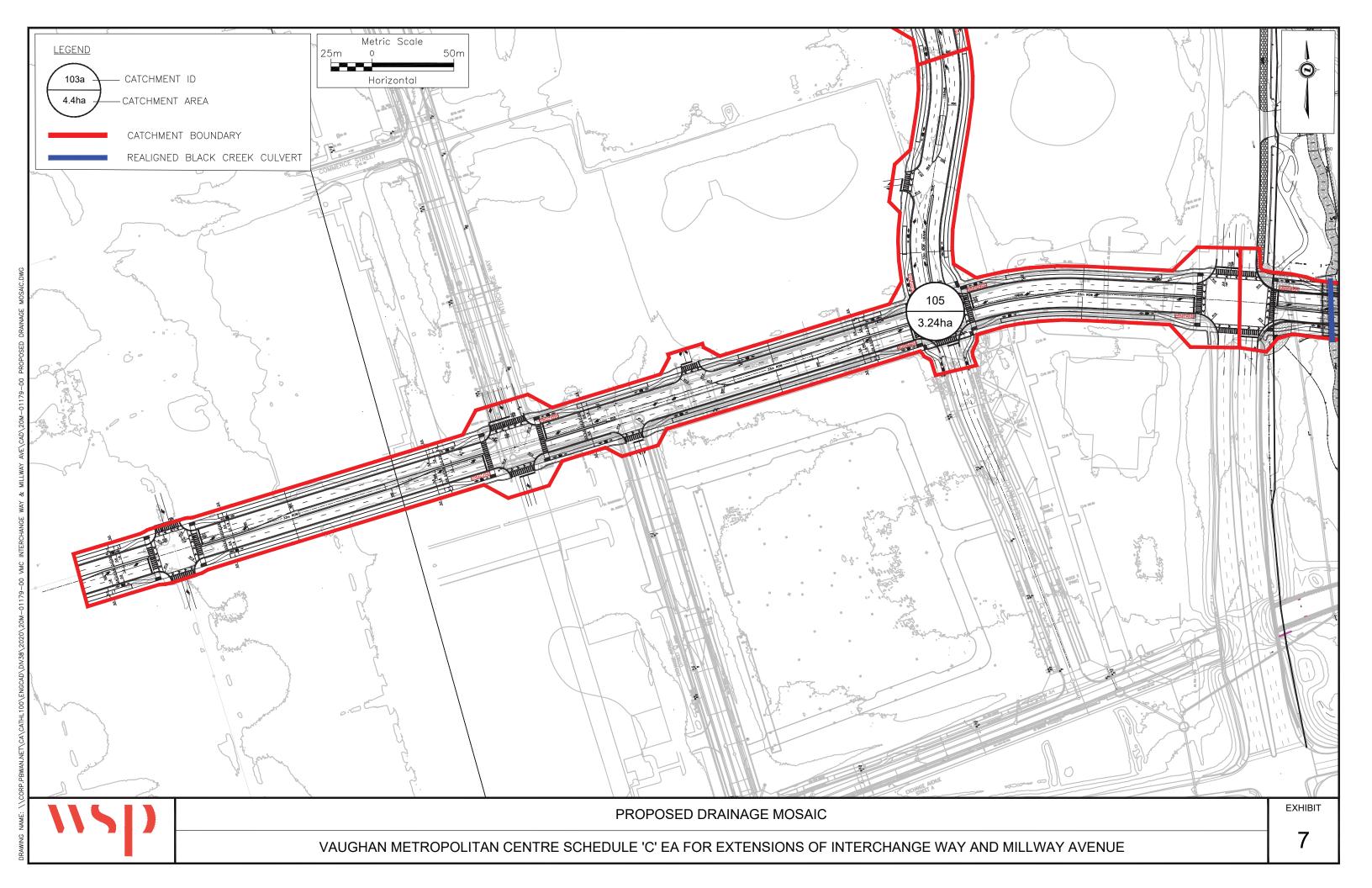


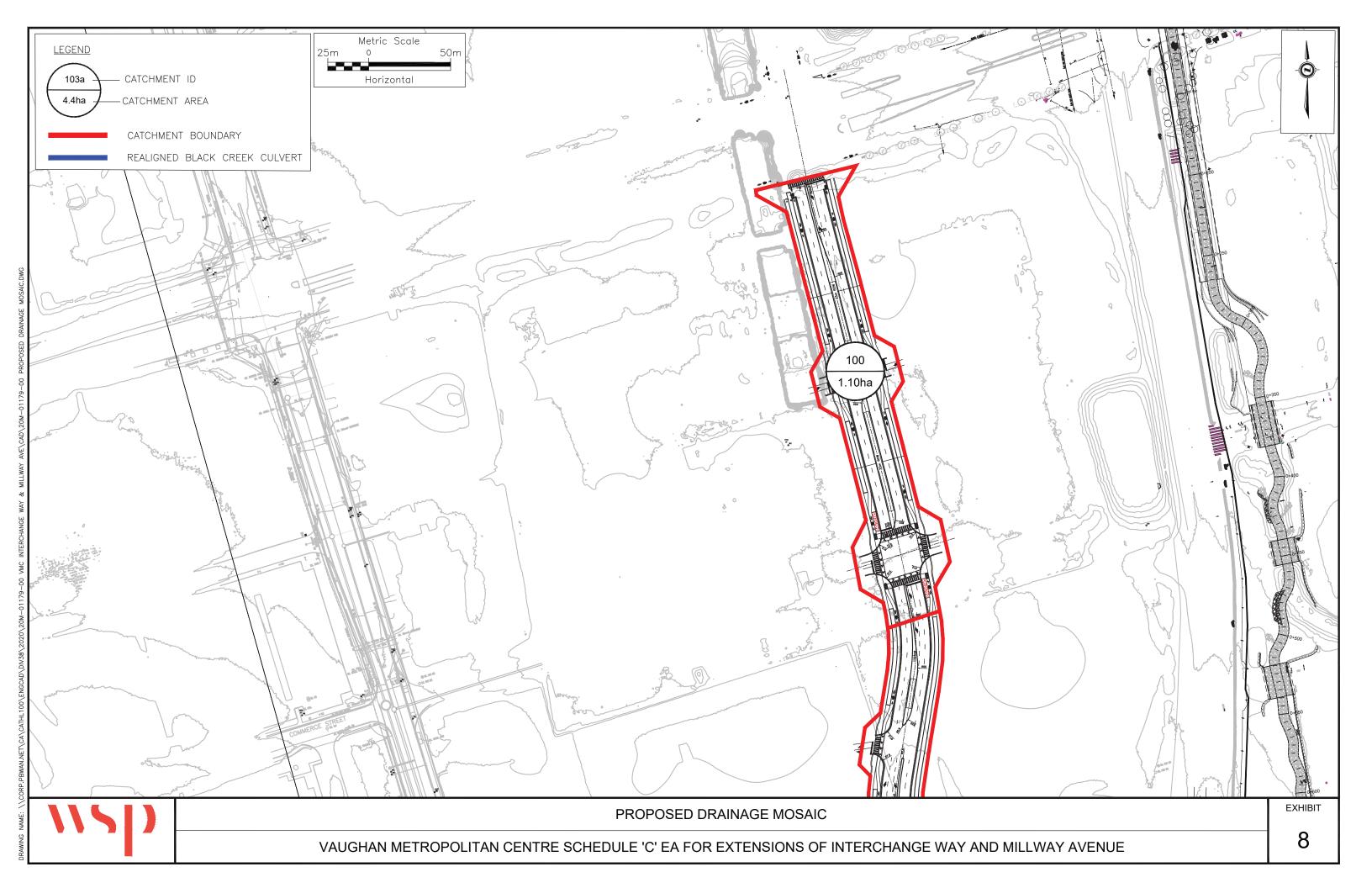


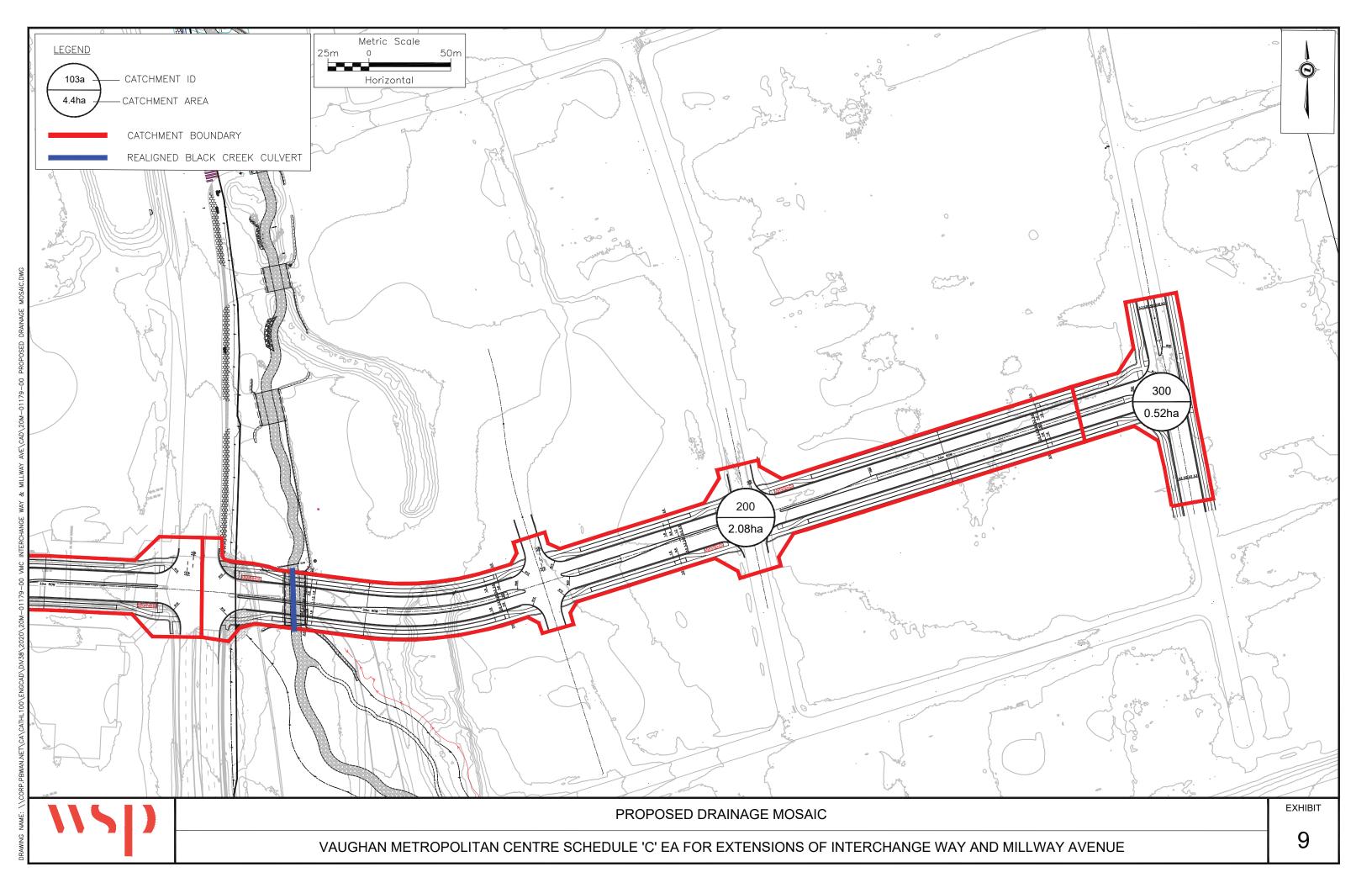












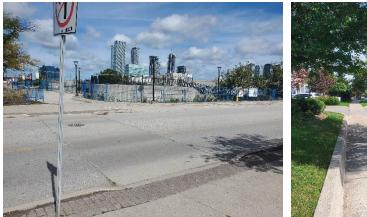
Vaughan Metropolitan Centre Schedule 'C' Class Environmental Assessment (EA) Studies for the Extensions of Interchange Way and Millway Avenue



# Appendix A : Photographic Inventory



Appendix A



Interchange Way - Looking North



Interchange Way – Looking East



Interchange Way – Looking West



Interchange Way – Around Millway Ave. proposed extension



Jane St. & Interchange Way – Looking East



Jane St. & Interchange Way - Open grass area



Jane St. & Interchange Way - Looking South



Jane St. & Interchange Way – 2018 Black Creek Realignment Location Looking North



Culvert C1 North - Looking North



Culvert C1 North – Looking South



Culvert C1 South - Culvert end



Culvert C1 South - Gabion wall



SWM Pond 1 – Looking South



SWM Pond 1 – External area next to fence line



Maplecrete Road –Looking East



Maplecrete Road - Looking South

Vaughan Metropolitan Centre EA Project No. 20M-01179-00 City of Vaughan



Maplecrete Road – Looking North



Creditstone Road – Looking West



Maplecrete Road - Looking West



Creditstone Road - Looking South



Creditstone Road – Looking North



Creditstone Road – Looking East

Vaughan Metropolitan Centre EA Project No. 20M-01179-00 City of Vaughan Vaughan Metropolitan Centre Schedule 'C' Class Environmental Assessment (EA) Studies for the Extensions of Interchange Way and Millway Avenue



# Appendix B: Existing Conditions Hydrology



\_\_\_\_\_\_ SSSSS U U A L V V Ι (v 6.2.2015) V I U U A A V SS L SS V V U U AAAAA L Ι V V Ι SS U U A A L Т VV SSSSS UUUUU A A LLLLL 000 TTTTT TTTTT H НҮҮМ 000 ТΜ М 0 0 Т Т н Н ΥY MM MM 0 0 0 0 Т Т н Н Y М ΜО 0 Т Т 000 Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\b bdd34cc-aa96-4cc6-ae54-cba11005cb59\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\b bdd34cc-aa96-4cc6-ae54-cba11005cb59\s TIME: 10:47:41 DATE: 02-25-2025 USER: COMMENTS: \_\_\_\_\_ -----\*\* \*\* SIMULATION : AES 12H\_002-Humber -----READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\

   Ptotal= 42.00 mm	Comment		dc2c-1c8 12H_002-	d-486e-8a0 Humber	08-c6400	e73024e8\8	83df27d6			
TIME hrs 0.00 0.25 0.50 0.75 1.00 1.25 1.50 1.75	mm/hr 0.00 0.42 0.42 0.42 0.42 0.42 0.42 0.42	3.75 4.00 4.25 4.50 4.75 5.00	RAIN mm/hr 7.14 7.14 7.14 19.32 19.32 19.32 19.32	' hrs   6.50   6.75   7.00   7.25   7.50   7.75   8.00   8.25	1.68 1.68 1.68 1.68 0.84	hrs   9.75   10.00   10.25   10.50   10.75   11.00   11.25   11.50	RAIN mm/hr 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42			
2.00 2.25 2.50 2.75 3.00	2.52 2.52 2.52	5.75 6.00	5.46 5.46 5.46 5.46 2.94	8.75 9.00 9.25		12.00	0.42 0.42			
CALIB     STANDHYD ( 0100)  Area (ha)= 1.10  ID= 1 DT= 5.0 min   Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00										
Surface Area Dep. Storage Average Slope Length Mannings n	(ha)= (mm)= (%)= (m)= =	IMPERVIO 1.01 1.00 1.00 85.00 0.013		RVIOUS (i) 0.09 5.00 2.00 40.00 0.350	)					

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

	IR/	ANSFURMEL	J HYEIUGR	APH	-	
RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.42	4.000	7.14	7.083	2.94	10.17	0.42
	mm/hr 0.00 0.00 0.42 0.42 0.42 0.42 0.42 0.42	RAINTIMEmm/hrhrs0.003.1670.003.2500.003.3330.423.4170.423.5000.423.5830.423.6670.423.7500.423.8330.423.917	RAINTIMERAINmm/hrhrsmm/hr0.003.1672.520.003.2502.520.003.3337.140.423.4177.140.423.5007.140.423.5837.140.423.6677.140.423.7507.140.423.9177.14	RAINTIMERAIN'TIMEmm/hrhrsmm/hr'hrs0.003.1672.526.2500.003.2502.526.3330.003.3337.146.4170.423.4177.146.5000.423.5007.146.5830.423.6677.146.6670.423.7507.146.8330.423.9177.147.000	RAINTIMERAINTIMERAINmm/hrhrsmm/hr'hrsmm/hr0.003.1672.526.2505.460.003.2502.526.3332.940.003.3337.146.4172.940.423.4177.146.5002.940.423.5007.146.5832.940.423.5837.146.6672.940.423.6677.146.7502.940.423.7507.146.8332.940.423.8337.146.9172.940.423.8337.147.0002.94	mm/hrhrsmm/hr'hrsmm/hrhrs0.003.1672.526.2505.469.330.003.2502.526.3332.949.420.003.3337.146.4172.949.500.423.4177.146.5002.949.580.423.5007.146.5832.949.670.423.5837.146.6672.949.750.423.6677.146.7502.949.830.423.7507.146.8332.949.920.423.8337.146.9172.9410.000.423.9177.147.0002.9410.08

---- TRANSFORMED HYETOGRAPH ----

1.000 0.42			7.167	2.94	10.25	0.42
1.083 0.42			7.250	2.94	10.33	0.42
1.167 0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250 0.42	4.333 19	9.32	7.417	1.68	10.50	0.42
1.333 0.42			7.500	1.68	10.58	0.42
1.417 0.42			7.583	1.68	10.67	0.42
1.500 0.42			7.667	1.68	10.75	0.42
1.583 0.42			7.750	1.68	10.83	0.42
1.667 0.42		•	7.833	1.68	10.92	0.42
1.750 0.42	•		7.917	1.68	11.00	0.42
1.833 0.42			8.000	1.68	11.08	0.42
1.917 0.42			8.083	1.68	11.17	0.42
2.000 0.42			8.167	1.68	11.25	0.42
2.083 0.42			8.250	1.68	11.33	0.42
	•			0.84	11.42	
			8.333 8.417			0.42
2.250 0.42				0.84	11.50	0.42
2.333 2.52			8.500	0.84	11.58	0.42
2.417 2.52			8.583	0.84	11.67	0.42
2.500 2.52			8.667	0.84	11.75	0.42
2.583 2.52			8.750	0.84	11.83	0.42
2.667 2.52			8.833	0.84	11.92	0.42
2.750 2.52			8.917	0.84	12.00	0.42
2.833 2.52			9.000	0.84	12.08	0.42
2.917 2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000 2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083 2.52	6.167	5.46	9.250	0.84		
Max.Eff.Inten.(mm/hr)=	19.32	9	.04			
over (min)	5.00		.00			
Storage Coeff. (min)=	4.47 (i:		.06 (ii)			
Unit Hyd. Tpeak (min)=	5.00	•	.00 (11)			
Unit Hyd. peak (cms)=	0.23		.00			
onite nya, peak (cms)-	0.23	0	• • •	*т∩т	ALS*	
PEAK FLOW (cms)=	0.05	A	.00		056 (iii)	
					• •	
TIME TO PEAK    (hrs)= RUNOFF VOLUME    (mm)=			.50		.25 .89	
			.76			
TOTAL RAINFALL (mm)=	42.00	42			.00	
RUNOFF COEFFICIENT =	0.98	0	.35	0	.93	
*** WARNING: STORAGE COEFF.	IS SMALLER <sup>-</sup>	THAN TI	ME STEP!			
(i) CN PROCEDURE SELECT	FD FOR PFRV	τους ιο	SSES			
$CN^* = 82.0$ Ia						
(ii) TIME STEP (DT) SHOU	•	• •	•			
THAN THE STORAGE CO			YOUL			
(iii) PEAK FLOW DOES NOT						
(III) PEAN FLOW DUES NUT .	TINCLUDE DASI	ELLOW I				
·		=	<b>~ ~ ~ ~ ~</b>			<b> </b>
CALIB						

STANDHYD ( 0105)   ID= 1 DT= 5.0 min	Area Total	(ha)= Imp(%)=	3.24 70.00	Dir. Conn.(%)=	70.00
Surface Area Dep. Storage Average Slope Length Mannings n	(ha)= (mm)= (%)= (m)= =	IMPERVI 2.2 1.0 1.0 147.0 0.01	7 0 0 0	PERVIOUS (i) 0.97 5.00 2.00 40.00 0.350	

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	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42

2.917 2.52 | 6.000 5.46 | 9.083 0.84 | 12.17 0.42 

 3.000
 2.52
 6.083
 5.46
 9.167
 0.84
 12.25
 0.42

 3.083
 2.52
 6.167
 5.46
 9.250
 0.84
 1

 Max.Eff.Inten.(mm/hr)= 19.32 9.04 5.00 30.00 6.21 (ii) 28.80 (ii) over (min) Storage Coeff. (min)= Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.19 0.04 \*TOTALS\* (cms)= 0.12 0.02 K (hrs)= 5.25 5.50 PEAK FLOW 0.137 (iii) (hrs)= TIME TO PEAK 5.25 

 RUNOFF VOLUME (mm)=
 41.00
 14.76

 TOTAL RAINFALL (mm)=
 42.00
 42.00

 RUNOFF COEFFICIENT =
 0.98
 0.35

 33.12 42.00 0.79 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006) AREA QPEAK TPEAK R.V. \_\_\_\_\_ ID = 3 (0006): 4.34 0.193 5.25 34.58 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ | CALIB | STANDHYD ( 0200) | Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 ------IMPERVIOUS PERVIOUS (i) Surface Area(ha)=1.75Dep. Storage(mm)=1.00 0.33 5.00 Average Slope(%)=1.002.00Length(m)=118.0040.00Mannings n=0.0130.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH									
TIME	RAIN	TIME	RAIN	' TIME	RAIN		RAIN		
hrs	mm/hr	hrs	mm/hr	'hrs	mm/hr		mm/hr		
0.083		3.167	2.52	6.250	5.46	9.33	0.42		
0.167		3.250	2.52	6.333	2.94	9.42	0.42		
0.250		3.333	7.14	6.417	2.94	9.50	0.42		
0.333		3.417	7.14	6.500	2.94	9.58	0.42		
0.417		3.500	7.14	6.583	2.94	9.67	0.42		
0.500		3.583	7.14	6.667	2.94		0.42		
0.583	0.42	3.667	7.14	:	2.94	9.83	0.42		
0.667	0.42	3.750	7.14		2.94	9.92	0.42		
0.750		3.833	7.14	6.917	2.94	10.00	0.42		
0.833		3.917	7.14	7.000	2.94	10.08	0.42		
0.917		4.000	7.14	7.083	2.94	10.17	0.42		
1.000		4.083	7.14	7.167	2.94	10.25	0.42		
1.083		4.167	7.14	7.250	2.94	10.33	0.42		
1.167		4.250	7.14	7.333	1.68	10.42	0.42		
1.250		4.333	19.32	7.417	1.68	10.50	0.42		
1.333		4.417	19.32	7.500	1.68	10.58	0.42		
1.417		4.500	19.32	7.583	1.68	10.67	0.42		
1.500		4.583	19.32	7.667	1.68	10.75	0.42		
1.583		4.667	19.32	7.750	1.68	10.83	0.42		
1.667		4.750	19.32	7.833	1.68	10.92	0.42		
1.750		4.833	19.32		1.68	11.00	0.42		
1.833		4.917	19.32	8.000	1.68	11.08	0.42		
1.917		5.000	19.32	8.083	1.68	11.17	0.42		
2.000		5.083	19.32	8.167	1.68	11.25	0.42		
2.083		5.167	19.32	8.250	1.68	11.33	0.42		
2.167		5.250	19.32	8.333	0.84	11.42	0.42		
2.250		5.333	5.46	8.417	0.84	11.50	0.42		
2.333		5.417	5.46	8.500	0.84	11.58	0.42		
2.417		5.500	5.46	8.583	0.84	11.67	0.42		
2.500		5.583	5.46	8.667	0.84	11.75	0.42		
2.583		5.667	5.46	8.750	0.84	11.83	0.42		
2.667		5.750		8.833		11.92	0.42		
2.750		5.833	5.46	8.917	0.84	12.00	0.42		
2.833		5.917	5.46		0.84		0.42		
2.917		:	5.46	1	0.84		0.42		
3.000		6.083	5.46		0.84	12.25	0.42		
3.083		6.167	5.46	9.250	0.84		01.12		
5.005	2.52	0.10	5.10	1 3.230	0.01				
Max.Eff.Inten.(m	m/hr)=	19.32		9.04					
•	(min)	5.00		30.00					
Storage Coeff.	(min)=		(ii)	28.03 (ii)					
Unit Hyd. Tpeak	• •	5.00	()	30.00					
Unit Hyd. peak	• •	0.20		0.04					
onite nyu, peuk		5.20		0.01	*T01	ALS*			
PEAK FLOW	(cms)=	0.09		0.01		.099 (iii)			
TIME TO PEAK	(hrs) =	5.25		5.50		5.25	,		
THE TO TEAK	(	2.23		2.20	-				

RUNOFF VOL TOTAL RAIN RUNOFF COE	IFALL	(mm)=	42.00	4	14.76 42.00 0.35	42	5.79 2.00 9.88	
CN* (ii) TIME	= 82 STEP ( THE ST	ORAGE COE	= Dep. 3 _D BE SM/ EFFICIEN	Storage ALLER OR T.	(Above) EQUAL			
CALIB   STANDHYD ( 0  ID= 1 DT= 5.0	300)		• •		Dir. Conn	.(%)= 8	34.00	
		]	[MPERVIO	US PEI	RVIOUS (i	)		
Surface Ar		(ha)=			0.08 <sup>`</sup>	•		
Dep. Stora	ge	(mm)=	1.00		5.00			
Average SI	ope	(%)=	1.00		2.00			
Length		(m)=	59.00	4				
Mannings n	l	=	0.013	(	0.350			
NOTE:	RAINFA	LL WAS TF	RANSFORM	ED TO	5.0 MIN.	TIME STE	P.	
			TR/	ANSFORME	D HYETOGR	APH		
	TIME	RAIN	TIME			RAIN		RAIN
	hrs		hrs		'hrs		hrs	
	0.083				6.250	5.46	9.33	0.42
	0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
	0.250				6.417		9.50	0.42
	0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
	0.417	0.42	3.500		6.583		9.67	0.42
	0.500	0.42		7.14	6.667	2.94		0.42
	0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
	0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
	0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
	0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
	0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
	1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
	1.083		4.167	7.14		2.94	10.33	0.42
	1.167		4.250	7.14	7.333   7.417	1.68	10.42	0.42 0.42
	1.250	0.42		19.32	/.41/	1.68	10.50	0.42

1.333

1.417

1.500

1.583

1.667

0.42 | 4.417

0.42 | 4.500

4.583

0.42 | 4.667

0.42 | 4.750

0.42

19.32 | 7.500

19.32 | 7.583

19.32 | 7.750

19.32 | 7.833

7.667

19.32

1.68 | 10.58

1.68 | 10.83

1.68 | 10.92

10.67

10.75

1.68 |

1.68

0.42

0.42

0.42

0.42

0.42

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$									
<pre> 1.917 0.42   5.000 19.32   8.083 1.68   11.17 2.000 0.42   5.083 19.32   8.167 1.68   11.25 2.083 0.42   5.157 19.32   8.250 1.68   11.33 2.167 0.42   5.250 19.32   8.333 0.84   11.42 2.250 0.42   5.333 5.46   8.417 0.84   11.50 2.333 2.52   5.417 5.46   8.500 0.84   11.58 2.417 2.52   5.500 5.46   8.583 0.84   11.67 2.500 2.52   5.583 5.46   8.667 0.84   11.75 2.583 2.52   5.667 5.46   8.750 0.84   11.83 2.667 2.52   5.750 5.46   8.833 0.84   11.92 2.750 2.52   5.833 5.46   8.917 0.84   12.00 2.833 2.52   5.667 5.46   9.083 0.84   12.00 2.833 2.52   5.917 5.46   9.000 0.84   12.08 2.917 2.52   6.083 5.46   9.080 0.84   12.17 3.000 2.52   6.083 5.46   9.083 0.84   12.17 3.000 2.52   6.167 5.46   9.025 0.84    Max.Eff.Inten.(mm/hr)= 19.32 9.04</pre>				•					
2.000 0.42   5.083 19.32   8.167 1.68   11.25 2.083 0.42   5.167 19.32   8.250 1.68   11.33 2.167 0.42   5.333 5.46   8.333 0.84   11.42 2.250 0.42   5.333 5.46   8.417 0.84   11.50 2.333 2.52   5.417 5.46   8.583 0.84   11.58 2.417 2.52   5.560 5.46   8.667 0.84   11.75 2.583 2.52   5.583 5.46   8.667 0.84   11.75 2.583 2.52   5.750 5.46   8.833 0.84   11.92 2.750 2.52   5.750 5.46   8.833 0.84   11.92 2.750 2.52   5.750 5.46   8.917 0.84   12.00 2.833 2.52   5.917 5.46   9.000 0.84   12.08 2.917 2.52   6.000 5.46   9.167 0.84   12.17 3.000 2.52   6.167 5.46   9.250 0.84   12.25 3.083 2.52   0.02 0.00 0.0025 (111) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTALS* PEAK FLOW (cms)= 0.92 0.02 0.020 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 **** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (1) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 I a = Dep. Storage (Above) (11) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (11) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 									
2.083 0.42   5.167 19.32   8.250 1.68   11.33 2.167 0.42   5.250 19.32   8.333 0.84   11.42 2.250 0.42   5.333 5.46   8.417 0.84   11.50 2.333 2.52   5.417 5.46   8.500 0.84   11.58 2.417 2.52   5.580 5.46   8.583 0.84   11.67 2.590 2.52   5.583 5.46   8.667 0.84   11.75 2.583 2.52   5.567 5.46   8.750 0.84   11.83 2.667 2.52   5.750 5.46   8.917 0.84   12.00 2.833 2.52   5.917 5.46   9.090 0.84   12.08 2.917 2.52   6.000 5.46   9.083 0.84   12.00 2.833 2.52   6.167 5.46   9.083 0.84   12.25 3.083 2.52   6.167 5.46   9.080 0.84   12.25 3.083 2.52   6.167 5.46   9.250 0.84   Max.Eff.Inten.(mm/hr)= 19.32 9.04 vover (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 **** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFF. IS SMALLER OR EQUAL THAN THE STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFF. INCLUDE BASEFLOW IF ANY.				•					
<pre>2.167 0.42 5.250 19.32 8.333 0.84 11.42 2.250 0.42 5.333 5.46 8.417 0.84 11.50 2.333 2.52 5.417 5.46 8.500 0.84 11.58 2.417 2.52 5.500 5.46 8.583 0.84 11.67 2.500 2.52 5.583 5.46 8.667 0.84 11.75 2.583 2.52 5.667 5.46 8.750 0.84 11.83 2.667 2.52 5.750 5.46 8.833 0.84 11.92 2.750 2.52 5.833 5.46 9.060 0.84 11.20 2.833 2.52 5.917 5.46 9.060 0.84 12.00 2.833 2.52 6.000 5.46 9.083 0.84 12.17 3.000 2.52 6.083 5.46 9.167 0.84 12.17 3.000 2.52 6.083 5.46 9.167 0.84 12.17 3.000 2.52 6.167 5.46 9.250 0.84 12.25 3.083 2.52 6.00 30.00 Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. Tpeak (min)= 41.00 14.76 36.78 TOTAL5* PEAK FLOW (cms)= 0.02 0.00 42.00 42.00 42.00 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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. </pre>									
2.250 0.42   5.333 5.46   8.417 0.84   11.50 2.333 2.52   5.417 5.46   8.500 0.84   11.58 2.417 2.52   5.500 5.46   8.583 0.84   11.67 2.500 2.52   5.583 5.46   8.667 0.84   11.75 2.583 2.52   5.750 5.46   8.750 0.84   11.92 2.750 2.52   5.750 5.46   8.937 0.84   12.00 2.833 2.52   5.917 5.46   9.000 0.84   12.00 2.833 2.52   6.000 5.46   9.083 0.84   12.17 3.000 2.52   6.083 5.46   9.167 0.84   12.25 3.083 2.52   6.167 5.46   9.250 0.84   Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Vor (min) 5.00 30.00 Storage Coeff. (min)= 41.00 14.76 36.78 TOTALS* PEAK FLOW (cms)= 0.26 0.04 *TOTALS* **TOTALS* PEAK FLOW (cms)= 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFF. IS SMALLER THAN TIME STEP! (1) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = DEP. STORAGE SECOEFF. IS SMALER THEAK R.V. 									
2.333 2.52 5.417 5.46 8.500 0.84 11.58 2.417 2.52 5.500 5.46 8.583 0.84 11.67 2.500 2.52 5.583 5.46 8.667 0.84 11.75 2.583 2.52 5.667 5.46 8.750 0.84 11.83 2.667 2.52 5.750 5.46 8.833 0.84 11.92 2.750 2.52 5.833 5.46 9.000 0.84 12.00 2.833 2.52 5.917 5.46 9.000 0.84 12.00 2.833 2.52 5.917 5.46 9.083 0.84 12.17 3.000 2.52 6.083 5.46 9.167 0.84 12.25 3.083 2.52 6.167 5.46 9.167 0.84 12.25 3.083 2.52 6.167 5.46 9.250 0.84 1 Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CM* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CM* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFF. IS SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 						:			
2.417 2.52 5.500 5.46 8.583 0.84 11.67 2.500 2.52 5.583 5.46 8.667 0.84 11.75 2.583 2.52 5.667 5.46 8.750 0.84 11.83 2.667 2.52 5.750 5.46 8.833 0.84 11.92 2.750 2.52 5.833 5.46 9.000 0.84 12.00 2.833 2.52 6.000 5.46 9.083 0.84 12.17 3.000 2.52 6.000 5.46 9.083 0.84 12.17 3.000 2.52 6.000 30.00 Storage Coeff. (min) = 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. Tpeak (min)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL S* PEAK FLOW (cms)= 0.02 0.00 42.00 42.00 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 **** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFF. IS SMALLER OR EQUAL THAN THE STORAGE COEFF. IS SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.						•			
2.500 2.52 5.583 5.46 8.667 0.84 11.75 2.583 2.52 5.667 5.46 8.750 0.84 11.83 2.667 2.52 5.750 5.46 8.833 0.84 11.92 2.750 2.52 5.833 5.46 9.000 0.84 12.00 2.833 2.52 5.917 5.46 9.000 0.84 12.08 2.917 2.52 6.000 5.46 9.083 0.84 12.17 3.000 2.52 6.083 5.46 9.167 0.84 12.25 3.083 2.52 6.167 5.46 9.120 0.84 12.25 3.083 2.52 6.167 5.46 9.250 0.84 12.25 3.083 2.52 6.00 30.00 Unit Hyd. peak (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. peak (cms)= 0.26 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (i11) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 									
2.583 2.52   5.667 5.46   8.750 0.84   11.83 2.667 2.52   5.750 5.46   8.833 0.84   11.92 2.750 2.52   5.833 5.46   9.900 0.84   12.00 2.833 2.52   5.917 5.46   9.080 0.84   12.08 2.917 2.52   6.000 5.46   9.083 0.84   12.17 3.000 2.52   6.083 5.46   9.167 0.84   12.25 3.083 2.52   6.167 5.46   9.250 0.84   Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. Tpeak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 **** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFF. IS SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 									
2.667 2.52   5.750 5.46   8.833 0.84   11.92 2.750 2.52   5.833 5.46   8.917 0.84   12.00 2.833 2.52   5.917 5.46   9.083 0.84   12.08 2.917 2.52   6.000 5.46   9.083 0.84   12.17 3.000 2.52   6.083 5.46   9.167 0.84   12.25 3.083 2.52   6.167 5.46   9.250 0.84   Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Nunit Hyd. Tpeak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFF. IS SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 					5.46	5.583	2.52	2.500	
2.750 2.52   5.833 5.46   8.917 0.84   12.00 2.833 2.52   5.917 5.46   9.000 0.84   12.08 2.917 2.52   6.000 5.46   9.083 0.84   12.17 3.000 2.52   6.167 5.46   9.167 0.84   12.25 3.083 2.52   6.167 5.46   9.250 0.84   Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 **** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFF.IENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 					5.46	5.667	2.52	2.583	
2.833 2.52 5.917 5.46 9.000 0.84 12.08 2.917 2.52 6.000 5.46 9.083 0.84 12.17 3.000 2.52 6.083 5.46 9.167 0.84 12.25 3.083 2.52 6.167 5.46 9.250 0.84 Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 **** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. ADD HYD ( 0007) 1 + 2 = 3   AREA QPEAK TPEAK R.V. 									
2.917 2.52 6.000 5.46 9.083 0.84 12.17 3.000 2.52 6.083 5.46 9.167 0.84 12.25 3.083 2.52 6.167 5.46 9.250 0.84 Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. peak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above) (ii) TIME STORAGE COEFF. IS SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY. 									
3.000 2.52   6.083 5.46   9.167 0.84   12.25 3.083 2.52   6.167 5.46   9.250 0.84   Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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. 									
3.083 2.52   6.167 5.46   9.250 0.84   Max.Eff.Inten.(mm/hr)= 19.32 9.04 over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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. 									
<pre>Max.Eff.Inten.(mm/hr)= 19.32 9.04</pre>	0.42								
over (min) 5.00 30.00 Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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. 		· 1	0.84	9.250	5.46	6.167	2.52	3.083	
over (min)         5.00         30.00           Storage Coeff. (min)=         3.59 (ii)         26.18 (ii)           Unit Hyd. Tpeak (min)=         5.00         30.00           Unit Hyd. peak (cms)=         0.26         0.04           *TOTALS*           PEAK FLOW (cms)=         0.02         0.00         0.025 (iii)           TIME TO PEAK (hrs)=         5.08         5.59         5.25           RUNOFF VOLUME (mm)=         41.00         14.76         36.78           TOTAL RAINFALL (mm)=         42.00         42.00         42.00           RUNOFF COEFFICIENT =         0.98         0.35         0.88           ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!           (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:         CN* = 82.0         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.				9 04		19 22	m/hr)-	Eff Inten (m	Mav
Storage Coeff. (min)= 3.59 (ii) 26.18 (ii) Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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. 									TICK.
Unit Hyd. Tpeak (min)= 5.00 30.00 Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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. 			)		(ii)	2.00	$(\min) =$	age Coeff	Stor
Unit Hyd. peak (cms)= 0.26 0.04 *TOTALS* PEAK FLOW (cms)= 0.02 0.00 0.025 (iii) TIME TO PEAK (hrs)= 5.08 5.50 5.25 RUNOFF VOLUME (mm)= 41.00 14.76 36.78 TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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 ( 0007) 1 + 2 = 3   AREA QPEAK TPEAK R.V. 			,						
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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 ( 0007) 1 + 2 = 3   AREA QPEAK TPEAK R.V. 									
PEAK FLOW       (cms)=       0.02       0.00       0.025 (iii)         TIME TO PEAK       (hrs)=       5.08       5.50       5.25         RUNOFF VOLUME       (mm)=       41.00       14.76       36.78         TOTAL RAINFALL       (mm)=       42.00       42.00       42.00         RUNOFF COEFFICIENT       0.98       0.35       0.88         *****       WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!         (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0       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.		ΟΤΔΙ 5*	*т	0.07		0.20	( ) –	nyu, peak	
TIME TO PEAK (hrs)=       5.08       5.50       5.25         RUNOFF VOLUME (mm)=       41.00       14.76       36.78         TOTAL RAINFALL (mm)=       42.00       42.00       42.00         RUNOFF COEFFICIENT =       0.98       0.35       0.88         ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: 	)			0.00		Q Q 2	(cms) =	FLOW	ρεδι
TOTAL RAINFALL (mm)=       42.00       42.00       42.00         RUNOFF COEFFICIENT =       0.98       0.35       0.88         ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!         (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:         CN* =       82.0       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.	. /					5 02	(hrs) =	ΤΟ ΡΕΔΚ	
TOTAL RAINFALL (mm)= 42.00 42.00 42.00 RUNOFF COEFFICIENT = 0.98 0.35 0.88 **** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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 ( 0007)  1 + 2 = 3   AREA QPEAK TPEAK R.V. 						41 AA	(mm) =		RIIN
RUNOFF COEFFICIENT       =       0.98       0.35       0.88         ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!         (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:         CN*       =       82.0       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.						42.00	(mm) =		TOT
<pre>**** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 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 ( 0007)  1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 ( 0200): 2.08 0.099 5.25 36.79 + ID2= 2 ( 0300): 0.52 0.025 5.25 36.78 </pre>									
ADD HYD ( 0007) 1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 ( 0200): 2.08 0.099 5.25 36.79 + ID2= 2 ( 0300): 0.52 0.025 5.25 36.78			!	LOSSES: (Above) EQUAL	ERVIOUS Storage ALLER OI	ED FOR P = Dep. LD BE SM EFFICIEN	RE SELECT 2.0 Ia (DT) SHOU TORAGE CO	) CN PROCEDU CN* = 8 ) TIME STEP THAN THE S	(: (i:
1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0200): 2.08 0.099 5.25 36.79 + ID2= 2 (0300): 0.52 0.025 5.25 36.78				IF ANY.	BASEFLO	INCLUDE	DOES NOT	) PEAK FLOW	(11:
1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0200): 2.08 0.099 5.25 36.79 + ID2= 2 (0300): 0.52 0.025 5.25 36.78									
1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0200): 2.08 0.099 5.25 36.79 + ID2= 2 (0300): 0.52 0.025 5.25 36.78									
1 + 2 = 3   AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ID1= 1 (0200): 2.08 0.099 5.25 36.79 + ID2= 2 (0300): 0.52 0.025 5.25 36.78									
(ha) (cms) (hrs) (mm) ID1= 1 ( 0200): 2.08 0.099 5.25 36.79 + ID2= 2 ( 0300): 0.52 0.025 5.25 36.78 									
ID1= 1 ( 0200): 2.08 0.099 5.25 36.79 + ID2= 2 ( 0300): 0.52 0.025 5.25 36.78						-		2 = 3	1 +
+ ID2= 2 ( 0300): 0.52 0.025 5.25 36.78			(mm)	(hrs)	cms)	ha) (	(		
			6.79	5.25 3	999	.08 0.	0): 2	D1= 1 ( 020	-

\_\_\_\_\_ (v 6.2.2015) V V SSSSS U Ι U Α L V V Ι SS U U ΑΑ L V Ι SS U U AAAAA L V V V Ι SS U UΑ A L VV Т SSSSS UUUUU A A LLLLL 000 ΤΤΤΤΤ ΤΤΤΤΤ Η ΗY Υ Μ М 000 ТΜ 0 0 Т Т н Н ΥY MM MM O 0 Т Т Н Υ 0 0 Н Μ ΜO 0 000 Т Н 000 Т Н Υ М М Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\0 05f31a7-e1dd-4bc8-8d3d-9dd9cb324004\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\0 05f31a7-e1dd-4bc8-8d3d-9dd9cb324004\s DATE: 02-25-2025 TIME: 10:47:41 USER: COMMENTS: \*\* SIMULATION : AES 12H 005-Humber \*\* READ STORM Filename: C:\Users\caeh076182\AppD

     Ptotal= 54.38 mm	Comment	875a		d-486e-8a	08-c640e	e73024e8\3	7895aae8			
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN			
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr			
0.00	0.00	3.25	9.25	6.50	3.81	9.75	0.54			
0.25			9.25	6.75	3.81	10.00	0.54			
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54			
0.75	0.54		9.25			10.50	0.54			
1.00	0.54	4.25	25.02		2.18	10.75	0.54			
1.25	0.54	4.50	25.02		2.18	11.00	0.54			
1.50			25.02	1 8.00	2.18		0.54			
1.75	0.54	5.00	25.02	8.25	1.09	11.50	0.54			
2.00	0.54	5.25	7.07	8.50	1.09	11.75	0.54			
2.25	3.26	5.50	7.07	8.75	1.09	12.00	0.54			
2.50		5.75	7.07	9.00	1.09	İ				
2.75		6.00	7.07	9.25	0.54	İ				
3.00	3.26	6.25	3.81	9.50	0.54					
CALIB     STANDHYD ( 0100)  Area (ha)= 1.10  ID= 1 DT= 5.0 min   Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00										
	]	[MPERVIO	US PE	RVIOUS (i)	)					
Surface Area	(ha)=	1.01		0.09						
Dep. Storage				5.00						
Average Slope	(%)=	1.00		2.00						
Length	(%)= (m)=	85.00		40.00						
Mannings n	=	0.013		0.350						
NOTE: RAINF	ALL WAS TF	RANSFORM	ED TO	5.0 MIN. <sup>-</sup>	TIME STE	EP.				
		TR	ANSFORME	D HYETOGR	APH	-				

TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54

0.01		4 000	0.05		2 01		0 54
0.917		4.000	9.25	7.083	3.81		0.54
1.000		4.083	9.25	7.167	3.81	10.25	0.54
1.083		:	9.25	7.250	3.81	10.33	0.54
1.167		4.250	9.25	7.333	2.18	10.42	0.54
1.250		4.333	25.02	7.417	2.18	10.50	0.54
1.333		4.417	25.02	7.500	2.18	10.58	0.54
1.417		4.500	25.02		2.18	10.67	0.54
1.500			25.02	7.667	2.18	10.75	0.54
1.583			25.02		2.18	10.83	0.54
1.667			25.02			10.92	0.54
1.750			25.02		2.18	11.00	0.54
1.833		4.917	25.02	8.000	2.18	11.08	0.54
1.917		5.000	25.02	•	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	3 0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	7 0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3 3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	7 3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	7 3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3 3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	7 3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09	İ	
Max.Eff.Inten.(r	nm/hr)=	25.02		14.28			
over	(min)	5.00		25.00			
Storage Coeff.	(min)=	4.03	(ii)	22.85 (ii)			
Unit Hyd. Tpeak	(min)=	5.00		25.00			
Unit Hyd. peak	(cms)=	0.24		0.05			
					*T0	TALS*	
PEAK FLOW	(cms)=	0.07		0.00	0	.073 (iii	)
TIME TO PEAK		5.17		5.42		5.25	•
	(mm)=	53.38		23.19	50	0.96	
TOTAL RAINFALL	(mm) =	54.38		54.38		4.38	
RUNOFF COEFFICIE	· · /	0.98		0.43		0.94	
***** WARNING: STORAG	GE COEFF.	IS SMALLE	R THAN	TIME STEP!			
(i) CN PROCEDU							
CN* = 8 (ii) TIME STEP		= Dep. S	•	• •			

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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CALIB     STANDHYD ( 0105)   ID= 1 DT= 5.0 min	Area Total	(ha)= 3 Imp(%)= 70	.24 .00 Dir. Con	n.(%)= 70.00
		IMPERVIOUS	PERVIOUS (	i)
Surface Area	(ha)=	2.27	0.97	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	147.00	40.00	
Mannings n	=	0.013	0.350	

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	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54

2.8333.265.9177.079.0001.0912.080.542.9173.266.0007.079.0831.0912.170.54 3.000 3.26 6.083 7.07 9.167 1.09 12.25 0.54 3.083 3.26 | 6.167 7.07 | 9.250 1.09 | Max.Eff.Inten.(mm/hr)= 25.02 14.28 over (min) 5.00 25.00 Storage Coeff. (min)= 5.60 (ii) 24.42 (ii) Unit Hyd. Tpeak (min)= 5.00 25.00 Unit Hyd. peak (cms)= 0.20 0.05 \*TOTALS\* 0.160.035.255.42 PEAK FLOW (cms)= 0.186 (iii) 

 TIME TO PEAK (hrs)=
 5.25
 5.42

 RUNOFF VOLUME (mm)=
 53.38
 23.19

 TOTAL RAINFALL (mm)=
 54.38
 54.38

 RUNOFF COEFFICIENT =
 0.98
 0.43

 5.25 44.32 54.38 0.81 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006) 

 + 2 = 3
 |
 AREA
 QPEAK
 TPEAK
 R.V.

 ----- (ha)
 (cms)
 (hrs)
 (mm)

 ID1= 1
 (0100):
 1.10
 0.073
 5.25
 50.96

 + ID2= 2
 (0105):
 3.24
 0.186
 5.25
 44.32

 1 + 2 = 3 ا *ب* -----ID = 3 (0006): 4.34 0.259 5.25 46.00 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ CALIB STANDHYD ( 0200) | Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 1.75 0.33 Dep. Storage(mm)=1.005.00Average Slope(%)=1.002.00Length(m)=118.0040.00Mannings n=0.0130.350 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	3.167	3.26	6.250	7.07	. '	0.54	
0.167	0.00	3.250	3.26	6.333	3.81		0.54	
0.250	0.00	3.333	9.25	6.417	3.81		0.54	
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54	
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54	
0.500	0.54	3.583	9.25	6.667	3.81		0.54	
0.583	0.54	3.667	9.25	6.750	3.81		0.54	
0.667	0.54	3.750	9.25	6.833	3.81		0.54	
0.750	0.54	3.833	9.25	6.917	3.81		0.54	
0.833	0.54	3.917	9.25	7.000	3.81		0.54	
0.917	0.54	4.000	9.25	7.083	3.81		0.54	
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54	
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54	
1.167	0.54	4.250	9.25	7.333	2.18		0.54	
1.250	0.54	4.333	25.02	7.417	2.18		0.54	
1.333	0.54	4.417	25.02	7.500	2.18		0.54	
1.417	0.54	4.500	25.02	7.583	2.18		0.54	
1.500	0.54	4.583	25.02	7.667	2.18		0.54	
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54	
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54	
1.750	0.54	4.833	25.02	7.917	2.18		0.54	
1.833	0.54	4.917	25.02	8.000	2.18		0.54	
1.917	0.54	5.000	25.02	8.083	2.18		0.54	
2.000	0.54	5.083	25.02	8.167	2.18		0.54	
2.083	0.54	5.167	25.02	8.250	2.18		0.54	
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54	
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54	
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54	
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54	
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54	
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54	
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54	
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54	
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54	
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54	
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54	
3.083	3.26	6.167	7.07	9.250	1.09			
Max.Eff.Inten.(mm/	/hr)=	25.02		14.28				
over (n	nin)	5.00		25.00				
•	nin)=	4.91	(ii)	23.72 (ii)				
Unit Hyd. Tpeak (m	nin)=	5.00		25.00				
Unit Hyd. peak (d	cms)=	0.22		0.05				
						TALS*		
PEAK FLOW (c	cms)=	0.12		0.01	0	.131 (iii)		

5.25 53.38 TIME TO PEAK (hrs)= 5.25 5.42 RUNOFF VOLUME (mm)= 23.19 48.54 54.38 TOTAL RAINFALL (mm)= 54.38 54.38 RUNOFF COEFFICIENT = 0.98 0.43 0.89 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0300) | Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.44 0.08 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 59.00 40.00 Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN | ' TIME RAIN | TIME RAIN TIME RAIN | TIME mm/hr | hrs hrs mm/hr | hrs mm/hr | hrs mm/hr 0.083 0.00 3.167 3.26 6.250 7.07 9.33 0.54 0.00 3.250 3.26 6.333 3.81 | 9.42 0.167 0.54

0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54

1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	14.28	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.24 (ii)	22.05 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.27	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.03	0.00	0.033 (iii)
TIME TO PEAK (hrs)=	5.08	5.42	5.25
RUNOFF VOLUME (mm)=	53.38	23.19	48.53
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.43	0.89

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
- CN\* = 82.0 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 ( 0007) | 1 + 2 = 3 | R.V. AREA QPEAK TPEAK -----(ha) (hrs) (mm) (cms) + ID2= 2 ( 0300): 0.52

0.131

0.52 0.033 

ID = 3 ( 0007): 2.60 0.164 5.25

5.25

5.25

48.54

48.53

48.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ V V SSSSS U U Α (v 6.2.2015) Ι L V V Ι SS U U A A L SS V V Ι U U AAAAA L V V Ι SS U UΑ A L Τ SSSSS UUUUU A VV A LLLLL 000 ΤΤΤΤΤ ΤΤΤΤΤ Η H Y Y M Μ 000 ТΜ Т ΥY 0 0 Т н Н MM MM O 0 Т ΜO 0 0 Т Н Н Υ М 0 000 Т Т н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\f 618768a-4fb4-4eb3-aaf4-389ff94fa60e\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\f 618768a-4fb4-4eb3-aaf4-389ff94fa60e\s DATE: 02-25-2025 TIME: 10:47:41 USER: COMMENTS: \_\_\_\_\_ \*\* \*\* SIMULATION : AES 12H 010-Humber 

READ STORM	Filenam	ne: C:\U	sers\cae	h076182\Aj	opD		
i i			Local\Te		•		
i i		875a	dc2c-1c8	d-486e-8a	08-c640e	e73024e8\4	1434fdbb
Ptotal= 62.71 mm	Comment	ts: AES :	12H_010-I	Humber			
TIM		TIME	RAIN		RAIN	TIME	RAIN
hr		hrs	mm/hr	1	mm/hr	hrs	mm/hr
0.0		3.25	10.66	6.50	4.39		0.63
0.2		3.50	10.66		4.39		0.63
0.5		3.75	10.66		4.39		0.63
0.7		4.00	10.66	1	2.51	10.50	0.63
1.0		4.25	28.84	1			0.63
1.2		4.50	28.84	1			0.63
1.5		4.75	28.84	:	2.51		0.63
1.7		5.00	28.84	1	1.25		0.63
2.0		5.25	8.15		1.25		0.63
2.2		5.50	8.15		1.25	12.00	0.63
2.5		5.75	8.15	:	1.25		
2.7		6.00	8.15	1	0.63		
3.0	0 3.76	6.25	4.39	9.50	0.63		
CALIB							
STANDHYD ( 0100)		• •	1.10		(0)		
ID= 1 DT= 5.0 min	lotal in	np(%)=	92.00	Dir. Conn	.(%)= 9	92.00	
	-	[MPERVIO		RVIOUS (i)	<b>`</b>		
Surface Area	(ha)=	1.01		0.09	)		
Dep. Storage	(mm)=	1.00		5.00			
Average Slope	(%)=	1.00		2.00			
Length	• •	85.00		40.00			
Mannings n	( ) =	0.013		40.00 0.350			
Hamilings II	-	0.015		0.550			
NOTE: RAIN	FALL WAS TF	RANSFORM	ED TO	5.0 MIN. <sup>-</sup>	TIME STE	EP.	
		TR/		D HYETOGRA	APH		
TIM	E RAIN	TIME	RAIN		RAIN		RAIN
hr		hrs					mm/hr
0 08		3 167		6 250			0 63

TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63

0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

<pre>Max.Eff.Inten.(mm/hr)=</pre>	28.84	17.85	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.81 (ii)	21.01 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.25	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.08	0.00	0.084 (iii)
TIME TO PEAK (hrs)=	5.08	5.33	5.25
RUNOFF VOLUME (mm)=	61.71	29.35	59.11
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.47	0.94

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
- CN\* = 82.0 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 I STANDHYD ( 0105) Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%) = 70.00 Dir. Conn.(%) = 70.00 IMPERVIOUS PERVIOUS (i) Surface Area 2.27 0.97 (ha)= Dep. Storage (mm)= 1.00 5.00 Average Slope 2.00 (%)= 1.00 Length (m)= 147.00 40.00 Mannings n 0.350 = 0.013 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

IRANSFORMED ATETOGRAPH								
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN	
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr	
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63	
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63	
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63	
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63	
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63	
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63	
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63	
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63	
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63	
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63	
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63	
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63	
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63	
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63	
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63	
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63	
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63	
1.500	0.63	4.583	28.84		2.51	10.75	0.63	
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63	
1.667	0.63	4.750	28.84	7.833		10.92	0.63	
1.750	0.63	4.833	28.84		2.51	11.00	0.63	
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63	
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63	
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63	
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63	
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63	
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63	
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63	
2.417	3.76	5.500	8.15		1.25	11.67	0.63	
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63	
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63	

2.750 3.7 2.833 3.7 2.917 3.7 3.000 3.7	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5   8.917 1.7 5   9.000 1.7 5   9.083 1.7 5   9.167 1.7	25       11.92       0.63         25       12.00       0.63         25       12.08       0.63         25       12.17       0.63         25       12.25       0.63         25       12.25       0.63				
<pre>Max.Eff.Inten.(mm/hr)=</pre>	5.00 5.29 (ii) 5.00 0.21 0.18 5.25 61.71 62.71	25.00 22.50 (ii) 25.00 0.05 0.04 5.33 29.35 62.71	52.00				
<ul> <li>(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN* = 82.0 Ia = Dep. Storage (Above)</li> <li>(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.</li> <li>(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.</li> </ul>							
ADD HYD ( 0006)    1 + 2 = 3   ID1= 1 ( 0100): + ID2= 2 ( 0105):	AREA QPEAK (ha) (cms) 1.10 0.084 3.24 0.219	(hrs) (mm 5.25 59.11	)				
ID = 3 ( 0006): NOTE: PEAK FLOWS DO NO			=				
CALIB     STANDHYD ( 0200)  Area  ID= 1 DT= 5.0 min   Total Surface Area (ha)=	Imp(%)= 84.00	Dir. Conn.(%): PERVIOUS (i) 0.33	= 84.00				
Dep. Storage (mm)= Average Slope (%)= Length (m)=	1.00 1.00	5.00 2.00 40.00					

TRANSFORMED HYETOGRAPH									
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN		
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr		
0.083				6.250		9.33	0.63		
0.167	0.00	3.250		6.333		9.42	0.63		
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63		
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63		
0.417	0.63			6.583	4.39	9.67	0.63		
0.500		3.583		6.667		9.75	0.63		
0.583		3.667		6.750		9.83			
0.667	0.63	3.750		6.833		9.92	0.63		
0.750		3.833		6.917		10.00	0.63		
0.833	0.63			7.000	4.39		0.63		
0.917		4.000	10.66		4.39		0.63		
1.000	0.63			7.167		10.25	0.63		
1.083		4.167		7.250		10.33			
1.167		4.250		7.333					
		4.333							
1.333		4.417					0.63		
1.417		4.500		7.583		10.67	0.63		
1.500		4.583		7.667		10.75	0.63		
1.583		4.667		7.750		10.83	0.63		
1.667		4.750		7.833					
		4.833		7.917					
21055	0.63								
1.917	0.63				2.51				
2.000	0.63		28.84		2.51		0.63		
2.083	0.63	•			2.51		0.63		
2.167	0.63		28.84		1.25		0.63		
2.250	0.63		8.15		1.25				
				8.500	1.25				
2.417		5.500		8.583	1.25				
2.500					1.25				
				8.750			0.63		
2.667	3.76	!	8.15	1	1.25		0.63		
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63		
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63		
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63		
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63		
3.083	3.76	6.167	8.15	9.250	1.25				
Max.Eff.Inten.(mm,	/hr)=	28.84		17.85					
over (r	min)	5.00		25.00					
Storage Coeff. (r	min)=	4.64	(ii)	21.84 (ii)					
Unit Hyd. Tpeak (r	min)=	5.00		25.00					
Unit Hyd. peak (	cms)=	0.22		0.05					

TRANSCORMED UVETOCRADU

PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICIE	(mm)= (mm)=	61.71 62.71		29.35 62.71	0. 56 62	2.71	)	
***** WARNING: STORAG	E COEFF.	IS SMALLE	R THAN	TIME STEP	!			
(i) CN PROCEDU CN* = 8 (ii) TIME STEP THAN THE S (iii) PEAK FLOW	2.0 Ia (DT) SHOU TORAGE CO	= Dep. S LD BE SMA EFFICIENT	Storage ALLER OR	(Above) EQUAL				
CALIB								
STANDHYD ( 0300)   ID= 1 DT= 5.0 min				Dir. Conn	.(%)= 8	34.00		
		IMPERVIOL	JS PE	RVIOUS (i)	)			
Surface Area				0.08	/			
Dep. Storage	(mm)=	1.00						
Average Slope	(%)=	1.00		2.00				
Length								
Mannings n								
NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.								
		TR/		D HYETOGRA	<b>Л</b> ДН			
TIME	RATN			' TIME			RAIN	
hrs				' hrs				
0.083				6.250		•	0.63	
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63	
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63	
0.333		3.417	10.66	6.500	4.39	9.58	0.63	
0.417		3.500	10.66	6.583	4.39	9.67	0.63	
0.500		3.583	10.66	6.667	4.39	9.75	0.63	
0.583		3.667	10.66	6.750	4.39	9.83	0.63	
0.667			10.66	6.833	4.39	9.92	0.63	
0.750			10.66	6.917	4.39	10.00	0.63	
0.833			10.66	7.000	4.39 4.39	10.08	0.63	
0.917 1.000		4.000	10.66 10.66	7.083   7.167	4.39	10.17 10.25	0.63 0.63	
1.000		4.085   1.167	10.00	7.107   7.250		10.25	0.03	

10.66 | 7.250

10.66 | 7.333

28.84 | 7.417

28.84 | 7.500

0.63 | 4.167

0.63 4.250

0.63 | 4.333

0.63 | 4.417

1.083

1.167

1.250

1.333

4.39 | 10.33

2.51 | 10.42

2.51 | 10.50

2.51 | 10.58

0.63

0.63

0.63

0.63

1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25		0.63
2.500	3.76	5.583	8.15		1.25		0.63
2.583	3.76	5.667	8.15		1.25		0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	-	8.15		1.25		0.63
2.833	3.76		8.15	-	1.25		0.63
2.917		6.000	8.15	-	1.25		0.63
3.000		6.083	8.15	-	1.25		0.63
3.083		6.167	8.15		1.25		0.05
Max.Eff.Inten.(mm/H over (m: Storage Coeff. (m: Unit Hyd. Tpeak (m: Unit Hyd. peak (cr	in) in)= in)=	28.84 5.00 3.06 5.00 0.27	(ii)	17.85 25.00 20.27 (ii) 25.00 0.05	*=0		
						TALS*	
•	ns)=	0.03		0.00		.038 (iii	.)
•	rs)=	5.08		5.33		5.25	
	nm)=	61.71		29.35		6.51	
•	nm)=	62.71					
RUNOFF COEFFICIENT	=	0.98		0.47	(	0.90	
***** WARNING: STORAGE (	COEFF. I	IS SMALLE	r than	TIME STEP!			
(i) CN PROCEDURE							
CN* = 82.0							
(ii) TIME STEP (D <sup>-</sup>				EQUAL			
THAN THE STOP							
(iii) PEAK FLOW DO	ES NOT :	INCLUDE B	ASEFLOW	IF ANY.			
ADD HYD ( 0007)							

ADD HYD ( 0007)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	2.08	0.153	5.25	56.53
+ ID2= 2 ( 0300):	0.52	0.038	5.25	56.51

\_\_\_\_\_\_ ID = 3 (0007):2.60 0.191 5.25 56.52 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ V V Ι SSSSS U U A L (v 6.2.2015) V V Ι SS U U A A L SS V V U U AAAAA L Ι V V I SS U UΑ A L I SSSSS UUUUU A A LLLLL VV ΤΤΤΤΤ ΤΤΤΤΤ Η 000 H Y Y M 000 ТΜ М 0 0 Т Т Н Н ΥY MM MM O O 0 Т Т н н Υ М ΜO 0 0 000 Т Т Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\b 51e71c5-1f6d-4b1c-99b3-cbe80d0da3f7\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\b 51e71c5-1f6d-4b1c-99b3-cbe80d0da3f7\s DATE: 02-25-2025 TIME: 10:47:41 USER: COMMENTS: \_\_\_\_\_ \*\* \*\* SIMULATION : AES 12H 050-Humber 

READ STORM	Filenam	o. C./IId	sers\cae	0 0 0 0 7 6 1 8 2 Δr	nnD				
	Filename: C:\Users\caeh076182\AppD ata\Local\Temp\								
	875adc2c-1c8d-486e-8a08-c640e73024e8\754c11b6								
   Ptotal= 80.82 mm									
	Commerie	5. ALJ 1	1211_050-	Tullber					
ттме	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN		
TIME hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr		
0.00			13.74			•			
	0.00	3.25			5.66	9.75	0.81		
0.25	0.81	3.50	13.74		5.66	10.00	0.81		
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81		
0.75	0.81	4.00	13.74	7.25	3.23	10.50	0.81		
1.00	0.81	4.25	37.17	:	3.23	10.75	0.81		
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81		
1.50	0.81	4.75	37.17		3.23	11.25	0.81		
1.75	0.81	5.00	37.17		1.62	11.50	0.81		
2.00	0.81	5.25	10.50	8.50	1.62	11.75	0.81		
2.25	4.85	5.50	10.50	8.75	1.62	12.00	0.81		
2.50	4.85	5.75	10.50		1.62				
2.75	4.85	6.00	10.50	9.25	0.81				
3.00	4.85	6.25	5.66	9.50	0.81				
CALIB	_	<i>.</i>							
		(ha)=	1.10		(0)				
ID= 1 DT= 5.0 min	Total Im	ip(%)= 9	92.00	Dir. Conn	.(%)= 9	2.00			
	_								
		MPERVIO	JS PE	RVIOUS (i)	)				
	(ha)=	1.01		0.09					
	(mm)=	1.00		5.00					
Average Slope	(%)=	1.00		2.00					
Length	(m)=	85.00		40.00					
Mannings n	=	0.013		-					
				0.330					
NOTE: RAINFAL	L WAS TR	ANSFORME	ED TO	5.0 MIN. 1	TIME STE	Ρ.			
NOTE: RAINFAL	L WAS TR	ANSFORME	ED TO		TIME STE	Ρ.			
NOTE: RAINFAL	_L WAS TR			5.0 MIN. 1					
		TR4	ANSFORME	5.0 MIN. T	\РН				
TIME	RAIN	TR4 TIME	ANSFORME RAIN	5.0 MIN. T D HYETOGRA  ' TIME	APH RAIN	TIME	RAIN		
TIME hrs	RAIN   mm/hr	TRA TIME hrs	ANSFORME RAIN mm/hr	5.0 MIN. T D HYETOGRA  ' TIME  ' hrs	APH RAIN mm/hr		mm/hr		
TIME hrs 0.083	RAIN   mm/hr   0.00	TRA TIME hrs 3.167	ANSFORME RAIN mm/hr 4.85	5.0 MIN. T D HYETOGRA  ' TIME  ' hrs   6.250	APH RAIN mm/hr 10.50	TIME   hrs 9.33	mm/hr 0.81		
TIME hrs 0.083 0.167	RAIN   mm/hr	TRA TIME hrs 3.167	ANSFORME RAIN mm/hr 4.85 4.85	5.0 MIN. 1 D HYETOGRA  ' TIME  ' hrs   6.250   6.333	APH RAIN mm/hr	TIME   hrs	mm/hr 0.81 0.81		
TIME hrs 0.083	RAIN   mm/hr   0.00	TRA TIME hrs 3.167	ANSFORME RAIN mm/hr 4.85 4.85	5.0 MIN. T D HYETOGRA  ' TIME  ' hrs   6.250	APH RAIN mm/hr 10.50	TIME   hrs 9.33	mm/hr 0.81 0.81 0.81		
TIME hrs 0.083 0.167	RAIN   mm/hr   0.00   0.00	TRA TIME hrs 3.167 3.250	ANSFORME RAIN mm/hr 4.85 4.85	5.0 MIN. 1 D HYETOGRA  ' TIME  ' hrs   6.250   6.333   6.417	APH RAIN mm/hr 10.50   5.66	TIME   hrs 9.33 9.42	mm/hr 0.81 0.81		

0.417

0.500

0.81 | 3.500

0.81 | 3.583

13.74 | 6.583

13.74 | 6.667

5.66 9.67

5.66 9.75

0.81

0.81

0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		
Inten.(mm/	hr)=	37.17		26.69			

Max.Eff.Inten.(m	m/hr)=	37.17	26.69	
over	(min)	5.00	10.00	
Storage Coeff.	(min)=	3.44 (ii)	8.27 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	10.00	
Unit Hyd. peak	(cms)=	0.26	0.13	
				*TOTALS*
PEAK FLOW	(cms)=	0.10	0.01	0.111 (iii)
TIME TO PEAK	(hrs)=	5.08	5.25	5.25
RUNOFF VOLUME	(mm)=	79.82	43.69	76.93
TOTAL RAINFALL	(mm)=	80.82	80.82	80.82
RUNOFF COEFFICIE	NT =	0.99	0.54	0.95

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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.

2.083

2.167

2.250

2.333

2.417

0.81 | 5.167

0.81 | 5.250

0.81 5.333

4.85 | 5.417

4.85 | 5.500

37.17 8.250

37.17 8.333

10.50 8.500

10.50 | 8.583

8.417

10.50

3.23

1.62

1.62 | 11.42

1.62 | 11.58

1.62 | 11.67

11.33

11.50

0.81

0.81

0.81

0.81

0.81

\_\_\_\_\_ CALIB STANDHYD ( 0105) Area (ha) = 3.24|ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha) =2.27 0.97 Dep. Storage (mm) =1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m) =147.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----TIME RAIN TIME RAIN |' TIME RAIN | TIME RAIN mm/hr |' hrs mm/hr hrs hrs mm/hr | hrs mm/hr 4.85 | 6.250 10.50 | 9.33 0.083 0.00 3.167 0.81 0.167 0.00 3.250 4.85 6.333 5.66 9.42 0.81 0.250 0.00 | 3.333 13.74 | 6.417 5.66 9.50 0.81 0.333 0.81 | 3.417 13.74 | 6.500 5.66 9.58 0.81 0.417 0.81 | 3.500 13.74 | 6.583 5.66 9.67 0.81 13.74 | 6.667 0.500 0.81 | 3.583 5.66 9.75 0.81 0.583 0.81 | 3.667 13.74 | 6.750 5.66 9.83 0.81 0.81 | 3.750 13.74 | 6.833 5.66 9.92 0.81 0.667 0.750 0.81 3.833 13.74 | 6.917 5.66 | 10.00 0.81 0.833 0.81 3.917 13.74 | 7.000 5.66 10.08 0.81 13.74 | 7.083 0.917 0.81 | 4.000 5.66 10.17 0.81 1.000 0.81 | 4.083 13.74 | 7.167 5.66 10.25 0.81 13.74 | 1.083 0.81 | 4.167 7.250 5.66 10.33 0.81 0.81 | 4.250 13.74 | 7.333 10.42 0.81 1.167 3.23 1.250 0.81 | 4.333 37.17 | 7.417 3.23 0.81 10.50 1.333 0.81 4.417 37.17 | 7.500 3.23 10.58 0.81 1.417 0.81 | 4.500 37.17 | 7.583 3.23 10.67 0.81 1.500 0.81 4.583 37.17 7.667 3.23 10.75 0.81 1.583 0.81 4.667 37.17 | 7.750 3.23 10.83 0.81 1.667 0.81 4.750 37.17 7.833 3.23 10.92 0.81 1.750 0.81 | 4.833 37.17 | 7.917 3.23 | 11.00 0.81 0.81 | 4.917 37.17 | 8.000 1.833 3.23 11.08 0.81 1.917 0.81 | 5.000 37.17 | 8.083 3.23 | 11.17 0.81 37.17 | 8.167 2.000 0.81 | 5.083 3.23 11.25 0.81

2.583 4.8 2.667 4.8 2.750 4.8 2.833 4.8 2.917 4.8 3.000 4.8	5   5.667 10.50 5   5.750 10.50 5   5.833 10.50 5   5.917 10.50	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2       11.83       0.81         2       11.92       0.81         2       12.00       0.81         2       12.08       0.81         2       12.08       0.81         2       12.17       0.81         2       12.17       0.81         2       12.25       0.81					
Max.Eff.Inten.(mm/hr)= over (min) Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)=	5.00 4.78 (ii) 5.00	20.00 19.50 (ii) 20.00 0.06	TOTALS*					
PEAK FLOW (cms)= TIME TO PEAK (hrs)= RUNOFF VOLUME (mm)= TOTAL RAINFALL (mm)= RUNOFF COEFFICIENT =	5.25 79.82 80.82	0.06 5.33 43.69 80.82	0.294 (iii) 5.25 68.98 80.82					
<pre>***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:     CN* = 82.0 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.</pre>								
ADD HYD ( 0006)    1 + 2 = 3   ID1= 1 ( 0100): + ID2= 2 ( 0105):	1.10 0.111 3.24 0.294	(hrs) (mm) 5.25 76.93 5.25 68.98						
ID = 3 ( 0006):	4.34 0.405	5.25 70.99						
NOTE: PEAK FLOWS DO NO   CALIB     STANDHYD ( 0200)  Area  ID= 1 DT= 5.0 min   Total	(ha)= 2.08		84.00					

Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

	_						_
	RAIN		RAIN			TIME	
hrs	•			' hrs			
0.083	0.00			6.250			
0.167	0.00			6.333			0.81
0.250	0.00			6.417	5.66		0.81
0.333	0.81	-		6.500	5.66		0.81
0.417		3.500	13.74		5.66		0.81
0.500	0.81						0.81
0.583		3.667		6.750		9.83	
0.667		3.750		6.833		9.92	
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917		7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17		3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750		8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		
Max.Eff.Inten.(mm,	/hr)=	37.17		26.36			
over (r	min)	5.00		20.00			

4.19 (ii) 18.91 (ii) 5.00 20.00 Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)= 0.06 0.24 \*TOTALS\* PEAK FLOW (cms)= 0.02 0.201 (iii) 0.18 TIME TO PEAK 5.17 5.25 (hrs)= 5.33 79.82 RUNOFF VOLUME 74.03 (mm)= 43.69 TOTAL RAINFALL (mm)= 80.82 80.82 80.82 RUNOFF COEFFICIENT = 0.99 0.54 0.92 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0300) Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.44 0.08 5.00 Dep. Storage (mm)= 1.00 Average Slope (%)= 2.00 1.00 59.00 40.00 Length (m)= Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81

	1.16			13.74		3.23		0.81
	1.25			37.17	7.417	3.23		0.81
	1.33			37.17		3.23		0.81
	1.41		4.500	37.17	7.583	3.23	10.67	0.81
	1.50	0.81	4.583	37.17	7.667	3.23	10.75	0.81
	1.58	3 0.81	4.667	37.17	7.750	3.23	10.83	0.81
	1.66	7 0.81	4.750	37.17	7.833	3.23	10.92	0.81
	1.75	0 0.81	4.833	37.17	7.917	3.23	11.00	0.81
	1.83	3 0.81	4.917	37.17	8.000	3.23	11.08	0.81
	1.91	7 0.81	5.000	37.17	8.083	3.23	11.17	0.81
	2.00	0 0.81	5.083	37.17	8.167	3.23	11.25	0.81
	2.08	3 0.81	5.167	37.17	8.250	3.23	11.33	0.81
	2.16	7 0.81	5.250	37.17	8.333	1.62	11.42	0.81
	2.25	0.81	5.333	10.50	8.417	1.62	11.50	0.81
	2.33	3 4.85	5.417	10.50	8.500	1.62	11.58	0.81
	2.41	7 4.85	5.500	10.50	8.583	1.62	11.67	0.81
	2.50		5.583	10.50	8.667	1.62		0.81
	2.58			10.50	8.750	1.62		0.81
	2.66			10.50		1.62	11.92	0.81
	2.75		5.833	10.50		1.62	12.00	0.81
	2.83		5.917	10.50		1.62		0.81
	2.91			10.50		1.62		0.81
	3.00			10.50		1.62		0.81
	3.08			10.50	•	1.62		
	Storage Coeff. Unit Hyd. Tpeak	(min) (min)= (min)=	5.00	(ii)	26.36 20.00 17.49 (ii) 20.00 0.06			
	Unit Hyd. peak	(CmS)=	0.28		0.00	***		
		(	0.05		0.01		TALS*	`
	PEAK FLOW	(cms)=	0.05		0.01		.050 (iii - 25	)
	TIME TO PEAK	(hrs)=	5.08		5.33		5.25	
	RUNOFF VOLUME TOTAL RAINFALL	(mm)=	79.82		43.69		4.02	
	RUNOFF COEFFICI				0.54	86	9.82 9.92	
	KUNUFF CUEFFICI		0.99		0.54	e	9.92	
***	WARNING: STORA	GE COEFF.	IS SMALLI	ER THAN	TIME STEP!			
	(i) CN PROCEDU CN* = 3	URE SELECT 82.0 Ia						
	(ii) TIME STEP				EQUAL			
		STORAGE CO						
	THAN THE S			BASEFLOW	I IF ANY.			
	THAN THE S (iii) PEAK FLOW	DOES NOT	INCLUDE I					
		DOES NOT	INCLUDE					
		DOES NOT						
		DOES NOT						
ADI		DOES NOT						

(hrs) (mm) (ha) (cms) ID1= 1 ( 0200): 2.08 0.201 5.25 74.03 0.050 5.25 74.02 + ID2= 2 ( 0300): 0.52 \_\_\_\_\_ ID = 3 (0007):0.251 74.03 2.60 5.25 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ (v 6.2.2015) V V Ι SSSSS U U A L V V Ι SS U U ΑΑ L Ι U AAAAA L V V SS U V V Ι SS U UΑ A L VV Ι SSSSS UUUUU A A LLLLL TTTTT TTTTT H 000 H Y Y M Μ 000 ТΜ 0 Т Н ΥY MM MM O 0 Т Н 0 Т Т 0 0 Н Н Υ М М 0 0 Т Т 000 Н н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\5 2db7d4d-e67c-489b-a74f-5d53854a3228\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\5 2db7d4d-e67c-489b-a74f-5d53854a3228\s DATE: 02-25-2025 TIME: 10:47:42 USER: COMMENTS: 

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READ STORM	Filenan		sers\cael .ocal\Te	h076182\Aj	ppD		
				d-486e-8a	8-6100	7302/08/0	2f1365a
   Ptotal= 88.54 mm	Comment	ts: AES 1			00-00400	7502460 (6	2143038
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr		mm/hr
0.00	0.00	-	15.05	!	6.20		0.89
0.25		-	15.05				0.89
0.50		3.75	15.05				0.89
0.75		4.00	15.05	!	3.54		0.89
1.00	0.89	4.25	40.71		3.54		0.89
1.25	0.89	4.50	40.71	1	3.54		0.89
1.50	0.89	4.75	40.71		3.54	11.25	0.89
1.75	0.89	-	40.71		1.77	11.50	0.89
2.00	0.89	5.25	11.51	8.50	1.77	11.75	0.89
2.25	5.31	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75			1.77		
2.75	5.31	6.00	11.51	9.25	0.89		
3.00	5.31	6.25	6.20	9.50	0.89		
CALIB	A	( h a )	1 10				
STANDHYD ( 0100)			1.10		(%)	2 00	
ID= 1 DT= 5.0 min	lotal lu	np(%)= 9	92.00	Dir. Conn	•(%)= 9	2.00	
	-	IMPERVIO		RVIOUS (i	)		
Surface Area	(ha)=	1.01		0.09	)		
Dep. Storage	(mm)=	1.00		5.00			
	(%)=	1.00		2.00			
Length		85.00		40.00			
Mannings n	()	0.013		0.350			
0							
NOTE: RAINFA	ALL WAS TH	RANSFORME	D TO	5.0 MIN. <sup>-</sup>	TIME STE	Ρ.	
		TRA		D HYETOGR	APH		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89

0.250 0.00 | 3.333 15.05 | 6.417 6.20 | 9.50

0.89

0.000	0.00		45 05		c		0 00
0.333		3.417	15.05		6.20	9.58	0.89
0.417		3.500	15.05	6.583	6.20	9.67	0.89
0.500		3.583	15.05	6.667	6.20	9.75	0.89
0.583		3.667	15.05	6.750	6.20	9.83	0.89
0.667		3.750	15.05	6.833	6.20	9.92	0.89
0.756	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	8 0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	8 0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417		4.500	40.71	7.583	3.54	10.67	0.89
1.500		4.583	40.71	7.667	3.54	10.75	0.89
1.583		4.667	40.71	7.750	3.54	10.83	0.89
1.667		4.750	40.71	7.833	3.54	10.92	0.89
1.750		4.833	40.71	7.917	3.54	11.00	0.89
1.833		4.917	40.71	8.000	3.54	11.08	0.89
1.917		5.000	40.71	8.083	3.54	11.17	0.89
2.000		5.083	40.71	8.167	3.54	11.25	0.89
2.083		5.167	40.71	8.250	3.54	11.33	0.89
2.167		5.250	40.71	8.333	1.77	11.42	0.89
2.250		5.333	11.51	8.417	1.77	11.50	0.89
2.333		5.417	11.51	8.500	1.77	11.58	0.89
2.417		5.500	11.51	8.583	1.77	11.67	0.89
2.500		5.583	11.51	8.667	1.77	11.75	0.89
2.583		5.667	11.51	8.750	1.77	11.83	0.89
2.667		5.750	11.51	8.833	1.77	11.92	0.89
2.750		5.833	11.51	8.917	1.77	12.00	0.89
2.833		5.917	11.51	9.000	1.77	12.08	0.89
2.917		6.000	11.51	9.083	1.77	12.00	0.89
3.000		6.083	11.51	9.167	1.77	12.25	0.89
3.083		6.167	11.51	9.250	1.77	12,25	0.05
5.001	, J.JI	0.107	11.91	1 0.200	1.//	I	
Max.Eff.Inten.(n	m/hr)=	40.71		30.28			
•	(min)	5.00		10.00			
Storage Coeff.	(min)=	3.32	(ii)	7.98 (ii)			
Unit Hyd. Tpeak	• •	5.00	(11)	10.00			
Unit Hyd. peak	• •	0.26		0.13			
onic nyu. peak	(Clins)=	0.20		0.15	*T0 <sup>-</sup>	TALS*	
PEAK FLOW	(cms)=	0.11		0.01		.122 (iii)	
TIME TO PEAK	(hrs) =	5.08		5.25		5.25	
RUNOFF VOLUME	(mm)=	87.54		50.10		4.54	
TOTAL RAINFALL	(mm)=	88.54		88.54		3.54	
RUNOFF COEFFICIE	• •	0.99		0.57		0.95	
	–	5.55		0.07	, in the second s		

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 82.0 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

CALIB     STANDHYD ( 0105)   ID= 1 DT= 5.0 min	Area Total	(ha)= Imp(%)= 7	3.24 70.00	Dir. Conn.(%)=	70.00
		IMPERVIOU	JS	PERVIOUS (i)	
Surface Area	(ha)=	2.27		0.97	
Dep. Storage	(mm)=	1.00		5.00	
Average Slope	(%)=	1.00		2.00	
Length	(m)=	147.00		40.00	
Mannings n	=	0.013		0.350	

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

		IK/	ANSFURMEL		APN		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89

2.333 5.33 2.417 5.33 2.500 5.33 2.583 5.33 2.667 5.33 2.750 5.33 2.833 5.33 2.833 5.33 2.917 5.33 3.000 5.33	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	L 9.083 1.77	11.58       0.89         11.67       0.89         11.75       0.89         11.83       0.89         11.92       0.89         12.00       0.89         12.17       0.89         12.25       0.89					
Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)= PEAK FLOW (cms)= TIME TO PEAK (hrs)= RUNOFF VOLUME (mm)=	5.00 4.61 (ii) 5.00 0.22 0.26 5.25 87.54 88.54	20.00 18.60 (ii) 20.00 0.06 *T 0.07 5.33 50.10	OTALS* 0.325 (iii) 5.25 76.31 88.54 0.86					
<pre>***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!    (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:         CN* = 82.0 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.</pre>								
ID1= 1 ( 0100): + ID2= 2 ( 0105):	3.24 0.325	(hrs) (mm) 5.25 84.54 5.25 76.31						
ID = 3 ( 0006): NOTE: PEAK FLOWS DO NO								
CALIB     STANDHYD ( 0200)  Area  ID= 1 DT= 5.0 min   Total		Dir. Conn.(%)=	84.00					

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.75	0.33
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

		TRA	ANSFORME	) HYETOGR	APH	-	
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)= 29.94 40.71 over (min) 5.00 20.00 Storage Coeff. (min)= 4.04 (ii) 18.03 (ii) Unit Hyd. Tpeak (min)= 20.00 5.00 Unit Hyd. peak (cms)= 0.24 0.06 \*TOTALS\* 0.221 (iii) PEAK FLOW 0.20 0.02 (cms) =TIME TO PEAK (hrs)= 5.17 5.33 5.25 RUNOFF VOLUME (mm)= 87.54 50.10 81.54 TOTAL RAINFALL (mm) =88.54 88.54 88.54 RUNOFF COEFFICIENT = 0.99 0.57 0.92 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0300) | Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 ------IMPERVIOUS PERVIOUS (i) Surface Area 0.44 0.08 (ha) =Dep. Storage (mm)= 1.00 5.00 (%)= Average Slope 1.00 2.00 Length (m)= 59.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

> RAIN TIME RAIN TIME RAIN ' TIME TIME RAIN mm/hr |' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 5.31 | 6.250 0.00 | 3.167 11.51 0.083 9.33 0.89 0.167 0.00 | 3.250 5.31 | 6.333 6.20 | 9.42 0.89 0.00 | 3.333 15.05 | 6.417 0.250 6.20 | 9.50 0.89 0.333 0.89 3.417 15.05 6.500 6.20 9.58 0.89 0.89 3.500 15.05 6.583 6.20 9.67 0.89 0.417 0.500 0.89 | 3.583 15.05 | 6.667 6.20 | 9.75 0.89 0.583 0.89 3.667 15.05 6.750 6.20 9.83 0.89 0.89 | 3.750 0.667 15.05 | 6.833 6.20 9.92 0.89 0.89 | 3.833 15.05 | 6.917 0.750 6.20 | 10.00 0.89 0.89 | 3.917 15.05 | 7.000 6.20 | 10.08 0.833 0.89

0.917	7 0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	8 0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	7 0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.256	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	8 0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	7 0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500		4.583	40.71	7.667	3.54	10.75	0.89
1.583		4.667	40.71	7.750	3.54	10.83	0.89
1.667		4.750	40.71	7.833	3.54		0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833		4.917	40.71	8.000	3.54		0.89
1.917		5.000	40.71	8.083	3.54	•	0.89
2.000		5.083	40.71	8.167	3.54	11.25	0.89
2.083		5.167	40.71	8.250	3.54	11.33	0.89
2.167		5.250	40.71	8.333	1.77	11.42	0.89
2.256		5.333	11.51	8.417	1.77	11.50	0.89
2.333		5.417	11.51	8.500	1.77	11.58	0.89
2.417	7 5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500		5.583	11.51		1.77	11.75	0.89
2.583		5.667	11.51		1.77		0.89
2.667		5.750	11.51		1.77	•	0.89
2.756			11.51	8.917	1.77		0.89
2.833			11.51		1.77		0.89
2.917		6.000	11.51		1.77		0.89
3.000		6.083	11.51	9.167	1.77	12.25	0.89
3.083	3 5.31	6.167	11.51	9.250	1.77		
Max.Eff.Inten.(n	nm/hr)=	40.71		29.94			
•	(min)	5.00		20.00			
Storage Coeff.	(min)=	2.67	(ii)	16.66 (ii)			
Unit Hyd. Tpeak		5.00	()	20.00			
Unit Hyd. peak		0.29		0.06			
	(				*T0 <sup>-</sup>	TALS*	
PEAK FLOW	(cms)=	0.05		0.01		.055 (iii	)
	(bac)	F 00		E 2E			/

				IUIALD
PEAK FLOW	(cms)=	0.05	0.01	0.055 (iii)
TIME TO PEAK	(hrs)=	5.08	5.25	5.25
RUNOFF VOLUME	(mm)=	87.54	50.10	81.53
TOTAL RAINFALL	(mm)=	88.54	88.54	88.54
RUNOFF COEFFIC	EENT =	0.99	0.57	0.92

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i)	CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:						
	CN* = 82.0 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 ( 0007) 1 + 2 = 3 AREA **QPEAK** TPEAK R.V. (ha) (cms) (hrs) (mm) ------ID1= 1 ( 0200): 0.221 5.25 81.54 2.08 + ID2= 2 ( 0300): 0.52 0.055 5.25 81.53 ID = 3 (0007):0.277 5.25 81.54 2.60 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ FINISH \_\_\_\_\_ \_\_\_\_\_ (v 6.2.2015) V V I SSSSS U U A L U U A A V V I SS L SS V V I U U AAAAA L V V Ι SS U U A A L VV I SSSSS UUUUU A A LLLLL 000 ΤΤΤΤΤ ΤΤΤΤΤ Η ТΜ НҮҮМ М 000 Н ҮҮ 0 0 Т Т Н MM MM O O 0 Т Т Н Н Ү М ΜO 0 0 000 Т Т Υ 000 Н Н Μ М Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Input Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\c 5160dc1-0b16-40d9-927f-0b03d7d36c88\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\c 5160dc1-0b16-40d9-927f-0b03d7d36c88\s DATE: 02-25-2025

TIME: 10:47:40

USER:

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

READ STORM   	Filenar	ata\L	.ocal\Te	h076182\Aµ mp\ d-486e-8a0		73024e8\o	:9df40cc
Ptotal= 36.00 mm	Comment	ts: AES 6	H_002-H	umber			
· · · · · · · · · · · · · · · · · · ·			-				
TIM	E RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	s mm/hr	hrs	mm/hr	' hrs		hrs	mm/hr
0.0	0.00	1.75	12.24	3.50	5.04	5.25	0.72
0.2	6 0.72	2.00	12.24	3.75	2.88	5.50	0.72
0.50	0.72	2.25	33.12	4.00	2.88	5.75	0.72
0.7	6 0.72	2.50	33.12	4.25	1.44	6.00	0.72
1.00	0.72	2.75	9.36	4.50			
1.2	5 4.32	3.00	9.36	4.75	0.72		
1.50	9 4.32	3.25	5.04	5.00	0.72		
CALIB							
STANDHYD ( 0100)	Area	(ha)=	1.10				
ID= 1 DT= 5.0 min	Total In	np(%)= 9	2.00 I	Dir. Conn	.(%)= 92	2.00	
		IMPERVIOU		RVIOUS (i	)		
Surface Area	(ha)=	1.01		0.09			
Dep. Storage	(mm)=	1.00		5.00			
Average Slope	· · ·	1.00		2.00			
Length	(m)=	85.00		40.00			
Mannings n	=	0.013	(	0.350			
NOTE: RAIN	ALL WAS TH	RANSFORME	D TO	5.0 MIN. <sup>-</sup>	TIME STEP	<b>.</b>	

	-	TR	ANSFORMED H	YETOGRA	APH		
TIME	RAIN	TIME	RAIN  '	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr  '	hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	4.32   3	.250	9.36   4	4.83	0.72

0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750		2.333		3.917	2.88		0.72
0.833		2.417		4.000	2.88		0.72
0.917		2.500		4.083	2.88		0.72
1.000		2.583		4.167	2.88		0.72
1.083		2.667		4.250	2.88		0.72
1.167		2.750		4.333		5.92	0.72
1.250				4.417			0.72
1.333		2.917		4.500			0.72
1.417		3.000		4.583			0.72
1.500		3.083		4.667		6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		
Max.Eff.Inten.(n	•	33.12		12.45			
	(min)	5.00		25.00			
Storage Coeff.	(min)=			23.48 (ii)	)		
Unit Hyd. Tpeak	• •	5.00		25.00			
Unit Hyd. peak	(cms)=	0.25		0.05			
	<i>,</i> , ,					ALS*	<b>、</b>
PEAK FLOW	(cms)=	0.09		0.00		094 (iii	)
TIME TO PEAK	(hrs)=	2.75		3.00		.75	
RUNOFF VOLUME	(mm)=	35.00		11.08		.08	
TOTAL RAINFALL	(mm)=	36.00	-	36.00		.00	
RUNOFF COEFFICIE	NT =	0.97		0.31	e	.92	
***** WARNING: STORAG	GE COEFF.	IS SMALLE	r than <sup>-</sup>	TIME STEP	!		
				00000			
(i) CN PROCEDU							
	32.0 Ia		-				
(ii) TIME STEP	• •			EQUAL			
THAN THE S							
(iii) PEAK FLOW	DUES NUT .	INCLUDE B	ASEFLOW	IF ANY.			
CALIB							
STANDHYD ( 0105)	Anon	(ba)-	2 24				
ID= 1 DT= 5.0 min				Jin Conn	(%) - 7	0 00	
	IULAI II	iip(%)- /	0.00 1		•(%)- /	0.00	
		IMPERVIOU	כ הבי	RVIOUS (i)	<b>`</b>		
Surface Area		2.27		0.97	)		
Dep. Storage	· · ·	1.00		5.00			
Average Slope	(11111)= (%)=			2.00			
Length	• •	147.00		40.00			
Lengen	()-	14/.00	-	10.00			

Mannings n = 0.013 0.350

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

		TRA	ANSFORMEI	D HYETOGR	APH	-	
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		
' T.a. L.a. a. /	/ laa. \	22 42		10 45			

--- TRANSFORMED HYFTOGRAPH ----

Max.Eff.Inten.(r	nm/hr)=	33.12	12.45	
over	(min)	5.00	25.00	
Storage Coeff.	(min)=	5.01 (ii)	24.88 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	25.00	
Unit Hyd. peak	(cms)=	0.21	0.05	
				*TOTALS*
PEAK FLOW	(cms)=	0.21	0.02	0.222 (iii)
TIME TO PEAK	(hrs)=	2.75	3.00	2.75
RUNOFF VOLUME	(mm)=	35.00	11.08	27.82
TOTAL RAINFALL	(mm)=	36.00	36.00	36.00
RUNOFF COEFFICI	ENT =	0.97	0.31	0.77

(i)	CN PF	ROCEDI	JRE SE	ELECT	ED F	OR P	PERVIOU	S L	OSSES:	
	CN*	= 8	32.0	Ia	a = D	ep.	Storag	e	(Above)	
(ii)	TIME	STEP	(DT)	SHOU	JLD B	SE SM	<b>IALLER</b>	OR	EQUAL	
			STORAG							
(iii)	PEAK	FLOW	DOES	NOT	INCL	UDE	BASEFL	OW	IF ANY.	

-----

ADD HYD ( 0006) 

 | 1 + 2 = 3 |
 AREA QPEAK TPEAK R.V.

 ----- (ha) (cms) (hrs) (mm)

 (ha) (cms) (hrs) ID1= 1 ( 0100): 1.10 0.094 2.75 33.08 + ID2= 2 ( 0105): 3.24 0.222 2.75 27.82 \_\_\_\_\_ ID = 3 (0006): 4.34 0.316 2.75 29.15 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ -----CALIB STANDHYD ( 0200) Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) Surface Area(ha)=1.750.33Dep. Storage(mm)=1.005.00Average Slope(%)=1.002.00Length(m)=118.0040.00Mannings n=0.0130.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

			IRA	NSFORME	D HYEIUGRA	NPH		
	TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
	hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
	0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
	0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
	0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
	0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
	0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
	0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
	0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
	0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
	0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
	0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
	0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
	1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
	1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
	1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
	1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
	1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
	1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
	1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
	1.583	4.32	3.167	9.36	4.750	1.44		
Max.Eff.In <sup>-</sup>	ten.(mm/	hr)=	33.12		12.45			
	over (m	in)	5.00		25.00			

4.39 (ii) 24.26 (ii) Storage Coeff. (min)= Unit Hyd. Tpeak (min)= 5.00 25.00 Unit Hyd. peak (cms)= 0.05 0.23 \*TOTALS\* PEAK FLOW (cms)= 0.16 0.01 0.165 (iii) TIME TO PEAK (hrs)= 2.75 3.00 2.75 RUNOFF VOLUME (mm)= 31.17 35.00 11.08 TOTAL RAINFALL (mm)= 36.00 36.00 36.00 RUNOFF COEFFICIENT = 0.97 0.31 0.87 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 (0300) Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) Surface Area 0.08 (ha)= 0.44 5.00 Dep. Storage (mm)= 1.00 Average Slope (%)= 2.00 1.00 40.00 Length (m)= 59.00 Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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

	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	1.667	4.32	3.250	9.36	4.83	0.72		
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72		
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72		
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72		
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72		
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72		
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72		
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72		
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72		
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72		
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72		
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72		
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72		

1.167 0.72 | 2.750 33.12 | 4.333 1.44 | 5.92 0.72 1.250 0.72 | 2.833 9.36 | 4.417 1.44 | 6.00 0.72 9.36 | 4.500 1.44 | 6.08 0.72 1.333 4.32 2.917 1.417 4.32 3.000 9.36 4.583 1.44 | 6.17 0.72 1.500 4.32 3.083 9.36 4.667 1.44 6.25 0.72 1.583 4.32 3.167 9.36 4.750 1.44 33.12 5.00 Max.Eff.Inten.(mm/hr)= 12.45 over (min) 25.00 Storage Coeff. (min)=2.90 (ii)22.77 (ii)Unit Hyd. Tpeak (min)=5.0025.00 Unit Hyd. peak (cms)= 0.28 0.05 \*TOTALS\* PEAK FLOW (cms)= 0.04 0.00 0.041 (iii) (hrs)= TIME TO PEAK 2.75 3.00 2.75 35.00 11.08 RUNOFF VOLUME (mm)= 31.15 TOTAL RAINFALL (mm)= 36.00 RUNOFF COEFFICIENT = 0.97 36.00 36.00 0.97 0.31 0.87 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0007) AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 1 + 2 = 3 ID1= 1 ( 0200): 2.08 0.165 2.75 31.17 + ID2= 2 ( 0300): 0.52 0.041 2.75 31.15 -----ID = 3 ( 0007): 2.60 0.207 2.75 31.16 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 SS U U AAAAA L V V I VVI SS U U A A L Ι SSSSS UUUUU A A LLLLL VV OOO TTTTT TTTTT H H Y Y M M 000 ТΜ

0 0 Т Т ΗΥΥ MM MM O н 0 0 0 Т Т н 0 н Υ М М 0 000 Т Т Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Input Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\7 8d70d68-ae30-458e-b42b-377270058f04\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\7 8d70d68-ae30-458e-b42b-377270058f04\s DATE: 02-25-2025 TIME: 10:47:40 USER: COMMENTS: \*\* \*\* SIMULATION : AES 6H 005-Humber . . . . . . . . . . . . . . . . READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\ 875adc2c-1c8d-486e-8a08-c640e73024e8\ca1f19fd Comments: AES 6H 005-Humber | Ptotal= 47.81 mm | TIME RAIN | TIME RAIN |' TIME RAIN | TIME RAIN hrs mm/hr | hrs mm/hr |' hrs mm/hr | hrs mm/hr 16.25 0.00 0.00 1.75 3.50 6.69 5.25 0.96 0.25 0.96 2.00 16.25 3.75 3.82 5.50 0.96 0.50 0.96 2.25 43.98 4.00 3.82 5.75 0.96 0.75 0.96 | 2.50 43.98 | 4.25 1.91 | 6.00 0.96 1.00 0.96 | 2.75 12.43 | 4.50 1.91

1.25	5.74	3.00	12.43	4.75	0.96	
1.50	5.74	3.25	6.69	5.00	0.96	

-----

CALIB     STANDHYD ( 0100)   ID= 1 DT= 5.0 min	Area Total	(ha)= Imp(%)=	1.10 92.00	Dir. Conn.(%)=	92.00
		IMPERVI	OUS	PERVIOUS (i)	
Surface Area	(ha)=	1.0	1	0.09	
Dep. Storage	(mm)=	1.0	0	5.00	
Average Slope	(%)=	1.0	0	2.00	
Length	(m)=	85.0	0	40.00	
Mannings n	=	0.01	3	0.350	
0			-		

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

TRANSFORMED HYETOGRAPH						-	
TIME	E RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	s mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	8 0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	8 0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	8 0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.756	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	8 0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	8 0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.256	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	3 5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	7 5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	3 5.74	3.167	12.43	4.750	1.91		
Max.Eff.Inten.(r	•	43.98		23.12			
	(min)	5.00		10.00			
Storage Coeff.			• •	7.73 (ii	)		
Unit Hyd. Tpeak	· ·	5.00		10.00			
Unit Hyd. peak	(cms)=	0.27		0.13			
						FALS*	
PEAK FLOW	(cms)=	0.12		0.00	0.	.129 (iii)	)

TIME TO PEAK (hrs)= 2.75 2.75 2.75 46.81 RUNOFF VOLUME (mm)= 18.59 44.55 TOTAL RAINFALL (mm)= 47.81 47.81 47.81 RUNOFF COEFFICIENT = 0.98 0.39 0.93 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0105) Area (ha) = 3.24|ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00 -----PERVIOUS (i) IMPERVIOUS Surface Area (ha)= 2.27 0.97 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 2.00 1.00 Length (m)= 147.00 40.00 Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----TIME RAIN |' TIME RAIN TIME RAIN TIME RAIN mm/hr | hrs hrs mm/hr | hrs mm/hr | hrs mm/hr 0.083 0.00 | 1.667 5.74 | 3.250 12.43 4.83 0.96 0.00 | 1.750 5.74 | 3.333 6.69 4.92 0.96 0.167 0.250 0.00 | 1.833 16.25 | 3.417 6.69 5.00 0.96 0.96 | 1.917 16.25 | 3.500 6.69 | 0.333 5.08 0.96 0.417 0.96 2.000 16.25 3.583 6.69 5.17 0.96 0.500 0.96 2.083 16.25 3.667 6.69 5.25 0.96 0.583 0.96 2.167 16.25 3.750 6.69 5.33 0.96 0.667 0.96 2.250 16.25 | 3.833 3.82 5.42 0.96 0.96 | 2.333 43.98 | 3.917 0.750 3.82 5.50 0.96 0.833 0.96 | 2.417 43.98 | 4.000 3.82 5.58 0.96 0.917 0.96 | 2.500 43.98 | 4.083 3.82 5.67 0.96 1.000 0.96 | 2.583 43.98 | 4.167 3.82 5.75 0.96 1.083 0.96 | 2.667 43.98 | 4.250 3.82 5.83 0.96

0.96 | 2.750

0.96 2.833

5.74 2.917

5.74 3.000

5.74 | 3.083

43.98 4.333

12.43 | 4.417

12.43 4.500

12.43 4.583

12.43 | 4.667

1.91

1.91

1.91

1.91 | 6.17

1.91 | 6.25

5.92

6.00

6.08

0.96

0.96

0.96

0.96

0.96

1.167

1.250

1.333

1.417

1.500

1.583 5.74 | 3.167 12.43 | 4.750 1.91 | 43.98 Max.Eff.Inten.(mm/hr)= 20.93 over (min) 5.00 25.00 4.47 (ii) 20.61 (ii) 5.00 25.00 Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)= 0.23 0.05 \*TOTALS\* PEAK FLOW (cms)= 0.28 0.04 0.304 (iii) TIME TO PEAK (hrs)= 2.75 3.00 2.75 46.81 18.59 RUNOFF VOLUME (mm)= 38.34 47.81 TOTAL RAINFALL (mm)= 47.81 47.81 RUNOFF COEFFICIENT = 0.98 0.39 0.80 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006) AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 1 + 2 = 3 ------ID1= 1 ( 0100): 1.10 0.129 2.75 44.55 + ID2= 2 ( 0105): 3.24 0.304 2.75 38.34 \_\_\_\_\_ ID = 3 (0006):4.34 0.433 2.75 39.91 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ CALIB STANDHYD ( 0200) | Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.33 1.75 Dep. Storage 5.00 (mm)= 1.00 1.00 Average Slope (%)= 2.00 118.00 Length (m)= 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

	TR/	ANSFORME	D HYETOGR	APH		
TIME RAI		RAIN		RAIN		RAIN
hrs mm/h	r   hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083 0.0	0   1.667	5.74	3.250	12.43	4.83	0.96
0.167 0.0			3.333	6.69		0.96
0.250 0.0			3.417	6.69	5.00	0.96
0.333 0.9			3.500	6.69	5.08	0.96
0.417 0.9		16.25		6.69	5.17	0.96
0.500 0.9		16.25		6.69	5.25	0.96
0.583 0.9		16.25		6.69	5.33	0.96
0.667 0.9		16.25		3.82	5.42	0.96
0.750 0.9		43.98		3.82		0.96
0.833 0.9		43.98		3.82		0.96
0.917 0.9			4.083	3.82		0.96
1.000 0.9			4.167	3.82		0.96
1.083 0.9			4.250	3.82	5.83	0.96
1.167 0.9		43.98		1.91	5.92	0.96
1.250 0.9		12.43		1.91	6.00	0.96
1.333 5.74		12.43	1	1.91		0.96
1.417 5.74		12.43		1.91		0.96
1.500 5.74			4.667	1.91		0.96
1.583 5.74	4   3.167	12.43	4.750	1.91		
<pre>Max.Eff.Inten.(mm/hr)=</pre>	43.98		20.93			
over (min)	5.00		25.00			
Storage Coeff. (min)=			20.06 (ii	)		
Unit Hyd. Tpeak (min)=	5.00	• •	25.00	/		
Unit Hyd. peak (cms)=	0.24		0.05			
	0121		0.05	*T01	ALS*	
PEAK FLOW (cms)=	0.21		0.01		223 (iii)	)
TIME TO PEAK (hrs)=	2.75		3.00		2.75	
RUNOFF VOLUME (mm)=	46.81		18.59		2.29	
TOTAL RAINFALL (mm)=	47.81		47.81		7.81	
RUNOFF COEFFICIENT =	0.98		0.39		9.88	
***** WARNING: STORAGE COEFF	. IS SMALL	ER THAN	TIME STEP	!		
(i) CN PROCEDURE SELE						
CN* = 82.0 (ii) TIME STEP (DT) SH		•	• •			
THAN THE STORAGE			EQUAL			
(iii) PEAK FLOW DOES NO						
(III) PLAK PLOW DOLS NO	I INCLUDE		I II ANI.			
CALIB						
STANDHYD ( 0300) Area						
ID= 1 DT= 5.0 min   Total	Imp(%)= 3	34.00	Dir. Conn	.(%)= 8	34.00	
				、 、		
	TWAFKATO	JS PE	RVIOUS (i	)		

Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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

		TR/	ANSFORMEI	O HYETOGR	APH		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)= over (min)	43.98 5.00	20.93 20.00	
Storage Coeff. (min)=	2.59 (ii)	18.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.29	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.05	0.00	0.056 (iii)
TIME TO PEAK (hrs)=	2.75	2.92	2.75
RUNOFF VOLUME (mm)=	46.81	18.59	42.27
TOTAL RAINFALL (mm)=	47.81	47.81	47.81
RUNOFF COEFFICIENT =	0.98	0.39	0.88

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 Ia = Dep. Storage (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

\_\_\_\_\_ ADD HYD ( 0007) 1 + 2 = 3 AREA QPEAK TPEAK R.V. -----(ha) (cms) (hrs) (mm) ID1= 1 ( 0200): 2.08 0.223 2.75 42.29 + ID2= 2 ( 0300): 0.52 0.056 2.75 42.27 \_\_\_\_\_ ID = 3 (0007):0.279 2.60 2.75 42.29 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ \_\_\_\_\_ V I SSSSS U U A (v 6.2.2015) V L V U U A A V I SS L SS V V I U U AAAAA L V V Ι SS U A A L U I SSSSS UUUUU A A LLLLL VV TTTTT TTTTT H H Y Y M 000 М 000 ТΜ 0 0 Т Т н н үү MM MM O 0 0 Т Т Н Н Υ М ΜO 0 0 000 Т Т Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\* DETAILED OUTPUT \*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\9 12a43a6-3a88-45d8-bb0b-3be9c6c2d3e5\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\9 12a43a6-3a88-45d8-bb0b-3be9c6c2d3e5\s DATE: 02-25-2025 TIME: 10:47:40

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

USER:

COMMENTS:

\_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\ 875adc2c-1c8d-486e-8a08-c640e73024e8\25dccaf4 Comments: AES 6H\_010-Humber Ptotal= 55.69 mm RAIN |' TIME TIME RAIN | TIME RAIN | TIME RAIN mm/hr|' hrs hrs mm/hr | hrs mm/hr hrs mm/hr 0.00 0.00 1.75 18.94 3.50 7.80 5.25 1.11 0.25 1.11 | 2.00 18.94 | 3.75 4.46 | 5.50 1.11 0.50 1.11 2.25 51.24 4.00 4.46 5.75 1.11 0.75 1.11 | 2.50 51.24 | 4.25 2.23 | 6.00 1.11 1.00 1.11 2.75 14.48 4.50 2.23 1.25 6.68 3.00 14.48 4.75 1.11 1.50 6.68 3.25 7.80 5.00 1.11 CALIB STANDHYD ( 0100) Area (ha) = 1.10Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 |ID= 1 DT= 5.0 min | IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 1.01 0.09 (mm)= Dep. Storage 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 85.00 40.00 Mannings n = 0.013 0.350 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	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11

0.250 0.33 0.417 0.500 0.58 0.667 0.750 0.83 0.917 1.000 1.083 1.167 1.250 1.33 1.417 1.500	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1.917   2.000   2.083   2.167   2.250   2.333   2.417   2.500   2.583   2.667   2.750   2.833   2.917	18.94 18.94 18.94 18.94 51.24 51.24 51.24 51.24 51.24 51.24 51.24 14.48 14.48 14.48 14.48	<pre>3.417 3.500 3.583 3.667 3.750 3.833 3.917 4.000 4.083 4.167 4.250 4.333 4.417 4.500 4.583 4.667 4.750</pre>	7.80         7.80         7.80         7.80         7.80         4.46         4.46         4.46         4.46         4.46         4.46         2.23         2.23         2.23         2.23         2.23         2.23	5.08 5.17 5.25 5.33 5.42 5.50 5.58 5.67 5.75 5.83 5.92 6.00 6.08 6.17 6.25	$1.11 \\ $
Max.Eff.Inten.(n over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	(min) (min)= (min)=	5.00 3.03 5.00	(ii)	10.00		ALS*	
PEAK FLOW TIME TO PEAK RUNOFF VOLUME TOTAL RAINFALL RUNOFF COEFFICIE	(hrs)= (mm)= (mm)=	2.75 54.69 55.69		0.01 2.75 24.14 55.69 0.43	2 52 55	151 (iii .75 .24 .69 .94	)
<pre>***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:     CN* = 82.0 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.</pre>							
CALIB     STANDHYD ( 0105)   ID= 1 DT= 5.0 min		• •		Dir. Conn.	(%)= 7	0.00	
Surface Area Dep. Storage Average Slope Length Mannings n	(ha)= (mm)= (%)=	IMPERVIOU 2.27 1.00 1.00 147.00 0.013		RVIOUS (i) 0.97 5.00 2.00 40.00 0.350			

TRANSFORMED HYETOGRAPH								
TIM	E RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN	
hrs	s mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr	
0.083	3 0.00	1.667	6.68	3.250	14.48	4.83	1.11	
0.16	7 0.00	1.750	6.68	3.333	7.80	4.92	1.11	
0.256	0.00	1.833	18.94	3.417	7.80	5.00	1.11	
0.333	3 1.11	1.917	18.94	3.500	7.80	5.08	1.11	
0.41	7 1.11	2.000	18.94	3.583	7.80	5.17	1.11	
0.500	9 1.11	2.083	18.94	3.667	7.80	5.25	1.11	
0.583	3 1.11	2.167	18.94	3.750	7.80	5.33	1.11	
0.667	7 1.11	2.250	18.94	3.833	4.46	5.42	1.11	
0.756	9 1.11	2.333	51.24	3.917	4.46	5.50	1.11	
0.83	3 1.11	2.417	51.24	4.000	4.46	5.58	1.11	
0.91	7 1.11	2.500	51.24	4.083	4.46	5.67	1.11	
1.000	9 1.11	2.583	51.24	4.167	4.46	5.75	1.11	
1.08	3 1.11	2.667	51.24	4.250	4.46	5.83	1.11	
1.167	7 1.11	2.750	51.24	4.333	2.23	5.92	1.11	
1.250	9 1.11	2.833	14.48	4.417	2.23	6.00	1.11	
1.33	6.68	2.917	14.48	4.500	2.23	6.08	1.11	
1.41	6.68	3.000	14.48	4.583	2.23	6.17	1.11	
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11	
1.583	6.68	3.167	14.48	4.750	2.23			
Max.Eff.Inten.(r	51.24		28.47					
over (min)		5.00		20.00				
Storage Coeff.	(min)=	4.21	(ii)	18.48 (ii)	)			
Unit Hyd. Tpeak	(min)=	5.00		20.00				
Unit Hyd. peak	(cms)=	0.24		0.06				
					*T01	FALS*		
PEAK FLOW	(cms)=	0.32		0.05 0.367 (iii)			)	
		o ==	2 7F 2 02 2 F					

TRANSFORMED HVFTOGRAPH

over	(miu)	5.00	20.00	
Storage Coeff.	(min)=	4.21 (ii)	18.48 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	20.00	
Unit Hyd. peak	(cms)=	0.24	0.06	
				*TOTALS*
PEAK FLOW	(cms)=	0.32	0.05	0.367 (iii)
TIME TO PEAK	(hrs)=	2.75	2.92	2.75
RUNOFF VOLUME	(mm)=	54.69	24.14	45.52
TOTAL RAINFALL	(mm)=	55.69	55.69	55.69
RUNOFF COEFFICIE	ENT =	0.98	0.43	0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006) 

 | 1 + 2 = 3 |
 AREA QPEAK TPEAK R.V.

 ----- (ha) (cms) (hrs) (mm)

 (ha) (cms) (hrs) ID1= 1 ( 0100): 1.10 0.151 2.75 52.24 + ID2= 2 ( 0105): 3.24 0.367 2.75 45.52 \_\_\_\_\_ ID = 3 (0006): 4.34 0.517 2.75 47.23 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ -----CALIB STANDHYD ( 0200) Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 IMPERVIOUS PERVIOUS (i) Surface Area(ha)=1.750.33Dep. Storage(mm)=1.005.00Average Slope(%)=1.002.00Length(m)=118.0040.00Mannings n=0.0130.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

IRANSFORMED 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	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		
Max.Eff.Inten.(mm/	51.24		28.47				
over (min)		5.00		20.00			

3.69 (ii) 17.96 (ii) 5.00 20.00 Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)= 0.25 0.06 \*TOTALS\* PEAK FLOW (cms)= 0.25 0.02 0.264 (iii) TIME TO PEAK 2.75 (hrs)= 2.92 2.75 54.69 RUNOFF VOLUME 49.80 (mm)= 24.14 TOTAL RAINFALL (mm)= 55.69 55.69 55.69 RUNOFF COEFFICIENT = 0.98 0.43 0.89 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0300) Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.44 0.08 5.00 Dep. Storage (mm)= 1.00 Average Slope (%)= 2.00 1.00 40.00 Length (m)= 59.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11

1.167 1.11 | 2.750 51.24 | 4.333 2.23 | 5.92 1.11 1.250 1.11 2.833 14.48 4.417 2.23 6.00 1.11 1.333 6.68 2.917 14.48 4.500 2.23 6.08 1.11 1.417 6.68 3.000 14.48 4.583 2.23 6.17 1.11 1.500 6.68 3.083 14.48 4.667 2.23 6.25 1.11 1.583 6.68 3.167 14.48 4.750 2.23 51.24 Max.Eff.Inten.(mm/hr)= 28.47 over (min) 5.00 20.00 Storage Coeff. (min)=2.43 (ii)16.71 (ii)Unit Hyd. Tpeak (min)=5.0020.00 Unit Hyd. peak (cms)= 0.30 0.06 \*TOTALS\* PEAK FLOW (cms)= 0.06 0.00 0.066 (iii) (hrs)= TIME TO PEAK 2.75 2.92 2.75 54.69 24.14 RUNOFF VOLUME (mm)= 49.79 TOTAL RAINFALL (mm)= RUNOFF COEFFICIENT = 55.69 55.69 55.69 0.98 0.43 0.89 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0007) AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 1 + 2 = 3 2.08 0.264 2.75 49.80 0.52 0.066 2.75 49.79 ID1= 1 ( 0200): + ID2= 2 ( 0300): -----ID = 3 ( 0007): 2.60 0.330 2.75 49.79 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 SS U U AAAAA L V V I Ι V V SS U U A A L Ι SSSSS UUUUU A A LLLLL VV OOO TTTTT TTTTT H H Y Y M M 000 ТΜ

0 0 Т Т ΗΥΥ MM MM O Н 0 0 0 Т Т н 0 н Υ М М 0 000 Т Т Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Input Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\0 b2dc01d-f2ba-4ad7-9517-617f7d61a63b\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\0 b2dc01d-f2ba-4ad7-9517-617f7d61a63b\s DATE: 02-25-2025 TIME: 10:47:40 USER: COMMENTS: \*\* \*\* SIMULATION : AES 6H 025-Humber . . . . . . . . . . . . . . . . READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\ 875adc2c-1c8d-486e-8a08-c640e73024e8\6ec422e5 Comments: AES 6H 025-Humber | Ptotal= 65.59 mm | TIME RAIN | TIME RAIN |' TIME RAIN | TIME RAIN hrs mm/hr | hrs mm/hr |' hrs mm/hr | hrs mm/hr 0.00 0.00 1.75 22.30 3.50 9.18 | 5.25 1.31 0.25 1.31 | 2.00 22.30 3.75 5.25 5.50 1.31 1.31 | 2.25 0.50 60.35 4.00 5.25 5.75 1.31 0.75 1.31 | 2.50 60.35 | 4.25 2.62 6.00 1.31 1.00 1.31 | 2.75 17.06 | 4.50 2.62

1.25	7.87	3.00	17.06	4.75	1.31
1.50	7.87	3.25	9.18	5.00	1.31

-----

CALIB     STANDHYD ( 0100)   ID= 1 DT= 5.0 min	Area Total	· · /	1.10 92.00	Dir. Conn.(%)=	92.00
		IMPERVIC	US	PERVIOUS (i)	
Surface Area	(ha)=	1.01		0.09	
Dep. Storage	(mm)=	1.00	)	5.00	
Average Slope	(%)=	1.00	)	2.00	
Length	(m)=	85.00	)	40.00	
Mannings n	=	0.013		0.350	

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

		TRA	ANSFORME	D HYETOGR	APH	-	
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		
Max.Eff.Inten.(mm	/hr)=	60.35		38.26			
over (	•	5.00		10.00			
Storage Coeff. (				6.82 (ii	)		
Unit Hyd. Tpeak (	•	5.00		10.00			
Unit Hyd. peak (	•	0.28		0.14			
· · · ·					*T0	TALS*	

 \*IOTALS\*

 PEAK FLOW
 (cms)=
 0.17
 0.01
 0.178 (iii)

2.75 64.59 TIME TO PEAK (hrs)= 2.75 2.75 RUNOFF VOLUME (mm)= 31.55 61.94 TOTAL RAINFALL 65.59 (mm)= 65.59 65.59 RUNOFF COEFFICIENT = 0.98 0.48 0.94 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0105) | Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.27 0.97 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 147.00 40.00 Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN | ' TIME RAIN | TIME TIME TIME RAIN RAIN mm/hr İ' mm/hr l hnc hnc mm/hr İ mm/hr hnc hnc

nrs	mm/nr	nrs	mm/nr	nrs	mm/nr	nrs	mm/nr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31

1.583 7.87 | 3.167 17.06 | 4.750 2.62 | 60.35 Max.Eff.Inten.(mm/hr)= 36.91 over (min) 5.00 20.00 3.94 (ii) 16.81 (ii) 5.00 20.00 Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)= 0.24 0.06 \*TOTALS\* PEAK FLOW (cms)= 0.38 0.07 0.442 (iii) 2.75 TIME TO PEAK (hrs)= 2.92 2.75 64.59 65.59 31.55 RUNOFF VOLUME (mm)= 54.68 65.59 TOTAL RAINFALL (mm)= 65.59 RUNOFF COEFFICIENT = 0.98 0.48 0.83 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006) 1 + 2 = 3 AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ------ID1= 1 (0100): 1.10 0.178 2.75 61.94 + ID2= 2 (0105): 3.24 0.442 2.75 54.68 \_\_\_\_\_ ID = 3 (0006):4.34 0.620 2.75 56.52 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ CALIB STANDHYD ( 0200) | Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.33 1.75 Dep. Storage 5.00 (mm)= 1.00 1.00 Average Slope (%)= 2.00 118.00 Length (m)= 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH								
TIME RAIN			' TIME	RAIN		RAIN		
hrs mm/hr	hrs	mm/hr	'hrs	mm/hr	hrs	mm/hr		
0.083 0.00	1.667	7.87	3.250	17.06	4.83	1.31		
0.167 0.00	1.750	7.87	3.333	9.18	4.92	1.31		
0.250 0.00	1.833	22.30	3.417	9.18	5.00	1.31		
0.333 1.31	1.917	22.30	3.500	9.18	5.08	1.31		
0.417 1.31		22.30	3.583	9.18	5.17	1.31		
0.500 1.31	2.083	22.30	3.667	9.18	5.25	1.31		
0.583 1.31	2.167	22.30	3.750	9.18	5.33	1.31		
0.667 1.31	2.250	22.30	3.833	5.25	5.42	1.31		
0.750 1.31	2.333	60.35	3.917	5.25	5.50	1.31		
0.833 1.31	2.417	60.35	4.000	5.25	5.58	1.31		
0.917 1.31	2.500	60.35	4.083	5.25	5.67	1.31		
1.000 1.31	2.583	60.35	4.167	5.25	5.75	1.31		
1.083 1.31	2.667	60.35	4.250	5.25	5.83	1.31		
1.167 1.31	2.750	60.35	4.333	2.62	5.92	1.31		
1.250 1.31	2.833	17.06	4.417	2.62	6.00	1.31		
1.333 7.87	2.917	17.06	4.500	2.62	6.08	1.31		
1.417 7.87	3.000	17.06	4.583	2.62	6.17	1.31		
	3.083	17.06		2.62	6.25	1.31		
1.583 7.87	3.167	17.06	4.750	2.62				
May Eff Inter (mm/hm)	<b>CO 3</b> 5		DC 01					
Max.Eff.Inten.(mm/hr)=	60.35		36.91					
over (min)	5.00		20.00	<u>\</u>				
Storage Coeff. (min)=		• •	16.32 (ii	)				
Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)=	5.00		20.00 0.06					
UNIT Hyd. peak (Chis)=	0.26		0.00	*тот	ALS*			
PEAK FLOW (cms)=	0.29		0.02		314 (iii)	<b>\</b>		
TIME TO PEAK (hrs)=	2.75		2.92		.75	)		
RUNOFF VOLUME (mm)=	64.59		31.55		.30			
TOTAL RAINFALL (mm)=	65.59		55.59		.59			
RUNOFF COEFFICIENT =	0.98		0.48		.90			
	0.50		0.40	Ŭ				
***** WARNING: STORAGE COEFF.	IS SMALL	ER THAN	TIME STEP	!				
(i) CN PROCEDURE SELEC	TED EOR D		055EC ·					
$CN^* = 82.0$ I								
(ii) TIME STEP (DT) SHO	•	•	• •					
THAN THE STORAGE C			220/12					
(iii) PEAK FLOW DOES NOT			IF ANY.					
	(h.c.)	0.53						
STANDHYD (0300) Area				(0/)	4 00			
ID= 1 DT= 5.0 min   Total	⊥mp(%)=	84.00 l	JIR. CONN	•(%)= 8	4.00			
			RVIOUS (i	)				
	THELIVIO	J FEI	(1002 (1	1				

Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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	1.667	7.87	3.250	17.06	4.83	1.31	
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31	
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31	
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31	
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31	
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31	
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31	
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31	
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31	
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31	
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31	
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31	
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31	
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31	
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31	
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31	
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31	
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31	
1.583	7.87	3.167	17.06	4.750	2.62			

Max.Eff.Inten.(mm/hr)	= 60.35	36.91	
over (min)	5.00	20.00	
Storage Coeff. (min):	= 2.28 (ii)	15.15 (ii)	
Unit Hyd. Tpeak (min):	= 5.00	20.00	
Unit Hyd. peak (cms):	= 0.30	0.07	
			*TOTALS*
PEAK FLOW (cms):	= 0.07	0.01	0.079 (iii)
TIME TO PEAK (hrs):	= 2.75	2.92	2.75
RUNOFF VOLUME (mm):	64.59	31.55	59.29
TOTAL RAINFALL (mm):	65.59	65.59	65.59
RUNOFF COEFFICIENT =	= 0.98	0.48	0.90

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 Ia = Dep. Storage (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

\_\_\_\_\_ ADD HYD ( 0007) 1 + 2 = 3 AREA QPEAK TPEAK R.V. -----(ha) (cms) (hrs) (mm) ID1= 1 ( 0200): 2.08 0.314 2.75 59.30 + ID2= 2 ( 0300): 0.52 0.079 2.75 59.29 \_\_\_\_\_ 0.393 ID = 3 (0007):2.60 2.75 59.30 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ \_\_\_\_\_ V V I SSSSS U U A L (v 6.2.2015) V U U A A V Ι SS L SS V V I U U AAAAA L V V I SS U U A A L I SSSSS UUUUU A A LLLLL VV TTTTT TTTTT H H Y Y M 000 М 000 ТΜ 0 0 Т Т н н үү MM MM O 0 0 Т Т Н Н Y М ΜO 0 0 000 Т Т Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\* DETAILED OUTPUT \*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\6 f2d1128-92be-4a10-b8a3-c7bcc2345a37\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\6 f2d1128-92be-4a10-b8a3-c7bcc2345a37\s DATE: 02-25-2025 TIME: 10:47:41

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

USER:

COMMENTS:

READ STORM	Filenan		sers\cae Local\Te	h076182\A mp\	ppD		
   Ptotal= 73.00 mm	Comment	875a		d-486e-8a	08-c640e7	'3024e8\d	2571f5b
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs		hrs			mm/hr
0.00	0.00		•	3.50			1.46
0.25		2.00		3.75			1.46
0.50		2.25		4.00			1.46
0.75		2.50	67.16	4.25	2.92		
1.00		2.75	18.98	4.25	2.92	0.00	
1.25	8.76		18.98	4.75	1.46		
1.50		3.25		5.00			
				-	-		
CALIB							
STANDHYD ( 0100)		• •					
ID= 1 DT= 5.0 min	Total In	np(%)= 9	92.00	Dir. Conn	.(%)= 92	2.00	
	-				`		
				RVIOUS (i	)		
Surface Area		1.01		0.09			
	(mm)=			5.00			
	(%)=			2.00			
Length	• •		4				
Mannings n	=	0.013	(	0.350			
NOTE: RAINFA	LL WAS TF	RANSFORM	ED TO	5.0 MIN.	TIME STEP	· ·	
		_					
				D HYETOGR			
TIME	RAIN	TIME	RAIN	I' LIME	RAIN	TIME	RATN

TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46

		1					
0.250				3.417			
0.333				3.500	10.22		1.46
0.417				3.583	10.22		
0.500		2.083		3.667	10.22		1.46
0.583		2.167		3.750	10.22		1.46
0.667		2.250		3.833	5.84		1.46
0.750		-		3.917			1.46
0.833			67.16				1.46
0.917				4.083			
1.000		2.583		4.167			
1.083				4.250			
1.167				4.333			1.46
1.250				4.417			1.46
	8.76			4.500			1.46
	8.76			4.583			1.46
	8.76			4.667			1.46
1.583	8.76	3.167	18.98	4.750	2.92		
Max.Eff.Inten.(m	•			44.89			
	(min)	5.00		10.00			
Storage Coeff.	(min)=	2.72	(ii)	6.53 (ii	i)		
Unit Hyd. Tpeak				10.00			
Unit Hyd. peak	(cms)=	0.29		0.14			
						ALS*	
PEAK FLOW	(cms)=	0.19				199 (iii	)
TIME TO PEAK RUNOFF VOLUME	(hrs)=	2.75		2.75		.75	
RUNOFF VOLUME	(mm)=	72.00		37.36		.23	
IOTAL RAINFALL	(mm)=	/3.00		73.00		8.00	
RUNOFF COEFFICIE	NT =	0.99		0.51	6	.95	
***** WARNING: STORAC	E COEFF.	IS SMALLE	R THAN	TIME STEF	pi		
··· · · · · · · · · · · · · · · · · ·							
(i) CN PROCEDU							
	32.0 Ia						
(ii) TIME STEP				EQUAL			
THAN THE S							
(iii) PEAK FLOW	DOES NOT	INCLUDE E	SASEFLOW	IF ANY.			
CALIB			2 24				
STANDHYD ( 0105)					- (0/) -	0 00	
ID= 1 DT= 5.0 min	Total I	mp(%)= /	0.00	Dir. Conr	1.(%)= /	0.00	
			IC 5-				
		IMPERVIOL		RVIOUS (i	L)		
Surface Area	(ha)=	2.27		0.97			
	• •	1.00		5.00			
Average Slope	(%)=	1.00		2.00			
Length	(m)=			40.00			
Mannings n	=	0.013		0.350			

		RANSFORME	D HYEIOGRA	<b>\РН</b> -	-	
TIME	RAIN   TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs m	m/hr   hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00   1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00   1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00   1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46   1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46   2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46   2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46   2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46   2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46   2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46   2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46   2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46   2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46   2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46   2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46   2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76   2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76   3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76   3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76   3.167	18.98	4.750	2.92		
Max.Eff.Inten.(mm/hr	)= 67.1	6	43.44			
over (min	) 5.0	0	20.00			
Storage Coeff. (min	)= 3.7	7 (ii)	15.83 (ii)	)		
Unit Hyd. Tpeak (min	)= 5.0	0	20.00			
Unit Hvd. peak (cms	) = 0.2	5	0.07			

---- TRANSFORMED HYETOGRAPH ----

Storage Coeff. Unit Hyd. Tpeak	(min)=	3.77 (ii) 5.00	15.83 (ii) 20.00	
Unit Hyd. peak	(cms)=	0.25	0.07	*TOTALS*
PEAK FLOW	(cms)=	0.42	0.08	0.499 (iii)
TIME TO PEAK	(hrs)=	2.75	2.92	2.75
RUNOFF VOLUME	(mm)=	72.00	37.36	61.61
TOTAL RAINFALL	(mm)=	73.00	73.00	73.00
RUNOFF COEFFICIE	ENT =	0.99	0.51	0.84

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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.

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ADD HYD ( 0006) 

 1 + 2 = 3
 AREA QPEAK TPEAK R.V.

 ----- (ha) (cms) (hrs) (mm)

 (ha) (cms) (hrs) ID1= 1 ( 0100): 1.10 0.199 2.75 69.23 + ID2= 2 ( 0105): 3.24 0.499 2.75 61.61 \_\_\_\_\_ ID = 3 (0006): 4.34 0.698 2.75 63.54 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ -----CALIB STANDHYD ( 0200) Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) 

 Surface Area
 (ha)=
 1.75
 0.33

 Dep. Storage
 (mm)=
 1.00
 5.00

 Average Slope
 (%)=
 1.00
 2.00

 Length
 (m)=
 118.00
 40.00

 Mannings n
 =
 0.013
 0.350

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

---- TRANSFORMED HYETOGRAPH ----

			IKA	NSFORMEI	J HYEIOGK	APH		
	TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
	hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
	0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
	0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
	0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
	0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
	0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
	0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
	0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
	0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
	0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
	0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
	0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
	1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
	1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
	1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
	1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
	1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
	1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
	1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
	1.583	8.76	3.167	18.98	4.750	2.92		
f.I	nten.(mm/	/hr)=	67.16	4	43.44			
			F 00		~ ~ ~			

Max.Eff.Inten.(mm/hr)=	67.16	43.44
over (min)	5.00	20.00

3.31 (ii) 5.00 Storage Coeff. (min)= 15.36 (ii) 5.00 Unit Hyd. Tpeak (min)= 20.00 Unit Hyd. peak (cms)= 0.26 0.07 \*TOTALS\* PEAK FLOW (cms)= 0.33 0.03 0.352 (iii) TIME TO PEAK (hrs)= 2.75 2.92 2.75 RUNOFF VOLUME (mm)= 72.00 66.45 37.36 TOTAL RAINFALL (mm)= 73.00 73.00 73.00 RUNOFF COEFFICIENT = 0.99 0.51 0.91 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0300) | Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) Surface Area 0.08 (ha)= 0.44 5.00 Dep. Storage (mm)= 1.00 Average Slope (%)= 2.00 1.00 Length 40.00 (m)= 59.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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TRANSFORMED	HYETOGRAPH
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		110					
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46

1.167 1.46 2.750 67.16 4.333 2.92 5.92 1.46 1.250 1.46 | 2.833 18.98 | 4.417 2.92 | 6.00 1.46 1.333 8.76 2.917 18.98 4.500 2.92 6.08 1.46 1.417 8.76 3.000 18.98 4.583 2.92 6.17 1.46 1.500 8.76 3.083 18.98 4.667 2.92 6.25 1.46 1.583 8.76 | 3.167 18.98 | 4.750 2.92 | 67.16 Max.Eff.Inten.(mm/hr)= 43.44 over (min) 5.00 15.00 Storage Coeff. (min)=2.18 (ii)14.24 (ii)Unit Hyd. Tpeak (min)=5.0015.00 Unit Hyd. peak (cms)= 0.31 0.08 \*TOTALS\* PEAK FLOW (cms)= 0.08 0.01 0.089 (iii) 2.75 2.75 (mm)= 72.00 ...AL RAINFALL (mm)= 73.00 RUNOFF COEFFICIENT = 0.00 WARNING: STOT 2.83 2.75 37.36 66.44 73.00 73.00 0.51 0.91 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0007) AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 1 + 2 = 3 2.08 0.352 2.75 66.45 0.52 0.089 2.75 66.44 ID1= 1 ( 0200): + ID2= 2 ( 0300): -----ID = 3 ( 0007): 2.60 0.441 2.75 66.45 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 SS U U AAAAA L V V I Ι V V SS U U A A L Ι SSSSS UUUUU A A LLLLL VV OOO TTTTT TTTTT H H Y Y M M 000 ТΜ

0 0 Т Т ΗΥΥ MM MM O н 0 0 0 Т Т н 0 н Υ М М 0 000 Т Т Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Input Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\1 b39eea3-6c4f-4f88-8dc8-a0dc8825d5e5\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\1 b39eea3-6c4f-4f88-8dc8-a0dc8825d5e5\s DATE: 02-25-2025 TIME: 10:47:41 USER: COMMENTS: \_\_\_\_\_ \*\* \*\* SIMULATION : AES 6H 100-Humber . . . . . . . . . . . . . . . . READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\ 875adc2c-1c8d-486e-8a08-c640e73024e8\46578424 Comments: AES 6H 100-Humber | Ptotal= 80.31 mm | TIME RAIN | TIME RAIN |' TIME RAIN | TIME RAIN mm/hr |' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 0.00 0.00 1.75 27.30 3.50 11.24 | 5.25 1.61 0.25 1.61 2.00 27.30 3.75 6.42 5.50 1.61 2.25 0.50 1.61 73.88 4.00 6.42 5.75 1.61 0.75 1.61 | 2.50 73.88 4.25 3.21 | 6.00 1.61 1.00 1.61 | 2.75 20.88 4.50 3.21

1.25	9.64	3.00	20.88	4.75	1.61
1.50	9.64	3.25	11.24	5.00	1.61

-----

CALIB     STANDHYD ( 0100)   ID= 1 DT= 5.0 min	Area Total	(ha)= Imp(%)=	1.10 92.00		= 92.00
		IMPERVIO	DUS	PERVIOUS (i)	
Surface Area	(ha)=	1.01	L	0.09	
Dep. Storage	(mm)=	1.00	9	5.00	
Average Slope	(%)=	1.00	)	2.00	
Length	(m)=	85.00	9	40.00	
Mannings n	=	0.01	3	0.350	
<u> </u>					

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

		TRA	NSFORME	D HYETOGR	APH	-	
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		
nten.(mm/	(bp)_	73.88		51.56			
•	•			10.00			
over (n	птп)	5.00		10.00			

Max.Eff.Inten.(	mm/hr)=	73.88	51.56	
over	(min)	5.00	10.00	
Storage Coeff.	(min)=	2.62 (ii)	6.29 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	10.00	
Unit Hyd. peak	(cms)=	0.29	0.15	
				*TOTALS*
PEAK FLOW	(cms)=	0.21	0.01	0.219 (iii)

TIME TO PEAK (hrs)= 2.75 2.75 2.75 79.31 RUNOFF VOLUME (mm)= 43.27 76.42 80.31 80.31 TOTAL RAINFALL (mm)= 80.31 RUNOFF COEFFICIENT = 0.99 0.54 0.95 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0105) Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00 -----PERVIOUS (i) IMPERVIOUS Surface Area (ha)= 2.27 0.97 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 2.00 1.00 Length (m)= 147.00 40.00 Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----TIME RAIN |' TIME RAIN RAIN | TIME RAIN TIME mm/hr | hrs hrs hrs mm/hr | mm/hr | hrs mm/hr 0.00 | 1.667 9.64 | 3.250 0.083 20.88 4.83 1.61 0.00 | 1.750 9.64 | 3.333 11.24 | 4.92 0.167 1.61 0.250 0.00 | 1.833 27.30 | 3.417 11.24 5.00 1.61 0.333 1.61 | 1.917 27.30 | 3.500 11.24 | 5.08 1.61 0.417 1.61 2.000 27.30 3.583 11.24 5.17 1.61 0.500 1.61 | 2.083 27.30 3.667 11.24 5.25 1.61 0.583 1.61 2.167 27.30 3.750 11.24 5.33 1.61 0.667 1.61 | 2.250 27.30 | 3.833 6.42 5.42 1.61 1.61 | 2.333 6.42 | 0.750 73.88 | 3.917 5.50 1.61 0.833 1.61 | 2.417 73.88 4.000 6.42 5.58 1.61 0.917 1.61 | 2.500 73.88 | 4.083 6.42 5.67 1.61

1.000

1.083

1.167

1.250

1.333

1.500

1.417

1.61 | 2.583

1.61 | 2.667

1.61 | 2.750

1.61 | 2.833

9.64 2.917

9.64 3.000

9.64 | 3.083

73.88 | 4.167

73.88 | 4.333

20.88 4.500

20.88 | 4.417

20.88 4.583

20.88 | 4.667 3.21 | 6.25

73.88 | 4.250

6.42 5.75

3.21 5.92

3.21 6.00

3.21 6.08

3.21 6.17

5.83

6.42

1.61

1.61

1.61

1.61

1.61

1.61

1.61

1.583 9.64 3.167 20.88 4.750 3.21 Max.Eff.Inten.(mm/hr)= 73.88 50.02 over (min) 5.00 20.00 3.63 (ii) 15.03 (ii) 5.00 20.00 Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)= 0.25 0.07 \*TOTALS\* PEAK FLOW (cms)= 0.47 0.10 0.556 (iii) 2.75 79.31 TIME TO PEAK (hrs)= 2.75 2.92 2.75 43.27 RUNOFF VOLUME (mm)= 68.50 TOTAL RAINFALL (mm)= 80.31 80.31 80.31 RUNOFF COEFFICIENT = 0.99 0.54 0.85 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006) 1 + 2 = 3 AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) ------ID1= 1 (0100): 1.10 0.219 2.75 76.42 + ID2= 2 (0105): 3.24 0.556 2.75 68.50 \_\_\_\_\_ ID = 3 (0006):4.34 0.775 2.75 70.51 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ CALIB STANDHYD ( 0200) | Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 84.00 Dir. Conn.(%)= 84.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.33 1.75 Dep. Storage 5.00 (mm)= 1.00 1.00 Average Slope (%)= 2.00 118.00 Length (m)= 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH										
TIME RAIN	TIME	RAIN	' TIME	RAIN		RAIN				
hrs mm/hr	hrs	mm/hr	' hrs			mm/hr				
0.083 0.00	1.667	9.64	3.250	20.88	4.83	1.61				
0.167 0.00	1.750	9.64		11.24	4.92	1.61				
0.250 0.00	1.833	27.30	3.417	11.24	5.00	1.61				
0.333 1.61	1.917	27.30	3.500	11.24	5.08	1.61				
0.417 1.61	2.000	27.30	3.583	11.24	5.17	1.61				
0.500 1.61	2.083	27.30	3.667	11.24	5.25	1.61				
0.583 1.61	2.167	27.30	3.750	11.24	5.33	1.61				
0.667 1.61	2.250	27.30	3.833	6.42	5.42	1.61				
0.750 1.61	2.333	73.88	3.917	6.42	5.50	1.61				
0.833 1.61	2.417	73.88	4.000	6.42	5.58	1.61				
0.917 1.61	2.500	73.88	4.083	6.42	5.67	1.61				
1.000 1.61	2.583	73.88	4.167	6.42	5.75	1.61				
1.083 1.61	2.667	73.88	4.250	6.42	5.83	1.61				
1.167 1.61	2.750	73.88	4.333	3.21	5.92	1.61				
1.250 1.61	2.833	20.88	4.417	3.21	6.00	1.61				
1.333 9.64	2.917	20.88		3.21	6.08	1.61				
1.417 9.64	3.000	20.88		3.21	6.17	1.61				
1.500 9.64	3.083		4.667	3.21	6.25	1.61				
1.583 9.64	3.167	20.88	4.750	3.21						
	72 00		F0 02							
Max.Eff.Inten.(mm/hr)=	73.88		50.02							
over (min)	5.00		15.00	`						
Storage Coeff. (min)=		• •	14.58 (ii	.)						
Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)=	5.00 0.27		15.00 0.08							
Unit Hyu: peak (Cms)-	0.27		0.00	*тот	ALS*					
PEAK FLOW (cms)=	0.36		0.04		393 (iii)	)				
TIME TO PEAK (hrs)=	2.75		2.83		.75	/				
RUNOFF VOLUME (mm)=	79.31		43.27		.54					
TOTAL RAINFALL (mm)=	80.31		80.31		.31					
RUNOFF COEFFICIENT =	0.99				.92					
				-						
***** WARNING: STORAGE COEFF.	IS SMALL	er than <sup>-</sup>	TIME STEP	9 !						
<pre>(i) CN PROCEDURE SELECT</pre>	ED FOR P	ERVIOUS	LOSSES:							
CN* = 82.0 Ia	•	•	• •							
(ii) TIME STEP (DT) SHOU			EQUAL							
THAN THE STORAGE CC										
(iii) PEAK FLOW DOES NOT	INCLUDE	BASEFLOW	IF ANY.							
CALIB										
STANDHYD ( 0300) Area	(ha) =	0.52								
ID= 1 DT= 5.0 min   Total I			Dir Conn	.(%)= 8	4.00					
				• (~)= 0						
	IMPERVIO	US PEI	RVIOUS (i	)						
			(_	/						

Surface Area	(ha)=	0.44	0.08
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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	1.667	9.64	3.250	20.88	4.83	1.61		
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61		
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61		
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61		
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61		
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61		
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61		
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61		
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61		
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61		
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61		
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61		
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61		
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61		
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61		
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61		
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61		
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61		
1.583	9.64	3.167	20.88	4.750	3.21				

Max.Eff.Inten.(mm/hr)= over (min)	73.88 5.00	50.02 15.00	
Storage Coeff. (min)=	2.10 (ii)	13.50 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.09	0.01	0.098 (iii)
TIME TO PEAK (hrs)=	2.75	2.83	2.75
RUNOFF VOLUME (mm)=	79.31	43.27	73.53
TOTAL RAINFALL (mm)=	80.31	80.31	80.31
RUNOFF COEFFICIENT =	0.99	0.54	0.92

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0007) 1 + 2 = 3 | AREA QPEAK TPEAK R.V. ID1= 1 ( 0200): 2.08 0.393 2.75 73.54 + ID2= 2 ( 0300): 0.52 0.098 2.75 73.53 ID = 3 ( 0007): 2.60 0.491 2.75 73.54 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. Vaughan Metropolitan Centre Schedule 'C' Class Environmental Assessment (EA) Studies for the Extensions of Interchange Way and Millway Avenue



## Appendix C: Proposed Conditions Hydrology



\_\_\_\_\_\_ SSSSS U U A L V V Ι (v 6.2.2015) V I U U A A V SS L SS V V U U AAAAA L Ι V V Ι SS U UAAL Т VV SSSSS UUUUU A A LLLLL ΤΤΤΤΤ ΤΤΤΤΤ Η 000 H Y Y M 000 ТΜ М 0 0 Т Т н Н ΥY MM MM 0 0 0 0 Т Т Н Н Υ М МΟ 0 Т Т 000 Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\6 d4407a4-639c-4e63-9e51-d267568ba70c\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\6 d4407a4-639c-4e63-9e51-d267568ba70c\s DATE: 02-25-2025 TIME: 10:57:44 USER: COMMENTS: -----\*\* \*\* SIMULATION : AES 6H\_002-Humber -----READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\

   Ptotal= 36.00 mm		60c23a8d-ae9 NES 6H_002-H		o3-f0f6d0590af0	\c9df40cc
	mm/hr   h 0.00   1. 0.72   2. 0.72   2. 0.72   2. 0.72   2. 4.32   3.	0012.242533.125033.12759.36	3.50 3.75 4.00 4.25 4.50 4.75	2.88   5.50 2.88   5.75 1.44   6.00 1.44   0.72	mm/hr 0.72 0.72 0.72
CALIB     STANDHYD ( 0100)   ID= 1 DT= 5.0 min			Dir. Conn.	(%)= 92.00	
Length Mannings n	(ha)= 1	01 00 00 5.00 013	RVIOUS (i) 0.09 5.00 2.00 40.00 0.350 5.0 MIN. 1		

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

		TR/	ANSFORME	) HYETOGR	APH		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72

1.500 4.32 3.083 9.36 4.667 1.44 6.25 0.72 4.32 | 3.167 9.36 | 4.750 1.44 | 1.583 Max.Eff.Inten.(mm/hr)= 33.12 12.45 over (min) 5.00 25.00 3.61 (ii) 23.48 (ii) 5.00 25.00 Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)= 0.25 0.05 \*TOTALS\* PEAK FLOW (cms)= 0.09 0.00 0.094 (iii) 2.75 TIME TO PEAK (hrs)= 3.00 2.75 RUNOFF VOLUME (mm)= 35.00 11.08 33.08 36.00 36.00 TOTAL RAINFALL (mm)= 36.00 RUNOFF COEFFICIENT = 0.97 0.92 0.31 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0105) | Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.95 0.29 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 147.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN | TIME RAIN | TIME TIME TIME RAIN RAIN mm/hr | hrs mm/hr |' hrs mm/hr | hrs mm/hr hrs 0.00 | 1.667 4.32 | 3.250 9.36 | 4.83 0.083 0.72

 0.083
 0.00
 1.667
 4.32
 3.250
 9.36
 4.83
 0.72

 0.167
 0.00
 1.750
 4.32
 3.333
 5.04
 4.92
 0.72

 0.250
 0.00
 1.833
 12.24
 3.417
 5.04
 5.00
 0.72

 0.333
 0.72
 1.917
 12.24
 3.500
 5.04
 5.08
 0.72

 0.417
 0.72
 2.000
 12.24
 3.583
 5.04
 5.17
 0.72

 0.500
 0.72
 2.083
 12.24
 3.667
 5.04
 5.25
 0.72

 0.583
 0.72
 2.167
 12.24
 3.750
 5.04
 5.33
 0.72

 0.667
 0.72
 2.250
 12.24
 3.833
 2.88
 5.42
 0.72

0.833 0.7 0.917 0.7 1.000 0.7 1.083 0.7 1.167 0.7 1.250 0.7 1.333 4.3 1.417 4.3 1.500 4.3	2       2.333         2       2.417         2       2.500         2       2.583         2       2.667         2       2.750         2       2.833         32       2.917         32       3.000         32       3.083         32       3.167	9.36   9.36   9.36	4.000 4.083 4.167 4.250 4.333 4.417 4.500 4.583	2.88   2.88   2.88   2.88   2.88   1.44   1.44   1.44   1.44   1.44	5.58 5.67 5.75 5.83 5.92 6.00 6.08 6.17	0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72
Max.Eff.Inten.(mm/hr)= over (min) Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)=	5.00	2 (ii) 2 2	2.45 5.00 4.88 (ii) 5.00 0.05		ALS*	
		1 3	0.01 3.00 1.08 6.00 0.31	0. 2 32 36	275 (iii) .75 .84 .00 .91	
<pre>(i) CN PROCEDURE SELE CN* = 82.0 (ii) TIME STEP (DT) SF THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	Ia = Dep. 5 HOULD BE SMA COEFFICIEN	Storage ALLER OR T.	(Above) EQUAL			
• •	AREA QI (ha) (1					
ID1= 1 ( 0100): + ID2= 2 ( 0105):	1.10 0.0 3.24 0.1	094     2       275     2	.75 33 .75 32	.08 .84		
ID = 3 ( 0001):						
NOTE: PEAK FLOWS DO NO	T INCLUDE	BASEFLOWS	IF ANY.			

Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

		TR/	ANSFORMEI	D HYETOGR	APH		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(mm/hr)=	33.12	12.45	
over (min)	5.00	25.00	
Storage Coeff. (min)=	4.39 (ii)	24.26 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.23	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.18	0.00	0.178 (iii)
TIME TO PEAK (hrs)=	2.75	3.00	2.75
RUNOFF VOLUME (mm)=	35.00	11.08	33.08
TOTAL RAINFALL (mm)=	36.00	36.00	36.00
RUNOFF COEFFICIENT =	0.97	0.31	0.92

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 Ia = Dep. Storage (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. \_\_\_\_\_ CALIB STANDHYD ( 0300) Area (ha) = 0.52|ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha) =0.51 0.01 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m) =59.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN |' TIME RAIN TIME TIME RAIN TIME RAIN mm/hr |' hrs mm/hr hrs hrs mm/hr | hrs mm/hr 4.32 | 3.250 9.36 0.083 0.00 | 1.667 4.83 0.72 0.167 0.00 | 1.750 4.32 | 3.333 5.04 4.92 0.72 0.250 0.00 | 1.833 12.24 | 3.417 5.04 5.00 0.72 0.333 0.72 | 1.917 12.24 | 3.500 5.04 5.08 0.72 0.417 0.72 | 2.000 12.24 | 3.583 5.04 5.17 0.72 0.72 | 2.083 12.24 | 3.667 0.500 5.04 5.25 0.72 0.583 0.72 | 2.167 12.24 | 3.750 5.04 5.33 0.72 12.24 | 3.833 0.72 2.250 5.42 0.72 0.667 2.88 0.750 0.72 2.333 33.12 | 3.917 2.88 5.50 0.72 0.833 0.72 | 2.417 33.12 | 4.000 2.88 5.58 0.72 0.72 0.917 0.72 2.500 33.12 4.083 2.88 5.67 1.000 0.72 | 2.583 33.12 | 4.167 2.88 5.75 0.72 1.083 0.72 2.667 33.12 | 4.250 2.88 5.83 0.72 0.72 2.750 1.44 5.92 1.167 33.12 | 4.333 0.72 1.250 0.72 | 2.833 9.36 | 4.417 1.44 | 6.00 0.72 1.333 4.32 2.917 9.36 | 4.500 1.44 6.08 0.72 1.417 4.32 | 3.000 9.36 | 4.583 1.44 6.17 0.72 1.44 | 1.500 4.32 3.083 9.36 4.667 6.25 0.72 1.583 4.32 3.167 9.36 4.750 1.44

Max.Eff.Inten.(	mm/hr)=	33.12	14.06	
over	(min)	5.00	10.00	
Storage Coeff.	(min)=	2.90 (ii)	5.73 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	10.00	
Unit Hyd. peak	(cms)=	0.28	0.15	
				*TOTALS*
PEAK FLOW	(cms)=	0.05	0.00	0.047 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	35.00	11.08	34.52

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

TOTAL RAINFALL (mm)= 36.00 36.00 36.00 RUNOFF COEFFICIENT = 0.97 0.31 0.96 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0002) 1 + 2 = 3 AREA QPEAK TPEAK R.V. -----(ha) (cms) (hrs) (mm) ID1= 1 ( 0200): 2.08 0.178 2.75 33.08 + ID2= 2 ( 0300): 0.52 0.047 2.75 34.52 \_\_\_\_\_ ID = 3 ( 0002): 2.60 0.226 2.75 33.37 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ \_\_\_\_\_ V V I SSSSS U U A L (v 6.2.2015) I SS U U A A V V L U U AAAAA L V V I SS V V Ι SS U U A A L I SSSSS UUUUU A A LLLLL VV 000 TTTTT TTTTT H Н Ү Ү М ТΜ М 000 т н н үү MM MM O O 0 0 Т 0 0 Т Т Н Н Ү М мо 0 000 Т Т Н Н Y Μ Μ 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Input Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\d ff878e8-4977-4a34-a735-19b18fc3439f\s

Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\d ff878e8-4977-4a34-a735-19b18fc3439f\s

DATE: 02-25-2025	25-2025	-25	02	:	ΓЕ	A'	D
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TIME: 10:57:45

USER:

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

READ STORM	Filonom	o. C.)II	lconc\ coo	h076182\A	۵nD		
	FILEIIam		Local\Te		սիս		
			•	e-4916-9dl	h3-f0f6d0	9590af0\0	alf19fd
Ptotal= 47.81 mm	Comment		6H 005-H			5556416 (0	
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs		hrs	mm/hr	•	mm/hr	hrs	mm/hr
0.00		1.75	16.25	:	6.69	5.25	0.96
0.25	0.96	2.00	16.25	3.75	3.82	5.50	0.96
0.50	0.96	2.25	43.98	4.00	3.82	5.75	0.96
0.75	0.96	2.50	43.98	4.25	1.91	6.00	0.96
1.00	0.96	2.75	12.43	4.50	1.91		
1.25	5.74	3.00	12.43	4.75	0.96		
1.50	5.74	3.25	6.69	5.00	0.96		
CALIB							
STANDHYD ( 0100)		· /	1.10	<b>D</b> ' <b>C</b>	()()		
ID= 1 DT= 5.0 min	lotal im	p(%)=	92.00	Dir. Conn	.(%)= 92	2.00	
	т				<b>`</b>		
Surface Area		MPERVIO		RVIOUS (i	)		
Dep. Storage	(ha)= (mm)-	1.01 1.00		0.09 5.00			
	(mm)= (%)=	1.00		2.00			
Length		85.00		40.00			
Mannings n	=("")	0.013		40.00 0.350			
nanniings n	-	0.013		0.000			

	TRA	NSFORME	D HYETOGRA	PH	-	
TIME RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083 0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167 0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250 0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333 0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417 0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500 0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583 0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667 0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750 0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833 0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917 0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000 0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083 0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167 0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250 0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333 5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417 5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500 5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583 5.74	3.167	12.43	4.750	1.91		
<pre>Max.Eff.Inten.(mm/hr)=</pre>	43.98		23.12			
over (min)	5.00		10.00			
Storage Coeff. (min)=			7.73 (ii)			
Unit Hyd. Tpeak (min)=	5.00	(11)	10.00			
Unit Hyd. peak (cms)=	0.27		0.13			
	0.27		0.15	*T01	TALS*	
PEAK FLOW (cms)=	0.12		0.00		.129 (iii)	
TIME TO PEAK (hrs)=	2.75		2.75		2.75	
RUNOFF VOLUME (mm)=	46.81		18.59		1.55	
TOTAL RAINFALL (mm)=	47.81		47.81		7.81	
RUNOFF COEFFICIENT =	0.98		0.39		0.93	
	0.50		0133			
***** WARNING: STORAGE COEFF.	IS SMALLE	R THAN	TIME STEP!			

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0105)   ID= 1 DT= 5.0 min	Area Total	(ha)= Imp(%)=	3.24 91.00	Dir. Conn.(%)=	91.00
Surface Area Dep. Storage Average Slope Length Mannings n	(ha)= (mm)= (%)= (m)= =	IMPERVI 2.9 1.0 1.0 147.0 0.01	5 0 0 0	PERVIOUS (i) 0.29 5.00 2.00 40.00 0.350	

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	1.667	5.74	3.250	12.43	4.83	0.96	
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96	
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96	
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96	
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96	
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96	
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96	
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96	
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96	
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96	
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96	
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96	
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96	
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96	
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96	
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96	
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96	
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96	
1.583	5.74	3.167	12.43	4.750	1.91			
Max.Eff.Inten.(mr	n/hr)=	43.98		23.12				
over		5.00		10.00				
	(min)=	4.47	(ii)	9.23 (ii	)			
Unit Hyd. Tpeak	• •	5.00		10.00 `				
	(cms)=	0.23		0.12				
					*T01	TALS*		
PEAK FLOW	(cms)=	0.36		0.02	0.	.376 (iii)	)	
TIME TO PEAK	(hrs)=	2.75		2.75	2	2.75		
RUNOFF VOLUME	(mm)=	46.81		18.59	44	1.27		
TOTAL RAINFALL	(mm)=	47.81		47.81	47	7.81		
RUNOFF COEFFICIEN	NT =	0.98		0.39	6	9.93		

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0001) AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 1 + 2 = 3 -----ID1= 1 ( 0100): 1.10 0.129 2.75 44.55 + ID2= 2 ( 0105): 3.24 0.376 2.75 44.27 ID = 3 (0001): 4.34 0.504 2.75 44.34 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ CALIB STANDHYD ( 0200) | Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 -----IMPERVIOUS PERVIOUS (i) (ha)= 1.91 0.17 Surface Area (mm) = 1.00 (%) = 1.00 (m) = 118.005.00 Dep. Storage Average Slope (%)= 2.00 Length 40.00 0.013 0.350 Mannings n = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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

		110			/		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96

1.167 0.96 | 2.750 43.98 | 4.333 1.91 | 5.92 0.96 1.250 0.96 2.833 12.43 4.417 1.91 6.00 0.96 1.333 5.74 2.917 12.43 4.500 1.91 6.08 0.96 1.417 5.74 3.000 12.43 4.583 1.91 6.17 0.96 1.500 5.74 3.083 12.43 4.667 1.91 6.25 0.96 1.583 5.74 | 3.167 12.43 | 4.750 1.91 | 43.98 Max.Eff.Inten.(mm/hr)= 23.12 over (min) 5.00 10.00 Storage Coeff. (min)=3.92 (ii)8.44 (ii)Unit Hyd. Tpeak (min)=5.0010.00 Unit Hyd. peak (cms)= 0.24 0.12 \*TOTALS\* PEAK FLOW (cms)= 0.23 0.01 0.243 (iii) (hrs)= 2.75 (mm)= 46.81 (hrs)= TIME TO PEAK 2.75 2.75 18.59 RUNOFF VOLUME 44.55 47.81 (mm)= 47.81 47.81 TOTAL RAINFALL RUNOFF COEFFICIENT = 0.98 0.39 0.93 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0300)| Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 -----PERVIOUS (i) IMPERVIOUS Surface Area (ha)= 0.51 0.01 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 (m)= 59.00 = 0.013 Length 40.00 0.013 0.350 Mannings n NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYFTOGRAPH ----

		110/			AFII		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96

0.500 0.9 0.583 0.9 0.667 0.9 0.750 0.9 0.833 0.9 0.917 0.9 1.000 0.9	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	16.25       3.54         16.25       3.60         16.25       3.72         16.25       3.82         43.98       3.92         43.98       4.06         43.98       4.06         43.98       4.10	57       6.69         50       6.69         33       3.82         17       3.82         20       3.82         83       3.82         57       3.82	5.25 5.33 5.42 5.50 5.58 5.67 5.75	0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96
	6   2.667 6   2.750	43.98   4.29			0.96 0.96
1.250 0.9	6   2.833	12.43   4.43	17 1.91	6.00	0.96
1.333 5.7		12.43   4.50			0.96
1.417 5.7 1.500 5.7		12.43   4.58			0.96 0.96
	4   3.167	12.43   4.7			0.90
Max.Eff.Inten.(mm/hr)=	43.98	23.12			
over (min)	5.00	10.00			
Storage Coeff. (min)=	2.59	(ii) 5.11	(ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00			
Unit Hyd. peak (cms)=	0.29	0.16			
	0.00	0.00		TALS*	
PEAK FLOW (cms)=				0.063 (iii)	
TIME TO PEAK (hrs)= RUNOFF VOLUME (mm)=	2.75	2.75 18.59		2.75 6.24	
TOTAL RAINFALL (mm)=	46.81 47.81	47.81		7.81	
RUNOFF COEFFICIENT =				0.97	
<pre>***** WARNING: STORAGE COEFF   (i) CN PROCEDURE SELE         CN* = 82.0   (ii) TIME STEP (DT) SH         THAN THE STORAGE   (iii) PEAK FLOW DOES NO</pre>	CTED FOR PE Ia = Dep. S OULD BE SMA COEFFICIENT	RVIOUS LOSSES torage (Abov LLER OR EQUAN	S: ve) L		
ADD HYD ( 0002)					
1 + 2 = 3	AREA QP	EAK TPEAK	R.V.		
	(ha) (c	ms) (hrs)	(mm)		
+ ID2= 2 ( 0300):	0.52 0.0	432.75632.75	46.24		
ID = 3 ( 0002):		======================================			
NOTE: PEAK FLOWS DO NO	T INCLUDE B	ASEFLOWS IF	ANY.		
		==============			

V V Ι SSSSS U U A L (v 6.2.2015) V V Ι SS υυ ΑΑ L SS Ι U AAAAA L V U V V V Ι SS U UΑ A L VV Ι SSSSS UUUUU A A LLLLL 000 ΤΤΤΤΤ ΤΤΤΤΤ Η Н Ү Ү М М 000 ТΜ 0 0 Т Т Н H YY MM MM O 0 Т Т 0 0 н Н Υ М ΜO 0 Т 000 Т Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat Input Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\e c982f82-9db9-4b38-adf3-7646f3249cb8\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\e c982f82-9db9-4b38-adf3-7646f3249cb8\s DATE: 02-25-2025 TIME: 10:57:45 USER: COMMENTS: \*\* SIMULATION : AES 6H 010-Humber \*\* Filename: C:\Users\caeh076182\AppD READ STORM ata\Local\Temp\ 50c23a8d-ae9e-4916-9db3-f0f6d0590af0\25dccaf4

TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	1.75	18.94	3.50	7.80		1.11
0.25	1.11		18.94	1	4.46		1.11
0.50	1.11	2.25	51.24	4.00	4.46	5.75	1.11
0.75	1.11	2.50	51.24	4.25	2.23	6.00	1.11
1.00	1.11	2.75	14.48	4.50	2.23		
1.25	6.68	3.00	14.48	4.75	1.11		
1.50	6.68	3.25	7.80	5.00	1.11		
	lotal in	1p(%)= 9	92.00	Dir. Conn	.(%)= 9	92.00	
ID= 1 DT= 5.0 min   		1p(%)= 9 MPERVIO 1.01	JS PE	Dir. Conn RVIOUS (i 0.09	• •	92.00	
	1	MPERVIO	JS PE	RVIOUS (i	• •	92.00	
Surface Area	] (ha)= (mm)= (%)=	MPERVIO 1.01 1.00 1.00	JS PE	RVIOUS (i 0.09	• •	92.00	
Surface Area Dep. Storage	] (ha)= (mm)= (%)=	MPERVIO 1.01 1.00 1.00 85.00	JS PE	RVIOUS (i 0.09 5.00	• •	92.00	
Surface Area Dep. Storage Average Slope	] (ha)= (mm)= (%)=	MPERVIO 1.01 1.00 1.00	JS PE	RVIOUS (i 0.09 5.00 2.00	• •	92.00	
Surface Area Dep. Storage Average Slope Length Mannings n	] (ha)= (mm)= (%)= (m)=	MPERVIO 1.01 1.00 1.00 85.00 0.013	JS PE	RVIOUS (i 0.09 5.00 2.00 40.00 0.350	)		
Surface Area Dep. Storage Average Slope Length Mannings n	1 (ha)= (mm)= (%)= (m)= =	MPERVIO 1.01 1.00 1.00 85.00 0.013 RANSFORM	JS PE	RVIOUS (i 0.09 5.00 2.00 40.00 0.350	) TIME STE	P.	
Surface Area Dep. Storage Average Slope Length Mannings n	1 (ha)= (mm)= (%)= (m)= =	MPERVIO 1.01 1.00 1.00 85.00 0.013 ANSFORM	JS PE	RVIOUS (i 0.09 5.00 2.00 40.00 0.350 5.0 MIN.	) TIME STE	ΞΡ <b>.</b>	RAIN
Surface Area Dep. Storage Average Slope Length Mannings n NOTE: RAINFA	] (ha)= (mm)= (%)= (m)= = ALL WAS TF	MPERVIO 1.01 1.00 1.00 85.00 0.013 ANSFORM	JS PE	RVIOUS (i 0.09 5.00 2.00 40.00 0.350 5.0 MIN. D HYETOGR	) TIME STE APH RAIN	EP.   TIME	
Surface Area Dep. Storage Average Slope Length Mannings n NOTE: RAINFA	] (ha)= (mm)= (%)= (m)= = ALL WAS TF ALL WAS TF RAIN   mm/hr   0.00	CMPERVIOU 1.01 1.00 1.00 85.00 0.013 CANSFORMI TR/ TIME hrs 1.667	JS PE ED TO ANSFORME RAIN mm/hr 6.68	RVIOUS (i 0.09 5.00 2.00 40.00 0.350 5.0 MIN. D HYETOGR  ' TIME  ' hrs   3.250	) TIME STE APH RAIN mm/hr 14.48	EP. -   TIME   hrs 4.83	
Surface Area Dep. Storage Average Slope Length Mannings n NOTE: RAINFA TIME hrs 0.083 0.167	I (ha)= (mm)= (%)= (m)= = ALL WAS TF RAIN   mm/hr   0.00   0.00	CMPERVIOU 1.01 1.00 1.00 85.00 0.013 CANSFORMU TR/ TIME hrs 1.667 1.750	JS PE ED TO ANSFORME RAIN mm/hr 6.68 6.68	RVIOUS (i 0.09 5.00 2.00 40.00 0.350 5.0 MIN. D HYETOGR  ' TIME  ' hrs   3.250   3.333	) TIME STE APH RAIN mm/hr 14.48   7.80	EP.   TIME   hrs 4.83 4.92	mm/hr 1.11 1.11
Surface Area Dep. Storage Average Slope Length Mannings n NOTE: RAINFA TIME hrs 0.083	I (ha)= (mm)= (%)= (m)= = ALL WAS TF RAIN   mm/hr   0.00   0.00	CMPERVIOU 1.01 1.00 1.00 85.00 0.013 CANSFORM TR/ TIME hrs 1.667 1.750	JS PE ED TO ANSFORME RAIN mm/hr 6.68 6.68	RVIOUS (i 0.09 5.00 2.00 40.00 0.350 5.0 MIN. D HYETOGR  ' TIME  ' hrs   3.250	) TIME STE APH RAIN mm/hr 14.48	EP.   TIME   hrs 4.83 4.92	mm/h 1.11

		IRA	ANSFORMEL	J HYEIUGK	APH	-	
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11

1.583 6.68 3.167 14.48 4.750 2.23 Max.Eff.Inten.(mm/hr)= 51.24 29.66 over (min) 5.00 10.00 Storage Coeff. (min)= 3.03 (ii) 7.28 (ii) Unit Hyd. Tpeak (min)= 5.00 10.00 Unit Hyd. peak (cms)= 0.27 0.14 \*TOTALS\* PEAK FLOW (cms)= 0.14 0.01 0.151 (iii) ΤΙΜΕ ΤΟ ΡΕΑΚ (hrs)= 2.75 2.75 2.75 54.69 RUNOFF VOLUME (mm)= 24.14 52.24 (mm)= TOTAL RAINFALL 55.69 55.69 55.69 RUNOFF COEFFICIENT = 0.98 0.43 0.94 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  $CN^* = 82.0$ 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 ( 0105) Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.95 0.29 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 147.00 40.00 Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN |' TIME TIME RAIN | TIME RAIN | TIME RAIN mm/hr |' hrs hrs mm/hr | hrs mm/hr | hrs mm/hr 0.083 0.00 | 1.667 6.68 | 3.250 14.48 | 4.83 1.11 0.00 | 1.750 6.68 | 3.333 0.167 7.80 | 4.92 1.11 0.250 0.00 | 1.833 18.94 | 3.417 7.80 5.00 1.11 0.333 1.11 | 1.917 18.94 | 3.500 7.80 5.08 1.11 7.80 | 5.17 1.11 | 2.000 18.94 | 3.583 0.417 1.11 0.500 1.11 | 2.083 18.94 | 3.667 7.80 | 5.25 1.11 7.80 | 5.33 0.583 1.11 | 2.167 18.94 3.750 1.11 1.11 | 2.250 18.94 3.833 4.46 5.42 0.667 1.11

1.11 | 2.333

0.750

51.24 | 3.917 4.46 | 5.50

1.11

0.833 1.1	1   2.417 5	1.24   4.000	4.46	5.58 1.11
		1.24   4.083		
		1.24   4.167 1.24   4.250		
		1.24   4.333		
		4.48   4.417		
		4.48   4.500		
1.500 6.6	:	4.48   4.583 4.48   4.667		$\begin{array}{rrrr} 6.17 & 1.11 \\ 6.25 & 1.11 \end{array}$
		4.48   4.750		
Max.Eff.Inten.(mm/hr)=	51.24	29.66		
over (min)	5.00	10.00	• 、	
over (min) Storage Coeff. (min)= Unit Hyd. Tpeak (min)=	4.21 (i 5 00	i) 8.68 (i: 10.00	1)	
Unit Hyd. peak (mm)=	0.24	0.12		
			*T0T4	
PEAK FLOW (cms)= TIME TO PEAK (hrs)=				140 (iii) 75
RUNOFF VOLUME (mm)=	54.69	24.14	51.	
RUNOFF VOLUME (mm)= TOTAL RAINFALL (mm)=	55.69	55.69	55.	
RUNOFF COEFFICIENT =	0.98	0.43	0.	.93
<pre>(i) CN PROCEDURE SELEC CN* = 82.0 (ii) TIME STEP (DT) SHO THAN THE STORAGE (iii) PEAK FLOW DOES NO</pre>	Ia = Dep. Sto OULD BE SMALL COEFFICIENT.	rage (Above) ER OR EQUAL		
ADD HYD ( 0001)				
1 + 2 = 3		K TPEAK		
ID1= 1 ( 0100):		) (hrs)		
+ $ID2 = 2$ ( 0105):				
ID = 3 ( 0001):				
NOTE: PEAK FLOWS DO NO				
NOTE: FLAK I LOWS DO NO			• 	
CALIB				
STANDHYD ( 0200)  Area  ID= 1 DT= 5.0 min   Total			n.(%)= 92	2.00
	IMPERVIOUS	PERVIOUS (	1)	

Surface Area	(ha)=	1.91	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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

		TR/	ANSFORMEI	D HYETOGR	APH		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

<pre>Max.Eff.Inten.(mm/hr)=</pre>	51.24	29.66	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.69 (ii)	7.93 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.25	0.13	
			*TOTALS*
PEAK FLOW (cms)=	0.27	0.01	0.284 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	54.69	24.14	52.24
TOTAL RAINFALL (mm)=	55.69	55.69	55.69
RUNOFF COEFFICIENT =	0.98	0.43	0.94

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 Ia = Dep. Storage (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. \_\_\_\_\_ CALIB STANDHYD ( 0300) Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.51 0.01 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 59.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN | ' TIME TIME RAIN | TIME RAIN TIME RAIN mm/hr |' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 6.68 | 3.250 14.48 | 0.083 0.00 1.667 4.83 1.11 0.167 0.00 | 1.750 6.68 | 3.333 7.80 4.92 1.11 0.250 0.00 | 1.833 18.94 | 3.417 7.80 5.00 1.11 7.80 | 0.333 1.11 | 1.917 18.94 | 3.500 5.08 1.11 0.417 1.11 | 2.000 18.94 | 3.583 7.80 5.17 1.11 1.11 | 2.083 18.94 | 3.667 0.500 7.80 5.25 1.11 0.583 1.11 | 2.167 18.94 | 3.750 7.80 5.33 1.11 1.11 | 2.250 18.94 | 3.833 4.46 5.42 1.11 0.667 0.750 1.11 | 2.333 51.24 | 3.917 4.46 5.50 1.11 0.833 1.11 | 2.417 51.24 | 4.000 4.46 5.58 1.11 0.917 1.11 | 2.500 51.24 4.083 4.46 5.67 1.11 1.000 1.11 | 2.583 51.24 | 4.167 4.46 5.75 1.11 51.24 | 4.250 1.083 1.11 | 2.667 4.46 5.83 1.11

Max.Eff.Inten.(	mm/hr)=	51.24	29.66	
over	(min)	5.00	5.00	
Storage Coeff.	(min)=	2.43 (ii)	4.81 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	5.00	
Unit Hyd. peak	(cms)=	0.30	0.22	
				*TOTALS*
PEAK FLOW	(cms)=	0.07	0.00	0.073 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	54.69	24.14	54.08

1.11 | 2.750

1.11 | 2.833

6.68 2.917

6.68 3.000

6.68 3.083

6.68 3.167

1.167

1.250

1.333

1.417

1.500

1.583

51.24 | 4.333

14.48 | 4.417

14.48 | 4.500

14.48 | 4.583

14.48 4.667

14.48 4.750

2.23 5.92

2.23 6.00

6.08

6.17

6.25

2.23

2.23

2.23

2.23

1.11

1.11

1.11

1.11

1.11

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

 
 TOTAL RAINFALL (mm)=
 55.69
 55.69

 RUNOFF COEFFICIENT =
 0.98
 0.43
 55.69 0.97 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0002) | 1 + 2 = 3 | AREA QPEAK TPEAK R.V. -----(ha) (cms) (hrs) (mm) 2.75 52.24 2.08 0.284 ID1= 1 ( 0200): + ID2= 2 ( 0300): 0.52 0.073 2.75 54.08 \_\_\_\_\_ ID = 3 ( 0002): 2.60 0.358 2.75 52.61 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ FINISH \_\_\_\_\_ \_\_\_\_\_ (v 6.2.2015) V V I SSSSS U U A L U U A A V I SS V L U U AAAAA L V V I SS V V Ι SS U UAAL VV I SSSSS UUUUU A A LLLLL 000 TTTTT TTTTT H НҮҮМ М 000 ТΜ 0 0 T т н н үү мм мм о о 0 0 ΗY ММО Т Т Н 0 000 Т Т Н Н Y М 000 М Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved.

\*\*\*\*\* DETAILED OUTPUT \*\*\*\*\*

Input	filename:	C:\Program	Files	(x86)\Vis	ual OTTHY	MO 6.2\V	02\voin.d	lat
C:\Users\ 86b2198-c Summary C:\Users\	4fa-4690-a9 filename:	da-e173588 AppData\Lo	a5cef\s cal\Civ	s /ica\VH5\1				d95a469d5d\a d95a469d5d\a
DATE: 02-	25-2025			TIM	E: 10:57:	45		
USER:								
COMMENTS:								
** SIMU ******   READ   	**************************************	S 6H_025-H ********* Filena	umber ******* me: C:` ata 500	<pre>********** \Users\cae a\Local\Te c23a8d-ae9</pre>	** **** h076182\A mp\ e-4916-9d		0590af0\6	5ec422e5
Ptotal=	0.7 1.0 1.2	E RAIN s mm/hr 0 0.00 5 1.31 0 1.31	TIM   hrs   1.7   2.00   2.2   2.50   2.7   3.00	s       mm/hr         5       22.30         6       22.30         5       60.35         6       35         6       17.06         7       17.06	' TIME  ' hrs   3.50   3.75   4.00   4.25   4.50   4.75	9.18   5.25   5.25   2.62   2.62   1.31	hrs 5.25 5.50 5.75	1.31 1.31 1.31
	 D ( 0100)  = 5.0 min	Total I	mp(%)=				2.00	

Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

		TR/	ANSFORME	O HYETOGR	APH		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/h	r)= 60.35	38.26	
over (mi	n) 5.00	10.00	
Storage Coeff. (mi	n)= 2.84	(ii) 6.82	(ii)
Unit Hyd. Tpeak (mi	n)= 5.00	10.00	
Unit Hyd. peak (cm	s)= 0.28	0.14	
			*TOTALS*
PEAK FLOW (cm	s)= 0.17	0.01	0.178 (iii)
TIME TO PEAK (hr	s)= 2.75	2.75	2.75
RUNOFF VOLUME (m	m)= 64.59	31.55	61.94
TOTAL RAINFALL (m	m)= 65.59	65.59	65.59
RUNOFF COEFFICIENT	= 0.98	0.48	0.94

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0105) Area (ha) = 3.24|ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00 -----PERVIOUS (i) IMPERVIOUS Surface Area (ha)= 2.95 0.29 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 147.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN |' TIME TIME RAIN | TIME RAIN TIME RAIN mm/hr |' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 7.87 | 3.250 17.06 | 0.083 0.00 1.667 4.83 1.31 0.167 0.00 | 1.750 7.87 | 3.333 9.18 4.92 1.31 0.250 0.00 | 1.833 22.30 | 3.417 9.18 5.00 1.31 0.333 1.31 | 1.917 22.30 | 3.500 9.18 | 5.08 1.31 0.417 1.31 | 2.000 22.30 3.583 9.18 5.17 1.31 1.31 | 2.083 22.30 | 3.667 0.500 9.18 5.25 1.31 0.583 1.31 | 2.167 22.30 | 3.750 9.18 | 5.33 1.31 22.30 | 3.833 1.31 | 2.250 5.25 5.42 1.31 0.667 0.750 1.31 2.333 60.35 | 3.917 5.25 5.50 1.31 0.833 1.31 2.417 60.35 | 4.000 5.25 5.58 1.31 0.917 1.31 2.500 60.35 | 4.083 5.25 5.67 1.31 1.000 1.31 | 2.583 60.35 | 4.167 5.25 5.75 1.31 1.083 1.31 | 2.667 60.35 | 4.250 5.25 5.83 1.31 1.31 | 2.750 2.62 5.92 1.31 1.167 60.35 | 4.333 1.250 1.31 | 2.833 17.06 | 4.417 2.62 6.00 1.31 1.333 7.87 2.917 17.06 | 4.500 2.62 6.08 1.31 1.417 7.87 3.000 17.06 | 4.583 2.62 6.17 1.31 2.62 | 6.25 1.500 7.87 3.083 17.06 4.667 1.31 7.87 | 3.167 1.583 17.06 | 4.750 2.62 Max.Eff.Inten.(mm/hr)= 60.35 38.26 5.00 10.00 3.94 (ii) 8.13 (ii) over (min) Storage Coeff. (min)= Unit Hyd. Tpeak (min)= 5.00 10.00

(cms)=	0.24	0.13	
			*TOTALS*
(cms)=	0.49	0.03	0.522 (iii)
(hrs)=	2.75	2.75	2.75
(mm)=	64.59	31.55	61.62
	(cms)= (hrs)=	(cms)= 0.49 (hrs)= 2.75	(cms)= 0.49 0.03 (hrs)= 2.75 2.75

TOTAL RAINFALL (mm)=65.5965.5965.59RUNOFF COEFFICIENT =0.980.480.94 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0001) | 1 + 2 = 3 | AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 1.10 0.178 2.75 61.94 (mm) ID1= 1 ( 0100): + ID2 = 2 (0105): 3.24 0.522 2.75 61.62\_\_\_\_\_ ID = 3 (0001): 4.34 0.700 2.75 61.70 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ | CALIB STANDHYD ( 0200) Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 -----IMPERVIOUS PERVIOUS (i) (ha)= 1.91 Surface Area 0.17 

 Dep. Storage
 (mm)=
 1.00

 Average Slope
 (%)=
 1.00

 Length
 (m)=
 118.00

 Mannings n
 =
 0.013

 5.00 2.00 40.00 0.350 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 | 1.667 7.87 | 3.250 17.06 | 4.83 1.31 0.167 0.00 | 1.750 7.87 | 3.333 9.18 | 4.92 1.31 0.250 0.00 | 1.833 22.30 | 3.417 9.18 | 5.00 1.31 0.333 1.31 | 1.917 22.30 | 3.500 9.18 | 5.08 1.31 0.417 1.31 2.000 22.30 3.583 9.18 5.17 1.31 0.500 1.31 | 2.083 22.30 | 3.667 9.18 | 5.25 1.31

0.5831.312.16722.303.7509.185.331.310.6671.312.25022.303.8335.255.421.31

1.16 1.25 1.33 1.41 1.56	3       1.31         .7       1.31         .0       1.31         .3       1.31         .3       1.31         .7       1.31         .7       1.31         .7       7.87         .9       7.87         .9       7.87	3.000	60.35 60.35 60.35 60.35 17.06 17.06 17.06 17.06	3.917   4.000   4.083   4.167   4.250   4.333   4.417   4.500   4.583   4.667   4.750	5.25   5.25   5.25   2.62   2.62   2.62   2.62   2.62   2.62	5.58 5.67 5.75 5.83 5.92 6.00 6.08 6.17 6.25	1.31 1.31
Storage Coeff. Unit Hvd. Tpeak	(min) (min)= (min)=	5.00 3.45 5.00	(ii)	10.00 7.43 (ii) 10.00	I		
Unit Hyd. peak	(cms)=	0.26		0.13			
	<i>·</i> · · ·					ALS*	
PEAK FLOW						337 (iii)	
TIME TO PEAK RUNOFF VOLUME	(nrs)= (mm)=			2.75 31.55			
TOTAL RAINFALL	• •				65		
RUNOFF COEFFICI	• •	0.98		0.48		).94	
		0.90		0.40			
***** WARNING: STORA (i) CN PROCED CN* = (ii) TIME STEP THAN THE (iii) PEAK FLOW	DURE SELECT 82.0 Ia (DT) SHOU STORAGE CC	ED FOR PE = Dep. S ULD BE SMA DEFFICIENT	RVIOUS torage LLER OF	LOSSES: (Above) R EQUAL			
CALIB     STANDHYD ( 0300)   ID= 1 DT= 5.0 min		(ha)= Emp(%)= 9	0.52 8.00	Dir. Conn.	(%)= 9	98.00	
		IMPERVIOU	IS PF	RVIOUS (i)	1		
Surface Area	(ha)=	0.51		0.01			
Dep. Storage	(mm)=	1.00		5.00			
Average Slope	(%)=	1.00		2.00			
Length	(m)=	59.00		40.00			
Mannings n	=	0.013		0.350			
NOTE: RAIN	IFALL WAS T	RANSFORME	D TO	5.0 MIN. 1	IME STE	P.	
		TPA	NSEORME	D HYETOGRA	DH		
ТТМ							σλτΝ

TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
1.0831.312.66760.354.2505.255.831.311.1671.312.75060.354.3332.625.921.311.2501.312.83317.064.4172.626.001.311.3337.872.91717.064.5002.626.081.311.4177.873.00017.064.5832.626.171.311.5007.873.08317.064.6672.626.251.31	0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.1671.312.75060.354.3332.625.921.311.2501.312.83317.064.4172.626.001.311.3337.872.91717.064.5002.626.081.311.4177.873.00017.064.5832.626.171.311.5007.873.08317.064.6672.626.251.31	1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.2501.312.83317.064.4172.626.001.311.3337.872.91717.064.5002.626.081.311.4177.873.00017.064.5832.626.171.311.5007.873.08317.064.6672.626.251.31	1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.3337.872.91717.064.5002.626.081.311.4177.873.00017.064.5832.626.171.311.5007.873.08317.064.6672.626.251.31	1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.4177.873.00017.064.5832.626.171.311.5007.873.08317.064.6672.626.251.31	1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.500 7.87 3.083 17.06 4.667 2.62 6.25 1.31	1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
	1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.583 7.87   3.167 17.06   4.750 2.62	1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
	1.583	7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)	= 60.35	38.26	
over (min)	5.00	5.00	
Storage Coeff. (min)	= 2.28	(ii) 4.51	(ii)
Unit Hyd. Tpeak (min)	= 5.00	5.00	
Unit Hyd. peak (cms)	= 0.30	0.23	
			*TOTALS*
PEAK FLOW (cms)	= 0.09	0.00	0.087 (iii)
TIME TO PEAK (hrs)	= 2.75	2.75	2.75
RUNOFF VOLUME (mm)	= 64.59	31.55	63.93
TOTAL RAINFALL (mm)	= 65.59	65.59	65.59
RUNOFF COEFFICIENT	= 0.98	0.48	0.97

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

2.08

0.52

\_\_\_\_\_

ID1= 1 ( 0200):

+ ID2= 2 ( 0300):

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0002)| | 1 + 2 = 3 | AREA QPEAK TPEAK R.V. -----(ha) (cms) (hrs) (mm)

0.337

0.087

2.75

2.75

61.95

63.93

ID = 3 ( 0002): 2.60 0.423 2.75 62.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ V V SSSSS U U Α (v 6.2.2015) Ι L V V Ι SS U U ΑΑ L Ι V V SS U U AAAAA L V V Ι SS U UΑ A L Ι SSSSS UUUUU A VV A LLLLL 000 ΤΤΤΤΤ ΤΤΤΤΤ Η НҮҮМ 000 ТΜ М 0 0 Т Т Н H YY MM MM O 0 0 0 Т Т н н Υ М ΜO 0 000 Т Т Н н Y Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\e 7212107-03ff-4c82-adb2-55ddd52f22c7\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\e 7212107-03ff-4c82-adb2-55ddd52f22c7\s DATE: 02-25-2025 TIME: 10:57:45 USER: COMMENTS: \_\_\_\_\_ -----\*\*\*\*\*\*\* \*\* \*\* SIMULATION : AES 6H 050-Humber 

-----READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\ 50c23a8d-ae9e-4916-9db3-f0f6d0590af0\c2571f5b Ptotal= 73.00 mm Comments: AES 6H 050-Humber TIME TIME RAIN | RAIN |' TIME RAIN TIME RAIN mm/hr |' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 0.00 0.00 | 1.75 24.82 3.50 10.22 5.25 1.46 5.50 1.46 0.25 1.46 | 2.00 24.82 | 3.75 5.84 | 0.50 1.46 2.25 67.16 4.00 5.84 5.75 1.46 1.46 | 2.50 67.16 | 4.25 2.92 | 6.00 1.46 0.75 1.00 1.46 2.75 18.98 4.50 2.92 1.25 8.76 3.00 18.98 4.75 1.46 1.50 8.76 | 3.25 10.22 | 5.00 1.46 \_\_\_\_\_ CALIB STANDHYD ( 0100) Area (ha) = 1.10|ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 ------IMPERVIOUS PERVIOUS (i) Surface Area 0.09 (ha) =1.01 5.00 Dep. Storage (mm)= 1.00 Average Slope (%)= 2.00 1.00 Length 40.00 (m) =85.00 Mannings n 0.013 0.350 = 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	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46

1.167 1.46 | 2.750 67.16 | 4.333 2.92 | 5.92 1.46 1.250 1.46 | 2.833 18.98 | 4.417 2.92 | 6.00 1.46 1.333 8.76 2.917 18.98 4.500 2.92 6.08 1.46 1.417 8.76 | 3.000 18.98 | 4.583 2.92 | 6.17 1.46 1.5008.763.08318.984.6672.926.251.461.5838.763.16718.984.7502.921 67.16 Max.Eff.Inten.(mm/hr)= 44.89 over (min) 5.00 10.00 Storage Coeff. (min)=2.72 (ii)6.53 (ii)Unit Hyd. Tpeak (min)=5.0010.00 Unit Hyd. peak (cms)= 0.29 0.14 \*TOTALS\* PEAK FLOW (cms)= 0.19 0.01 0.199 (iii) TIME TO PEAK(hrs)=2.75RUNOFF VOLUME(mm)=72.00TOTAL RAINFALL(mm)=73.00RUNOFF COEFFICIENT=0.99 2.75 2.75 37.36 69.23 73.00 73.00 0.51 0.95 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0105)| Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.95 0.29 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= (%) = 1.00(m) = 147.00 2.00 Length 40.00 0.013 0.350 = Mannings n 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	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46

0.417 1	.46   2.000	24.82   3.583	10.22	5.17	1.46
	.46 2.083	24.82   3.667			
0.583 1	.46   2.167	24.82   3.750	10.22	5.33	1.46
	.46   2.250	24.82   3.833			
		67.16   3.917			
	.46 2.417	67.16   4.000	5.84		
		67.16   4.083			
		67.16   4.167			
		67.16   4.250			
		67.16   4.333			
	.46   2.833	18.98   4.417		6.00	
1.333 8		18.98   4.500			
1.41/ 8	.76   3.000	18.98   4.583 18.98   4.667	2.92		1.46
1.583 8	.76   3.167	18.98   4.750	2.92	0,25	1.46
1.303 0	./0   5.10/	10.90   4.750	2.92		
Max.Eff.Inten.(mm/hr)	= 67.16	44.89			
over (min)	5.00	10.00			
Storage Coeff. (min)	= 3.77 (	ii) 7.79 (i	i)		
Unit Hyd. Tpeak (min)	= 5.00	10.00			
Unit Hyd. peak (cms)	= 0.25	0.13			
				TALS*	
		0.03		.583 (iii	)
TIME TO PEAK (hrs)				2.75	
		37.36			
		73.00		3.00	
RUNOFF COEFFICIENT	= 0.99	0.51	6	9.94	
***** WARNING: STORAGE COE	FF. IS SMALLER	THAN TIME STE	P!		
(i) CN PROCEDURE SE	LECTED FOR PER	VIOUS LOSSES:			
$CN^* = 82.0$		orage (Above)			
(ii) TIME STEP (DT)		• • •			
THAN THE STORAG					
(iii) PEAK FLOW DOES					
ADD HYD ( 0001)			D 1/		
1 + 2 = 3	AREA QPE	AK TPEAK	R.V.		
	(na) (cm	is) (hrs)	(mm)		
ID1= 1 ( 0100):					
+ ID2= 2 ( 0105):		2.75			
ID = 3 ( 0001):					
NOTE: PEAK FLOWS DO	NOT INCLUDE BA	SEFLOWS IF ANY	<b>′</b> •		

CALIB     STANDHYD ( 0200)   ID= 1 DT= 5.0 min	Area Total	(ha)= 2.0 Imp(%)= 92.0		92.00
Surface Area Dep. Storage Average Slope Length Mannings n	(ha)= (mm)= (%)= (m)= =	IMPERVIOUS 1.91 1.00 1.00 118.00 0.013	PERVIOUS (i) 0.17 5.00 2.00 40.00 0.350	

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

			TRAI	NSFORME	ED H	YETOGR	APH	•			
Т	IME	RAIN	TIME	RAIN	'	TIME	RAIN		TIME		RAIN
	hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr		hrs	m	m/hr
0.	083	0.00	1.667	8.76	3	.250	18.98	2	4.83	1	.46
0.	167	0.00	1.750	8.76	3	.333	10.22	2	1.92	1	.46
0.	250	0.00	1.833	24.82	3	.417	10.22	5	5.00	1	.46
0.	333	1.46	1.917	24.82	3	.500	10.22	5	5.08	1	.46
0.	417	1.46	2.000	24.82	3	.583	10.22	5	5.17	1	.46
0.	500	1.46	2.083	24.82	3	.667	10.22	5	5.25	1	.46
0.	583	1.46	2.167	24.82	3	.750	10.22	5	5.33	1	.46
0.	667	1.46	2.250	24.82	3	.833	5.84	5	5.42	1	.46
0.	750	1.46	2.333	67.16	3	.917	5.84	5	5.50	1	.46
0.	833	1.46	2.417	67.16	4	.000	5.84	5	5.58	1	.46
0.	917	1.46	2.500	67.16	4	.083	5.84	5	5.67	1	.46
1.	000	1.46	2.583	67.16	4	.167	5.84	5	5.75	1	.46
1.	083	1.46	2.667	67.16	4	.250	5.84	5	5.83	1	.46
1.	167	1.46	2.750	67.16	4	.333	2.92	5	5.92	1	.46
1.	250	1.46	2.833	18.98	4	.417	2.92	6	5.00	1	.46
1.	333	8.76	2.917	18.98	4	.500	2.92	6	5.08	1	.46
1.	417	8.76	3.000	18.98	4	.583	2.92	6	5.17	1	.46
1.	500	8.76	3.083	18.98	4	.667	2.92	6	5.25	1	.46
1.	583	8.76	3.167	18.98	4	.750	2.92				
	.(mm/h	•	67.16		44.8	39					
ov	er (mi	n)	5.00		10.0	90					

Max.Eff.Inten.(mm/	hr)= 6	57.16	44.89	
over (m	in)	5.00	10.00	
Storage Coeff. (m	in)=	3.31 (ii)	7.12 (ii)	
Unit Hyd. Tpeak (m	in)=	5.00	10.00	
Unit Hyd. peak (c	ms)=	0.26	0.14	
				*TOTALS*
PEAK FLOW (c	:ms)=	0.36	0.02	0.376 (iii)
TIME TO PEAK (h	irs)=	2.75	2.75	2.75
RUNOFF VOLUME (	mm) = 7	72.00	37.36	69.23
TOTAL RAINFALL (	mm) = 7	73.00	73.00	73.00
RUNOFF COEFFICIENT	=	0.99	0.51	0.95

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0300) Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 -----IMPERVIOUS PERVIOUS (i) Surface Area(ha)=0.51Dep. Storage(mm)=1.00 0.01 5.00 
 Average Slope
 (%)=
 1.00

 Length
 (m)=
 59.00

 Mannings n
 =
 0.013
 2.00 40.00 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

		110					
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		
Max.Eff.Inten.(mn	n/hr)=	67.16		44.89			
over (	•	5.00		5.00			
Storage Coeff. (	• •			4.32 (ii	)		
Unit Hyd. Tpeak (	• •	5.00	• •	5.00	/		
<b>,</b> , , , , , , , , , , , , , , , , , ,	· ·						

Unit Hyd. peak (cms)= 0.23 0.31 \*TOTALS\* PEAK FLOW (cms) =0.10 0.00 0.096 (iii) TIME TO PEAK (hrs)= 2.75 2.75 2.75 RUNOFF VOLUME (mm) =72.00 37.36 71.31 TOTAL RAINFALL (mm) =73.00 73.00 73.00 RUNOFF COEFFICIENT = 0.51 0.98 0.99 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0002) 1 + 2 = 3 AREA QPEAK TPEAK R.V. -----(cms) (ha) (hrs) (mm) ID1= 1 ( 0200): 2.08 0.376 2.75 69.23 + ID2= 2 ( 0300): 0.52 0.096 2.75 71.31 ID = 3 (0002):2.60 0.472 2.75 69.64 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_ (v 6.2.2015) V V Ι SSSSS U U A L V Ι SS U A A V U L I SS U U AAAAA L V V V V Ι SS U UΑ A L VV I SSSSS UUUUU A A LLLLL 000 ΤΤΤΤΤ ΤΤΤΤΤ Η H Y Y M М 000 ТΜ 0 0 Т Т Н Н ҮҮ MM MM O 0 Т Т 0 0 Н н Υ М ΜO 0 000 Т Т Н Н Υ 000 Μ М Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved.

\*\*\*\*\* DETAILED OUTPUT \*\*\*\*\*

Input	filename:	C:\Program	n Files	(x86)\Vis	ual OTTHY	′MO 6.2\\	/02\voin.d	dat
C:\Users\ 9d25f3e-2 Summary C:\Users\	26a-4aec-90 filename:	∂5d-8f378af \AppData\Lc	F5802c\	s vica\VH5\1				d95a469d5d\8 d95a469d5d\8
DATE: 02-	25-2025			TIM	1E: 10:57:	45		
USER:								
COMMENTS:								
** SIMU ******	********** LATION : AI ***********	ES 6H_100-F ***********	******* Humber ******* ame: C: at.	********** ********** \Users\cae a\Local\Te	** **** 2h076182\A 2mp\			
   Ptotal=	80.31 mm	   Commer		c23a8d-ae9 S 6H_100-H		103-10160	10590a+0\2	46578424
	0.0 0.1 0.1 1.0 1.1	rs mm/hr 00 0.00 25 1.61 50 1.61	hr: 1.7 2.0 2.2 2.5 2.5 2.7 3.0	s mm/hr 5 27.30 0 27.30 5 73.88 0 73.88 5 20.88 0 20.88	' hrs   3.50   3.75   4.00   4.25   4.50   4.75	11.24   6.42   6.42   3.21   3.21   1.61	hrs 5.25 5.50	1.61
	D ( 0100) = 5.0 min				Dir. Conr	n.(%)= 9	92.00	
			IMPERV	IOUS PE	RVIOUS (i	)		

Surface Area	(ha)=	1.01	0.09
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	85.00	40.00
Mannings n	=	0.013	0.350

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

		TR	ANSFORME	D HYETOGR	APH	-	
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)= over (min)	73.88 5.00	51.56 10.00	
Storage Coeff. (min)=	2.62 (ii)	6.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.15	
			*TOTALS*
PEAK FLOW (cms)=	0.21	0.01	0.219 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	79.31	43.27	76.42
TOTAL RAINFALL (mm)=	80.31	80.31	80.31
RUNOFF COEFFICIENT =	0.99	0.54	0.95

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 Ia = Dep. Storage (Above)
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

|ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha) =2.95 0.29 Dep. Storage (mm) =1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m) =147.00 40.00 Mannings n 0.013 0.350 =

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

---- TRANSFORMED HYETOGRAPH ----TIME RAIN TIME RAIN |' TIME RAIN | TIME RAIN mm/hr |' hrs mm/hr hrs hrs mm/hr | hrs mm/hr 9.64 | 3.250 20.88 0.083 0.00 | 1.667 4.83 1.61 0.167 0.00 | 1.750 9.64 | 3.333 11.24 4.92 1.61 27.30 | 3.417 0.250 0.00 | 1.833 11.24 | 5.00 1.61 0.333 1.61 | 1.917 27.30 | 3.500 11.24 | 5.08 1.61 0.417 1.61 | 2.000 27.30 | 3.583 11.24 5.17 1.61 1.61 | 2.083 27.30 | 3.667 0.500 11.24 5.25 1.61 0.583 1.61 2.167 27.30 3.750 11.24 5.33 1.61 1.61 2.250 27.30 3.833 6.42 5.42 0.667 1.61 0.750 1.61 2.333 73.88 | 3.917 6.42 5.50 1.61 0.833 1.61 2.417 73.88 4.000 6.42 5.58 1.61 0.917 1.61 2.500 73.88 4.083 6.42 5.67 1.61 1.000 1.61 | 2.583 73.88 | 4.167 6.42 5.75 1.61 1.083 1.61 | 2.667 73.88 | 4.250 6.42 5.83 1.61 73.88 | 4.333 3.21 5.92 1.167 1.61 | 2.750 1.61 1.250 1.61 | 2.833 20.88 | 4.417 3.21 | 6.00 1.61 1.333 9.64 2.917 20.88 4.500 3.21 6.08 1.61 1.417 9.64 3.000 20.88 4.583 3.21 6.17 1.61 1.500 9.64 3.083 20.88 4.667 3.21 6.25 1.61 1.583 9.64 3.167 20.88 4.750 3.21

Max.Eff.Inten.( over	mm/hr)= (min)	73.88 5.00	51.56 10.00	
Storage Coeff.	(min)=	3.63 (ii)	7.50 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	10.00	
Unit Hyd. peak	(cms)=	0.25	0.13	
				*TOTALS*
PEAK FLOW	(cms)=	0.60	0.04	0.643 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	79.31	43.27	76.07

TOTAL RAINFALL (mm)=80.3180.31RUNOFF COEFFICIENT =0.990.54 80.31 0.95 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0001) | 1 + 2 = 3 | AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 1.10 0.219 2.75 76.42 (mm) ID1= 1 ( 0100): + ID2= 2 ( 0105): 3.24 0.643 2.75 76.07 \_\_\_\_\_ ID = 3 (0001): 4.34 0.862 2.75 76.16 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ | CALIB STANDHYD ( 0200) Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 -----IMPERVIOUS PERVIOUS (i) (ha)= 1.91 Surface Area 0.17 

 Dep. Storage
 (mm)=
 1.00

 Average Slope
 (%)=
 1.00

 Length
 (m)=
 118.00

 Mannings n
 =
 0.013

 5.00 2.00 40.00 0.350 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 0.0830.001.6679.643.25020.884.831.610.1670.001.7509.643.33311.244.921.61 0.250 0.00 | 1.833 27.30 | 3.417 11.24 | 5.00 1.61 0.333 1.61 | 1.917 27.30 | 3.500 11.24 | 5.08 1.61 0.417 1.61 2.000 27.30 3.583 11.24 5.17 1.61 0.500 1.61 | 2.083 27.30 | 3.667 11.24 | 5.25 1.61

0.5831.612.16727.303.75011.245.331.610.6671.612.25027.303.8336.425.421.61

1.25 1.33 1.41 1.50	3       1.61         7       1.61         0       1.61         3       1.61         7       1.61         0       1.61         3       9.64         7       9.64         0       9.64	3.000	73.88 73.88 73.88 73.88 73.88 20.88 20.88 20.88 20.88 20.88	3.917   4.000   4.083   4.167   4.250   4.333   4.417   4.500   4.583   4.667   4.750	6.42   6.42   6.42   3.21   3.21   3.21   3.21   3.21   3.21	5.58 5.67 5.75 5.83 5.92 6.00 6.08 6.17 6.25	1.61 1.61
Storage Coeff. Unit Hyd. Tpeak	(min) (min)= (min)=	5.00 3.18 5.00	(ii)	10.00 6.85 (ii) 10.00			
Unit Hyd. peak	(CIIIS)=	0.27		0.14	*тот	ALS*	
PEAK FLOW	(cms) =	0 39		0 02		415 (iii)	
TIME TO PEAK						• •	
RUNOFF VOLUME				43.27			
TOTAL RAINFALL	• •					.31	
RUNOFF COEFFICI	• •	0.99		0.54	e	.95	
<pre>***** WARNING: STORA   (i) CN PROCED       CN* =    (ii) TIME STEP       THAN THE   (iii) PEAK FLOW</pre>	URE SELECT 82.0 Ia (DT) SHOU STORAGE CO	ED FOR PE = Dep. S LD BE SMA EFFICIENT	RVIOUS Storage ALLER OR	LOSSES: (Above) EQUAL			
CALIB     STANDHYD ( 0300)   ID= 1 DT= 5.0 min		• •	0.52 8.00	Dir. Conn.	(%)= 9	08.00	
·		IMPERVIOU	IS PE	RVIOUS (i)			
Surface Area	(ha)=	0.51		0.01			
Dep. Storage	(mm)=	1.00		5.00			
Average Slope	(%)=	1.00		2.00			
Length	(m)=	59.00		40.00			
Mannings n	=	0.013		0.350			
NOTE: RAIN	FALL WAS T	RANSFORME	D TO	5.0 MIN. T	IME STE	P.	
					рц		
ттм				D HYETOGRA			ΡΛΤΝ

TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm	n/hr)=	73.88	51.56	
over (	(min)	5.00	5.00	
Storage Coeff. (	(min)=	2.10 (ii)	4.16 (ii)	
Unit Hyd. Tpeak (	(min)=	5.00	5.00	
Unit Hyd. peak (	(cms)=	0.31	0.24	
				*TOTALS*
PEAK FLOW (	(cms)=	0.10	0.00	0.106 (iii)
TIME TO PEAK (	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	79.31	43.27	78.59
TOTAL RAINFALL	(mm)=	80.31	80.31	80.31
RUNOFF COEFFICIEN	NT =	0.99	0.54	0.98

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

ID1= 1 ( 0200):

+ ID2= 2 ( 0300):

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0002)| | 1 + 2 = 3 | AREA QPEAK TPEAK R.V. -----(ha) (cms) (hrs) (mm)

0.415

0.106

2.75

2.75

76.43

78.59

2.08

0.52

\_\_\_\_\_

ID = 3 ( 0002): 2.60 0.521 2.75 76.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Vaughan Metropolitan Centre Schedule 'C' Class Environmental Assessment (EA) Studies for the Extensions of Interchange Way and Millway Avenue



## Appendix D: SWM- Model Outputs



\_\_\_\_\_\_ SSSSS U U A L V V Ι (v 6.2.2015) V I U U A A V SS L SS V V U U AAAAA L Ι V V Ι SS U U A A L Т VV SSSSS UUUUU A A LLLLL ΤΤΤΤΤ ΤΤΤΤΤ Η 000 H Y Y M 000 ТΜ М 0 0 Т Т н Н ΥY MM MM 0 0 0 0 Т Т н Н Y М ΜO 0 Т Т 000 Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\5 2f9b225-757d-4268-8080-f296481aac0e\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\5 2f9b225-757d-4268-8080-f296481aac0e\s DATE: 05-06-2025 TIME: 09:58:06 USER: COMMENTS: -----\*\* \*\* SIMULATION : AES 6H\_002-Humber -----READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\

   Ptotal= 36.00 mm	ac Comments: AE			fb-46e264ee758f	\c9df40cc
TIME hrs 0.00 0.25 0.50 0.75 1.00 1.25 1.50	!	s mm/hr 5 12.24 9 12.24 5 33.12 9 33.12	3.50 3.75 4.00 4.25 4.50 4.75	2.88   5.50 2.88   5.75 1.44   6.00 1.44   0.72	mm/hr 0.72 0.72 0.72
CALIB   STANDHYD ( 0007)   ID= 1 DT= 5.0 min	Area (ha)= Total Imp(%)=		Dir. Conn	.(%)= 92.00	
		91 90 90 90 4	RVIOUS (i) 0.09 5.00 2.00 40.00 0.350	)	
NOTE: RAINFA	LL WAS TRANSFO	RMED TO	5.0 MIN. 1	TIME STEP.	

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

		TRA	ANSFORME	) HYETOGRA	APH		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72

1.500 4.32 3.083 9.36 4.667 1.44 6.25 0.72 4.32 | 3.167 9.36 | 4.750 1.44 | 1.583 Max.Eff.Inten.(mm/hr)= 33.12 12.45 over (min) 5.00 25.00 3.61 (ii) 23.48 (ii) 5.00 25.00 Storage Coeff. (min)= Unit Hyd. Tpeak (min)= Unit Hyd. peak (cms)= 0.25 0.05 \*TOTALS\* PEAK FLOW (cms)= 0.09 0.00 0.094 (iii) 2.75 TIME TO PEAK (hrs)= 3.00 2.75 RUNOFF VOLUME (mm)= 35.00 11.08 33.08 36.00 36.00 TOTAL RAINFALL (mm)= 36.00 RUNOFF COEFFICIENT = 0.97 0.92 0.31 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0008) | Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.95 0.29 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 147.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN | TIME RAIN | TIME TIME TIME RAIN RAIN mm/hr | hrs mm/hr |' hrs mm/hr | hrs mm/hr hrs 0.00 | 1.667 4.32 | 3.250 9.36 | 4.83 0.083 0.72 0.167 0.00 | 1.750 4.32 | 3.333 5.04 | 4.92 0.72

0.250 0.00 | 1.833 12.24 | 3.417 5.04 | 5.00

0.583

0.667

0.72 | 2.167

0.3330.721.91712.243.5005.045.080.720.4170.722.00012.243.5835.045.170.720.5000.722.08312.243.6675.045.250.72

0.72 | 2.250 12.24 | 3.833 2.88 | 5.42

12.24 3.750 5.04 5.33 0.72

0.72

0.72

0.750 0.833 0.917 1.000 1.083 1.167 1.250 1.333 1.417 1.500 1.583	0.72   0.72   0.72   0.72   0.72   0.72	2.583 2.667 2.750 2.833 2.917 3.000 3.083	33.12 33.12 33.12 33.12 9.36 9.36 9.36 9.36	3.917   4.000   4.083   4.167   4.250   4.333   4.417   4.500   4.583   4.667   4.750	2.8 2.8 2.8 1.4 1.4 1.4 1.4	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	.72 .72 .72 .72 .72 .72 .72 .72 .72 .72
Max.Eff.Inten.(mm/ over (m Storage Coeff. (m Unit Hyd. Tpeak (m Unit Hyd. peak (c PEAK FLOW (c TIME TO PEAK (h	in) in)= in)= ns)= ns)=	5.00 5.01	(ii)		·	TOTALS* 0.275 (iii) 2.75	
RUNOFF VOLUME (	nm) = nm) =	35.00		11.08 36.00 0.31		32.84 36.00 0.91	
(i) CN PROCEDURE CN* = 82.0 (ii) TIME STEP (D THAN THE STO (iii) PEAK FLOW DO	0    Ia = T) SHOULD RAGE COEF	E Dep. S D BE SMA FICIENT	torage LLER OF	(Above) R EQUAL			
ADD HYD ( 0006)    1 + 2 = 3   ID1= 1 ( 0007) + ID2= 2 ( 0008)	(ha : 1.1	a) (c 10 0.0	:ms) 194	TPEAK (hrs) 2.75 2.75	(mm) 33.08		
======================================	: 4.3	34 0.3	69 69	2.75	32.90		
RESERVOIR( 0011)    IN= 2> OUT= 1     DT= 5.0 min	OUTFLOW (cms)	I STC	ORAGE 1.m.)	(cm:	5)	STORAGE (ha.m.) 0.1560	

0.0290 0.1170 0.0850 0.2610 AREA **QPEAK** TPEAK R.V. (cms) (mm) (ha) (hrs) 4.3400.3694.3400.029 INFLOW : ID= 2 ( 0006) 32.90 2.75 OUTFLOW: ID= 1 ( 0011) 4.33 32.67 PEAK FLOW REDUCTION [Qout/Qin](%)= 7.80 TIME SHIFT OF PEAK FLOW (min)= 95.00 MAXIMUM STORAGE USED (ha.m.)= 0.1163 \_\_\_\_\_ CALIB STANDHYD ( 0009) Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.51 0.01 Dep. Storage (mm)= 5.00 1.00 Average Slope (%)= 1.00 2.00 Length (m)= 59.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----RAIN | TIME RAIN | ' TIME RAIN | TIME TIME RAIN

I TUIC	NATU	I TUIC	NATH		NATH		NATN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72
1.000	0.72	2.583	33.12	4.167	2.88	5.75	0.72
1.083	0.72	2.667	33.12	4.250	2.88	5.83	0.72
1.167	0.72	2.750	33.12	4.333	1.44	5.92	0.72
1.250	0.72	2.833	9.36	4.417	1.44	6.00	0.72
1.333	4.32	2.917	9.36	4.500	1.44	6.08	0.72
1.417	4.32	3.000	9.36	4.583	1.44	6.17	0.72
1.500	4.32	3.083	9.36	4.667	1.44	6.25	0.72
1.583	4.32	3.167	9.36	4.750	1.44		

Max.Eff.Inten.(n over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	(min) (min)= (min)=	5.00 2.90 (ii 5.00	10.00 ) 5.73 (ii) 10.00	***
	(cmc)-	0.05	0.00	*TOTALS*
PEAK FLOW				0.047 (iii)
TIME TO PEAK				
RUNOFF VOLUME	(mm)=	35.00	11.08	
TOTAL RAINFALL	(mm)=	36.00	36.00	36.00
RUNOFF COEFFICIE	:NI =	0.97	0.31	0.96
***** WARNING: STORAG	GE COEFF. ]	IS SMALLER T	HAN TIME STEP!	
(i) CN PROCEDU	JRE SELECTE	D FOR PERVI	OUS LOSSES:	
			age (Above)	
(ii) TIME STEP	• •		R OR EQUAL	
THAN THE S				
(iii) PEAK FLOW	DOES NOT 1	INCLUDE BASE	FLOW IF ANY.	
CALIB	Ano.5	$(h_{2})_{-} = 2.0$	0	
STANDHYD ( 0010)   ID= 1 DT= 5.0 min	Area Total Tr	(11d) = 2.0	o A Din Conn (	%)- 02 00
	TOLAL IN	p(%) = 92.0	o DIF. Conn. (	%)= 92.00
	-		PERVIOUS (i)	
Surface Area				
Dep. Storage Average Slope	(%) -	1 00	2 00	
Length	(m) =	118 00	40 00	
Mannings n	()-	0 012	40.00	
	-	0.015	0.550	
				ME CTED

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	1.667	4.32	3.250	9.36	4.83	0.72
0.167	0.00	1.750	4.32	3.333	5.04	4.92	0.72
0.250	0.00	1.833	12.24	3.417	5.04	5.00	0.72
0.333	0.72	1.917	12.24	3.500	5.04	5.08	0.72
0.417	0.72	2.000	12.24	3.583	5.04	5.17	0.72
0.500	0.72	2.083	12.24	3.667	5.04	5.25	0.72
0.583	0.72	2.167	12.24	3.750	5.04	5.33	0.72
0.667	0.72	2.250	12.24	3.833	2.88	5.42	0.72
0.750	0.72	2.333	33.12	3.917	2.88	5.50	0.72
0.833	0.72	2.417	33.12	4.000	2.88	5.58	0.72
0.917	0.72	2.500	33.12	4.083	2.88	5.67	0.72

---- TRANSFORMED HYETOGRAPH ----

1.333 1.417	0.72   2.750 0.72   2.833 4.32   2.917 4.32   3.000 4.32   3.083	33.12   4.2 33.12   4.3 9.36   4.4 9.36   4.5 9.36   4.5	50       2.88         33       1.44         17       1.44         00       1.44         83       1.44         67       1.44	
Max.Eff.Inten.(mm/h over (min Storage Coeff. (min Unit Hyd. Tpeak (min Unit Hyd. peak (cma	n) 5.00 n)= 4.30 n)= 5.00	0 25.00 9 (ii) 24.26 0 25.00	(ii)	۵۱ 5*
PEAK FLOW (cm TIME TO PEAK (hr RUNOFF VOLUME (m TOTAL RAINFALL (m RUNOFF COEFFICIENT	s)= 2.7 n)= 35.0 n)= 36.0	5 3.00 0 11.08 0 36.00	0.1 2 33 36	178 (iii) .75 .08 .00
<pre>***** WARNING: STORAGE CO (i) CN PROCEDURE S CN* = 82.0 (ii) TIME STEP (DT THAN THE STORA (iii) PEAK FLOW DOES</pre>	SELECTED FOR Ia = Dep. ) SHOULD BE SI AGE COEFFICIE	PERVIOUS LOSSE Storage (Abo MALLER OR EQUA NT.	S: ve) L	
ADD HYD ( 0005)    1 + 2 = 3   ID1= 1 ( 0010): + ID2= 2 ( 0009):	(ha) 2.08 0 0.52 0	.047 2.75	(mm) 33.08 34.52	
ID = 3 ( 0005): NOTE: PEAK FLOWS D				
RESERVOIR( 0012)    IN= 2> OUT= 1     DT= 5.0 min		TORAGE   OU ha.m.)   ( 0.0000   0	cms) (ha .0270 0	RAGE .m.) .0940 .1570

AREA QPEAK TPEAK R.V. (cms) (hrs) (mm) (ha) 2.75 33.37 INFLOW : ID= 2 ( 0005) 2.600 0.226 OUTFLOW: ID= 1 ( 0012) 2.600 0.018 4.25 32.98 REDUCTION [Qout/Qin](%)= 7.92 PEAK FLOW TIME SHIFT OF PEAK FLOW (min) = 90.00(ha.m.)= 0.0705 MAXIMUM STORAGE USED V V SSSSS U U (v 6.2.2015) Ι Α L V V Ι SS U U A A L V V Ι SS U U AAAAA L V V Τ SS U UΑ A L SSSSS UUUUU A VV I A LLLLL ΤΤΤΤΤ ΤΤΤΤΤ Η 000 H Y Y М М 000 ТΜ 0 0 Т Н Н ΥY MM MM 0 0 Т Т Т Н Н Υ М ΜO 0 0 0 000 Т Т н Н Υ М М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Input Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\2 60f99a5-3ed3-4a17-aa38-b13e10e415c5\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\2 60f99a5-3ed3-4a17-aa38-b13e10e415c5\s DATE: 05-06-2025 TIME: 09:58:06 USER: COMMENTS:

## 

READ STORM Filename: C:\Users\caeh076182\AppD ata\Local\Temp\ ac3521ab-8657-4c27-9afb-46e264ee758f\ca1f19fd Ptotal= 47.81 mm Comments: AES 6H 005-Humber . RAIN | TIME RAIN |' RAIN | TIME TIME TIME RAIN mm/hr |' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 0.00 0.00 | 1.75 16.25 3.50 6.69 5.25 0.96 0.25 0.96 | 2.00 16.25 | 3.75 3.82 5.50 0.96 0.50 0.96 | 2.25 43.98 | 4.00 3.82 5.75 0.96 0.75 0.96 2.50 43.98 4.25 1.91 | 6.00 0.96 0.96 | 2.75 1.00 12.43 4.50 1.91 1.25 5.74 3.00 12.43 4.75 0.96 6.69 | 5.00 1.50 5.74 3.25 0.96 CALIB STANDHYD ( 0007) (ha) = 1.10Area Total Imp(%)= 92.00 |ID= 1 DT= 5.0 min | Dir. Conn.(%)= 92.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 1.01 0.09 Dep. Storage (mm)= 1.00 5.00 (%)= Average Slope 1.00 2.00 Length (m) =40.00 85.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----TIME TIME RAIN |' TIME RAIN RAIN RAIN TIME mm/hr |' hrs mm/hr | hrs mm/hr | hrs hrs mm/hr 5.74 | 3.250 0.083 0.00 | 1.667 12.43 | 4.83 0.96

0.167	0.00   1.750	5 74		6 69 1	4 92	0.96
0.250	0.00   1.833		3.417	6.69	5.00	0.96
0.333	0.96   1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96   2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96   2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96   2.167	16.25	3.750	6.69	5.33	0.96

0.750 0.833 0.917 1.000 1.083 1.167 1.250 1.333 1.417 1.500 1.583 Max.Eff.Inten.(m	0.96 0.96 0.96 0.96 0.96 5.74 5.74 5.74 5.74 5.74	2.333 2.417 2.500 2.583 2.667 2.750 2.833 2.917 3.000 3.083 3.167 43.98 5.00	43.98 43.98 43.98 43.98 43.98 12.43 12.43 12.43 12.43 12.43	3.833   3.917   4.000   4.083   4.167   4.250   4.333   4.417   4.500   4.583   4.667   4.750	3.82 3.82 3.82 3.82 3.82 1.91 1.91 1.91 1.91 1.91	5.50 5.58 5.67 5.75 5.83 5.92 6.00 6.08 6.17 6.25	0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96
0.833 0.917 1.000 1.083 1.167 1.250 1.333 1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	0.96 0.96 0.96 0.96 0.96 5.74 5.74 5.74 5.74 5.74	2.417 2.500 2.583 2.667 2.750 2.833 2.917 3.000 3.083 3.167 43.98 5.00	43.98 43.98 43.98 43.98 43.98 12.43 12.43 12.43 12.43 12.43	<pre>4.000 4.083 4.167 4.250 4.333 4.417 4.500 4.583 4.667</pre>	3.82 3.82 3.82 3.82 1.91 1.91 1.91 1.91 1.91	5.58 5.67 5.75 5.83 5.92 6.00 6.08 6.17 6.25	0.96 0.96 0.96 0.96 0.96 0.96 0.96
0.917 1.000 1.083 1.167 1.250 1.333 1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	0.96 0.96 0.96 0.96 5.74 5.74 5.74 5.74 5.74	2.500 2.583 2.667 2.750 2.833 2.917 3.000 3.083 3.167 43.98 5.00	43.98 43.98 43.98 12.43 12.43 12.43 12.43 12.43 12.43	<pre>4.083 4.167 4.250 4.333 4.417 4.500 4.583 4.667</pre>	3.82 3.82 3.82 1.91 1.91 1.91 1.91 1.91	5.67 5.75 5.83 5.92 6.00 6.08 6.17 6.25	0.96 0.96 0.96 0.96 0.96 0.96
1.000 1.083 1.167 1.250 1.333 1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	0.96 0.96 0.96 5.74 5.74 5.74 5.74 5.74	2.583 2.667 2.750 2.833 2.917 3.000 3.083 3.167 43.98 5.00	43.98 43.98 43.98 12.43 12.43 12.43 12.43 12.43 12.43	<pre>4.167 4.250 4.333 4.417 4.500 4.583 4.667</pre>	3.82 3.82 1.91 1.91 1.91 1.91 1.91	5.75 5.83 5.92 6.00 6.08 6.17 6.25	0.96 0.96 0.96 0.96 0.96
1.083 1.167 1.250 1.333 1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	0.96 0.96 5.74 5.74 5.74 5.74 5.74 m/hr)= (min)	2.667 2.750 2.833 2.917 3.000 3.083 3.167 43.98 5.00	43.98 43.98 12.43 12.43 12.43 12.43 12.43 12.43	4.250 4.333 4.417 4.500 4.583 4.667	3.82 3.82 1.91 1.91 1.91 1.91 1.91	5.75 5.83 5.92 6.00 6.08 6.17 6.25	0.96 0.96 0.96 0.96
1.167 1.250 1.333 1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	0.96 0.96 5.74 5.74 5.74 5.74 m/hr)= (min)	2.750 2.833 2.917 3.000 3.083 3.167 43.98 5.00	43.98 12.43 12.43 12.43 12.43 12.43 12.43	4.333 4.417 4.500 4.583 4.667	1.91 1.91 1.91 1.91 1.91	5.92 6.00 6.08 6.17 6.25	0.96 0.96 0.96
1.250 1.333 1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	0.96 5.74 5.74 5.74 5.74 5.74 m/hr)= (min)	2.833 2.917 3.000 3.083 3.167 43.98 5.00	12.43 12.43 12.43 12.43 12.43 12.43	4.417 4.500 4.583 4.667	1.91 1.91 1.91 1.91	6.00 6.08 6.17 6.25	0.96 0.96
1.333 1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	5.74 5.74 5.74 5.74 m/hr)= (min)	2.917 3.000 3.083 3.167 43.98 5.00	12.43 12.43 12.43 12.43	4.500   4.583   4.667	1.91 1.91 1.91	6.08   6.17   6.25	0.96
1.333 1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	5.74 5.74 5.74 5.74 m/hr)= (min)	2.917 3.000 3.083 3.167 43.98 5.00	12.43 12.43 12.43 12.43	4.500   4.583   4.667	1.91 1.91 1.91	6.08   6.17   6.25	0.96
1.417 1.500 1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	5.74 5.74 5.74 m/hr)= (min)	3.000 3.083 3.167 43.98	12.43 12.43 12.43	4.583   4.667	1.91 1.91	6.17 6.25	0.96 0.96
1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	5.74 m/hr)= (min)	43.98 5 00	12.43	4.667   4.750	1.91 1.91	6.25	0.96
1.583 Max.Eff.Inten.(m over Storage Coeff. Unit Hyd. Tpeak	5.74 m/hr)= (min)	43.98 5 00	12.43	4.750	1.91	İ	
over Storage Coeff. Unit Hyd. Tpeak	(min)	5 00				•	
over Storage Coeff. Unit Hyd. Tpeak	(min)	5 00		22 12			
Storage Coeff. Unit Hyd. Tpeak	(min)=						
Unit Hyd. Tpeak Unit Hyd. peak	()=	2.00	(;;)		<b>`</b>		
Unit Hyd. peak	(min) -	5.22	(11)	10 00	)		
оптс пуй. реак	((((((((((((((((((((((((((((((((((((	5.00		0.12			
	(CIIIS) =	0.27		0.15	*т <b>∩</b> -	TALS*	
DEAK FLOW	(cmc)-	0 1 2		0 00			<u>\</u>
PEAK FLOW						.129 (iii	)
TIME TO PEAK							
RUNOFF VOLUME	(mm)=	46.81		18.59	44	4.55	
TOTAL RAINFALL							
RUNOFF COEFFICIE	NI =	0.98		0.39	(	0.93	
**** WARNING: STORAG (i) CN PROCEDU					!		
$CN^* = 8$							
(ii) TIME STEP							
THAN THE STEP	• •			LQUAL			
(iii) PEAK FLOW							
(III) PLAN ILOW	DOLS NOT .	INCLUDE D		V II ANT.			
CALIB							
STANDHYD ( 0008)	Area	(ha)=	3.24				
ID= 1 DT= 5.0 min				Dir. Conn	.(%)=	91.00	
Surface Area		IMPERVIOL 2.95		ERVIOUS (i 0.29	)		
	• •						
Dep. Storage	• •						
Average Slope							
Length	(m)=			40.00			
Mannings n	=	0.013		0.350			
					דדאב כדי	ED	
NOTE: RAINF	ALL WAS II		010	5.0 MIN.		<b>Er.</b>	

---- TRANSFORMED HYETOGRAPH ----

TIME RAI	N   TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs mm/h	nr hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083 0.0	0   1.667	5.74	3.250	12.43	4.83	0.96
0.167 0.6	0   1.750	5.74	3.333	6.69	4.92	0.96
0.250 0.0	0   1.833	16.25	3.417	6.69	5.00	0.96
0.333 0.9		16.25		6.69	5.08	0.96
0.417 0.9		16.25		6.69	5.17	0.96
0.500 0.9	6 2.083	16.25	3.667	6.69	5.25	0.96
0.583 0.9	6 2.167	16.25	3.750	6.69	5.33	0.96
0.667 0.9	6 2.250	16.25	3.833	3.82	5.42	0.96
0.750 0.9	6   2.333	43.98	3.917	3.82	5.50	0.96
0.833 0.9	6   2.417	43.98	4.000	3.82	5.58	0.96
0.917 0.9	6 2.500	43.98	4.083	3.82	5.67	0.96
1.000 0.9	6   2.583	43.98	4.167	3.82	5.75	0.96
1.083 0.9	6   2.667	43.98	4.250	3.82	5.83	0.96
1.167 0.9	6   2.750	43.98	4.333	1.91	5.92	0.96
1.250 0.9	6   2.833	12.43	4.417	1.91	6.00	0.96
1.333 5.7	74   2.917	12.43	4.500	1.91	6.08	0.96
1.417 5.7	4   3.000	12.43	4.583	1.91	6.17	0.96
1.500 5.7	4   3.083	12.43	4.667	1.91	6.25	0.96
1.583 5.7	4   3.167	12.43	4.750	1.91		
<pre>Max.Eff.Inten.(mm/hr)=</pre>	43.98		23.12			
over (min)	5.00		10.00			
Storage Coeff. (min)=		• •	9.23 (ii)	)		
Unit Hyd. Tpeak (min)=	5.00		10.00			
Unit Hyd. peak (cms)=	0.23		0.12	****		
	0.00		0.00		ALS*	
PEAK FLOW (cms)=	0.36		0.02		376 (iii)	)
TIME TO PEAK (hrs)=	2.75		2.75		2.75	
RUNOFF VOLUME (mm)=	46.81		18.59		.27	
TOTAL RAINFALL (mm)=	47.81		47.81		'.81	
RUNOFF COEFFICIENT =	0.98		0.39	E	.93	
***** WARNING: STORAGE COEFF	. IS SMALL	ER THAN	TIME STEP	!		
(i) CN PROCEDURE SELE	CTED FOR P	ERVIOUS	LOSSES:			
CN* = 82.0						
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL						
THAN THE STORAGE COEFFICIENT.						
(iii) PEAK FLOW DOES NO	T INCLUDE	BASEFLOW	IF ANY.			
· · · · · · · · · · · · · · · · · · ·						

ADD HYD ( 0006)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0007):	1.10	0.129	2.75	44.55
+ ID2= 2 ( 0008):	3.24	0.376	2.75	44.27

\_\_\_\_\_\_\_ ID = 3 (0006):4.34 0.504 2.75 44.34 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ RESERVOIR( 0011) 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 0.0430 0.1560 ------0.0290 0.1170 0.0850 0.2610 
 AREA
 QPEAK
 TPEAK

 (ha)
 (cms)
 (hrs)

 4.340
 0.504
 2.75
 R.V. (mm) 44.34 INFLOW : ID= 2 ( 0006) OUTFLOW: ID= 1 ( 0011) 4.340 0.043 4.25 44.11 PEAK FLOW REDUCTION [Qout/Qin](%)= 8.47 TIME SHIFT OF PEAK FLOW (min)= 90.00 MAXIMUM STORAGE USED (ha.m.)= 0.1553 \_\_\_\_\_ CALIB STANDHYD ( 0009) | Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.51 0.01 Dep. Storage(mm)=1.005.00Average Slope(%)=1.002.00Length(m)=59.0040.00Mannings n=0.0130.350 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 | 1.667 5.74 | 3.250 12.43 | 4.83 0.96 0.167 0.00 | 1.750 5.74 | 3.333 6.69 | 4.92 0.96 0.250 0.00 | 1.833 16.25 | 3.417 6.69 | 5.00 0.96 0.333 0.96 | 1.917 16.25 | 3.500 6.69 | 5.08 0.96 0.417 0.96 2.000 16.25 3.583 6.69 5.17 0.96

 0.500
 0.96
 2.083
 16.25
 3.667
 6.69
 5.25
 0.96

 0.583
 0.96
 2.167
 16.25
 3.750
 6.69
 5.33
 0.96

 0.667
 0.96
 2.250
 16.25
 3.833
 3.82
 5.42
 0.96

 0.750
 0.96
 2.333
 43.98
 3.917
 3.82
 5.50
 0.96

0.917 1.000 1.083 1.167 1.250 1.333 1.417 1.500	0.96   2.667 0.96   2.750 0.96   2.833 5.74   2.917 5.74   3.000	43.984.08343.984.16743.984.25043.984.33312.434.41712.434.50012.434.58312.434.667	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.96
Max.Eff.Inten.(mm/hr over (min Storage Coeff. (min Unit Hyd. Tpeak (min Unit Hyd. peak (cms	) 5.00 )= 2.59 )= 5.00	10.00 (ii) 5.11 (ii) 10.00		
PEAK FLOW (cms	)= 0.06	0.00	*TOTALS* 0.063 (iii)	
TIME TO PEAK (hrs	)= 2.75	2.75	2.75	
	)= 46.81		46.24	
TOTAL RAINFALL (mm RUNOFF COEFFICIENT			47.81 0.97	
CN* = 82.0 (ii) TIME STEP (DT) THAN THE STORA (iii) PEAK FLOW DOES	SHOULD BE SMA GE COEFFICIENT	•		
	ea (ha)= tal Imp(%)= 9		.(%)= 92.00	
	IMPERVIOU	S PERVIOUS (i	)	
Surface Area (ha	-	0.17		
Dep. Storage (mm	-	5.00		
÷	)= 1.00 )= 118.00	2.00 40.00		
Mannings n	= 0.013	40.00 0.350		
<u> </u>	WAS TRANSFORME		TIME STEP.	
NOTE: NAIN ALL				
	TRA	NSFORMED HYETOGR	APH	
TIME	RAIN   TIME	RAIN  ' TIME	RAIN   TIME	RAIN

TIME	RAIN	TIME	RAIN	1'	TIME	RAIN	TIME	RAIN			
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr			

0.083	0.00	1.667	5.74	3.250	12.43	4.83	0.96
0.167	0.00	1.750	5.74	3.333	6.69	4.92	0.96
0.250	0.00	1.833	16.25	3.417	6.69	5.00	0.96
0.333	0.96	1.917	16.25	3.500	6.69	5.08	0.96
0.417	0.96	2.000	16.25	3.583	6.69	5.17	0.96
0.500	0.96	2.083	16.25	3.667	6.69	5.25	0.96
0.583	0.96	2.167	16.25	3.750	6.69	5.33	0.96
0.667	0.96	2.250	16.25	3.833	3.82	5.42	0.96
0.750	0.96	2.333	43.98	3.917	3.82	5.50	0.96
0.833	0.96	2.417	43.98	4.000	3.82	5.58	0.96
0.917	0.96	2.500	43.98	4.083	3.82	5.67	0.96
1.000	0.96	2.583	43.98	4.167	3.82	5.75	0.96
1.083	0.96	2.667	43.98	4.250	3.82	5.83	0.96
1.167	0.96	2.750	43.98	4.333	1.91	5.92	0.96
1.250	0.96	2.833	12.43	4.417	1.91	6.00	0.96
1.333	5.74	2.917	12.43	4.500	1.91	6.08	0.96
1.417	5.74	3.000	12.43	4.583	1.91	6.17	0.96
1.500	5.74	3.083	12.43	4.667	1.91	6.25	0.96
1.583	5.74	3.167	12.43	4.750	1.91		

Max.Eff.Inten.(mm/hr)=	43.98	23.12	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.92 (ii)	8.44 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.24	0.12	
			*TOTALS*
PEAK FLOW (cms)=	0.23	0.01	0.243 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	46.81	18.59	44.55
TOTAL RAINFALL (mm)=	47.81	47.81	47.81
RUNOFF COEFFICIENT =	0.98	0.39	0.93

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
- CN\* = 82.0 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 ( 0005) | 1 + 2 = 3 | QPEAK R.V. AREA TPEAK (mm) -----(ha) (hrs) (cms) + ID2= 2 ( 0009): 0.52 0.243 2.75 44.55

0.063

ID = 3 ( 0005): 2.60 0.306 2.75

2.75

46.24

44.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. RESERVOIR( 0012) 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 0.0270 0.0940 0.0180 0.0710 0.0540 0.1570 AREA OPEAK TPEAK R.V. (mm) (ha) (cms) (hrs) INFLOW : ID= 2 ( 0005) 2.600 0.306 2.75 44.89 OUTFLOW: ID= 1 ( 0012) 2.600 0.027 4.25 44.50 PEAK FLOW REDUCTION [Qout/Qin](%)= 8.78 TIME SHIFT OF PEAK FLOW (min) = 90.00MAXIMUM STORAGE USED (ha.m.)= 0.0936 \_\_\_\_\_ \_\_\_\_\_ (v 6.2.2015) V V Ι SSSSS U U A L V I SS V U U A A L SS V V Ι U U AAAAA L V V Ι SS UΑ A L U Ι SSSSS UUUUU A A LLLLL VV 000 000 ТΜ TTTTT TTTTT H H Y Y M М Н ҮҮ 0 0 Т Т н MM MM 0 0 0 0 Т Т Н H Y М ΜO 0 Т Т 000 Н Υ Н Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\8 729c51d-d60c-4e26-aef8-a87924146f85\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\8 729c51d-d60c-4e26-aef8-a87924146f85\s

DATE: 05-06-2025

USER:

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

READ STORM	Filenam	ata\l	_ocal\Te			
   Ptotal= 55.69 mm	Comment	ac352 s: AES 6			fb-46e264ee758	ST \250CCaT4
TIME	RAIN	TIME	RAIN	' TIME	RAIN   TIM	1E RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr   hr	rs mm/hr
0.00			18.94		·	•
0.25				3.75		
0.50				4.00		
0.75		2.50			2.23 6.00	
1.00		2.75		4.50		
1.25		3.00		4.75		
1.50				5.00		
CALIB						
STANDHYD ( 0007)		• •				
ID= 1 DT= 5.0 min	Total Im	1p(%)= 9	92.00	Dir. Conn	.(%)= 92.00	
	_				,	
		MPERVIO		RVIOUS (i)	)	
Surface Area		1.01		0.09		
	(mm)=			5.00		
•	(%)=			2.00		
Length	(m)=			40.00		
Mannings n	=	0.013		0.350		
NOTE: RAINF				5 0 MTN -	TIME STEP.	
NUIE. NAINE	ALL WAS IN			J.O. HITH.	ITHE SIEF.	

	TRA	NSFORME	D HYETOGRA	APH	-	
TIME RAIN		RAIN		RAIN		RAIN
hrs mm/hr	hrs	mm/hr	'hrs	mm/hr	hrs	mm/hr
0.083 0.00			3.250	14.48		1.11
0.167 0.00			3.333	7.80		1.11
0.250 0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333 1.11	1.917		3.500	7.80	5.08	1.11
0.417 1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500 1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583 1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667 1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750 1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833 1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917 1.11		51.24	4.083	4.46	5.67	1.11
	2.583		4.167	4.46		1.11
1.083 1.11	•		4.250	4.46		1.11
	2.750		4.333	2.23		1.11
	2.833		4.417	2.23		1.11
	2.917		4.500	2.23		1.11
	3.000		4.583			1.11
	3.083		4.667			1.11
1.583 6.68	3.167	14.48	4.750	2.23		
<pre>Max.Eff.Inten.(mm/hr)=</pre>	51.24		29.66			
over (min)	5.00		10.00			
Storage Coeff. (min)=	3.03	(ii)	7.28 (ii)			
Unit Hyd. Tpeak (min)=	5.00		10.00			
Unit Hyd. peak (cms)=	0.27		0.14			
				*T01	TALS*	
PEAK FLOW (cms)=	0.14		0.01	0.	.151 (iii)	)
TIME TO PEAK (hrs)=	2.75		2.75	2	2.75	
RUNOFF VOLUME (mm)=	54.69		24.14		2.24	
TOTAL RAINFALL (mm)=	55.69		55.69		5.69	
RUNOFF COEFFICIENT =	0.98		0.43	6	9.94	
***** WARNING: STORAGE COEFF. (i) CN PROCEDURE SELECT						
(1) CN FROCEDORE SELECT						

- (1) CN\* = 82.0 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 ( 0008)| Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.95	0.29
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	147.00	40.00
Mannings n	=	0.013	0.350

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	1.667	6.68	3.250	14.48	4.83	1.11					
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11					
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11					
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11					
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11					
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11					
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11					
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11					
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11					
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11					
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11					
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11					
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11					
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11					
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11					
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11					
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11					
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11					
1.583	6.68	3.167	14.48	4.750	2.23							

<pre>Max.Eff.Inten.(mm/hr)=</pre>	51.24	29.66	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.21 (ii)	8.68 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.24	0.12	
			*TOTALS*
PEAK FLOW (cms)=	0.42	0.02	0.440 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	54.69	24.14	51.94
TOTAL RAINFALL (mm)=	55.69	55.69	55.69
RUNOFF COEFFICIENT =	0.98	0.43	0.93

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006) 1 + 2 = 3 AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) | 1 + 2 = 3 | ID1= 1 ( 0007): 1.10 0.151 2.75 52.24 + ID2= 2 ( 0008): 3.24 0.440 2.75 51.94 \_\_\_\_\_ ID = 3 (0006): 4.34 0.591 2.75 52.02 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ | RESERVOIR( 0011)| OVERFLOW IS OFF | IN= 2---> OUT= 1 | 

 Interpretent of the second AREA<br/>(ha)QPEAK<br/>(cms)TPEAK<br/>(hrs)R.V.<br/>(mm)INFLOW : ID= 2 (0006)4.3400.5912.7552.02OUTFLOW: ID= 1 (0011)4.3400.0534.0851.78 PEAK FLOW REDUCTION [Qout/Qin](%)= 8.95 TIME SHIFT OF PEAK FLOW (min)= 80.00 MAXIMUM STORAGE USED (ha.m.)= 0.1807 \_\_\_\_\_ | CALIB | STANDHYD ( 0009) | Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 -----IMPERVIOUS PERVIOUS (i) Surface Area(ha)=0.510.01Dep. Storage(mm)=1.005.00Average Slope(%)=1.002.00Length(m)=59.0040.00 Mannings n = 0.013 0.350 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	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417		4.000	4.46	5.58	1.11
0.917		2.500		4.083	4.46	5.67	1.11
1.000		2.583		4.167	4.46	5.75	1.11
1.083		2.667		4.250	4.46	5.83	1.11
1.167	1.11	2.750		4.333	2.23	5.92	1.11
1.250	1.11	2.833		4.417	2.23	6.00	1.11
1.333	6.68	2.917		4.500	2.23	6.08	1.11
1.417	6.68	3.000		4.583	2.23	6.17	1.11
1.500		3.083		4.667	2.23	6.25	1.11
1.583		3.167		4.750	2.23	0.25	1.11
1.905	0.00	1 3.107	14.40	1 4.750	2,25		
<pre>Max.Eff.Inten.(mm/</pre>	/hr)=	51.24		29.66			
over (r	•	5.00		5.00			
•	nin)=	2.43	(ii)	4.81 (ii	)		
Unit Hyd. Tpeak (r		5.00	(11)	5.00	)		
Unit Hyd. peak (	•	0.30		0.22			
onic nyu: peak (t		0.50		0.22	*TOT/	AI S*	
PEAK FLOW (d	cms)=	0.07		0.00		073 (iii	)
•	irs)=	2.75		2.75		.75	)
•	(mm)=	54.69		24.14		.08	
	• •	55.69		55.69		.69	
	(mm)=						
RUNOFF COEFFICIEN	=	0.98		0.43	0	.97	
			D TUAN		1		
***** WARNING: STORAGE	CUEFF.	LS SMALLE		IIME SIEP	!		
(i) CN PROCEDURE							
$CN^* = 82$		•	0	• •			
(ii) TIME STEP (I	•			EQUAL			
THAN THE STO							
(iii) PEAK FLOW DO	DES NOT .	INCLUDE B	SASEFLOW	IF ANY.			
CALIB	A		2 02				
STANDHYD ( 0010)					(0/) -		
ID= 1 DT= 5.0 min	lotal In	np(%)= 9	12.00	Dir. Conn	.(%)= 92	2.00	
	-				、 、		
				RVIOUS (i	)		
Surface Area	na)=	1.91		0.17			

Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.00	40.00
Mannings n	=	0.013	0.350

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	1.667	6.68	3.250	14.48	4.83	1.11
0.167	0.00	1.750	6.68	3.333	7.80	4.92	1.11
0.250	0.00	1.833	18.94	3.417	7.80	5.00	1.11
0.333	1.11	1.917	18.94	3.500	7.80	5.08	1.11
0.417	1.11	2.000	18.94	3.583	7.80	5.17	1.11
0.500	1.11	2.083	18.94	3.667	7.80	5.25	1.11
0.583	1.11	2.167	18.94	3.750	7.80	5.33	1.11
0.667	1.11	2.250	18.94	3.833	4.46	5.42	1.11
0.750	1.11	2.333	51.24	3.917	4.46	5.50	1.11
0.833	1.11	2.417	51.24	4.000	4.46	5.58	1.11
0.917	1.11	2.500	51.24	4.083	4.46	5.67	1.11
1.000	1.11	2.583	51.24	4.167	4.46	5.75	1.11
1.083	1.11	2.667	51.24	4.250	4.46	5.83	1.11
1.167	1.11	2.750	51.24	4.333	2.23	5.92	1.11
1.250	1.11	2.833	14.48	4.417	2.23	6.00	1.11
1.333	6.68	2.917	14.48	4.500	2.23	6.08	1.11
1.417	6.68	3.000	14.48	4.583	2.23	6.17	1.11
1.500	6.68	3.083	14.48	4.667	2.23	6.25	1.11
1.583	6.68	3.167	14.48	4.750	2.23		

Max.Eff.Inten.(	mm/hr)=	51.24	29.66	
over	(min)	5.00	10.00	
Storage Coeff.	(min)=	3.69 (ii)	7.93 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	10.00	
Unit Hyd. peak	(cms)=	0.25	0.13	
				*TOTALS*
PEAK FLOW	(cms)=	0.27	0.01	0.284 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	54.69	24.14	52.24
TOTAL RAINFALL	(mm)=	55.69	55.69	55.69
RUNOFF COEFFICI	ENT =	0.98	0.43	0.94

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i)	CN	PROCED	OURE	SELE	CTED	FOR	PERVIOUS	LOSSES	:
				-	_	-			•

- CN\* = 82.0 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 ( 0005) 1 + 2 = 3 QPEAK TPEAK AREA R.V. (ha) (cms) (hrs) (mm) ID1= 1 ( 0010): 2.08 0.284 2.75 52.24 + ID2= 2 ( 0009): 0.52 0.073 2.75 54.08 ------ID = 3 (0005):2.60 0.358 2.75 52.61 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ RESERVOIR( 0012) OVERFLOW IS OFF | IN= 2---> OUT= 1 | OUTFLOW DT= 5.0 min OUTFLOW STORAGE STORAGE (cms) (ha.m.) (cms) (ha.m.) 0.0000 0.0940 0.0270 0.0000 0.0180 0.0710 0.0540 0.1570 AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 2.75 INFLOW : ID= 2 ( 0005) 0.358 2.600 52.61 OUTFLOW: ID= 1 ( 0012) 2.600 0.033 3.92 52.23 PEAK FLOW REDUCTION [Qout/Qin](%)= 9.33 TIME SHIFT OF PEAK FLOW (min) = 70.00MAXIMUM STORAGE USED (ha.m.)= 0.1089 \_\_\_\_\_ \_\_\_\_\_ V V Ι SSSSS U U A L (v 6.2.2015) V V Ι SS U U A A L Ι U U AAAAA L V V SS V V Ι SS U U A A L I SSSSS UUUUU A A LLLLL VV 000 ΤΤΤΤΤ ΤΤΤΤΤ Η Н Ү Ү М 000 ТΜ М Т Т Н ҮҮ 0 0 Н MM MM O O Т Т Н 0 0 H Y М мо 0 000 Т Т Н Н Y М Μ 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved.

\*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\d 0eacca2-4cc9-4bad-9ace-4f2324061023\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\d 0eacca2-4cc9-4bad-9ace-4f2324061023\s DATE: 05-06-2025 TIME: 09:58:06 USER: COMMENTS: \_\_\_\_\_ \*\* \*\* SIMULATION : AES 6H 025-Humber Filename: C:\Users\caeh076182\AppD READ STORM ata\Local\Temp\ ac3521ab-8657-4c27-9afb-46e264ee758f\6ec422e5 Comments: AES 6H 025-Humber Ptotal= 65.59 mm TIME RAIN | TIME RAIN |' TIME RAIN | TIME RAIN mm/hr |' hrs hrs mm/hr hrs mm/hr | hrs mm/hr 0.00 0.00 1.75 22.30 3.50 9.18 5.25 1.31 5.25 | 5.50 1.31 0.25 1.31 | 2.00 22.30 | 3.75 0.50 1.31 2.25 60.35 4.00 5.25 5.75 1.31 0.75 1.31 | 2.50 60.35 | 4.25 2.62 6.00 1.31 1.00 1.31 | 2.75 17.06 | 4.50 2.62 | 1.25 7.87 | 3.00 17.06 | 4.75 1.31 | 1.50 7.87 | 3.25 9.18 | 5.00 1.31 | | CALIB STANDHYD ( 0007) Area (ha)= 1.10

|ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 ------IMPERVIOUS PERVIOUS (i) Surface Area 0.09 (ha)= 1.01 5.00 Dep. Storage (mm)= 1.00 (%)= Average Slope 1.00 2.00

Length (m)= 85.00 40.00 Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

## ---- TRANSFORMED HYETOGRAPH ----

		11	ANDIONIL		VAFII	-	
TIM	E RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hr	s mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.08	3 0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.16	7 0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.25	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.33	3 1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.41	7 1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.50	0 1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.58	3 1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.66	7 1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.75	0 1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.83	3 1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.91	7 1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.00	0 1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.08	3 1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.16	7 1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.25	0 1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.33	3 7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.41	7 7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.50	0 7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.58	3 7.87	3.167	17.06	4.750	2.62		

Max.Eff.Inten.(mm/hr)=	60.35	38.26	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.84 (ii)	6.82 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.28	0.14	
			*TOTALS*
PEAK FLOW (cms)=	0.17	0.01	0.178 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	64.59	31.55	61.94
TOTAL RAINFALL (mm)=	65.59	65.59	65.59
RUNOFF COEFFICIENT =	0.98	0.48	0.94

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 82.0 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 ( 0008)   ID= 1 DT= 5.0 min	Area Total	(ha)= Imp(%)=	3.24 91.00	Dir. (	Conn.(%)=	91.00
		IMPERVI	DUS	PERVIOU	S (i)	
Surface Area	(ha)=	2.9	5	0.29		
Dep. Storage	(mm)=	1.00	9	5.00		
Average Slope	(%)=	1.00	9	2.00		
Length	(m)=	147.00	9	40.00		
Mannings n	=	0.01	3	0.350		

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

---- TRANSFORMED HYETOGRAPH ----

		110					
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	7.87	3.250	17.06	4.83	1.31
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31
1.583	7.87	3.167	17.06	4.750	2.62		
May Fff Inton (m	/hn)_	60.25		20.20			
Max.Eff.Inten.(m	•			38.26			
	(min)	5.00		10.00	、		
Storage Coeff.	(mın)=	3.94	(11)	8.13 (11	)		

10.00
8.13 (ii)
10.00
0.13
1

\*TOTALS\*

0.03 PEAK FLOW (cms)= TIME TO PEAK (hrs)= 0.49 2.75 0.522 (iii) 2.75 2.75 31.55 (mm)= RUNOFF VOLUME 64.59 61.62 

 TOTAL RAINFALL (mm)=
 65.59
 65.59

 RUNOFF COEFFICIENT =
 0.98
 0.48

 65.59 0.94 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006)| 2 = 3AREAQPEAKTPEAKR.V.-----(ha)(cms)(hrs)(mm)ID1= 1(0007):1.100.1782.7561.94 | 1 + 2 = 3 | -----+ ID2= 2 ( 0008): 3.24 0.522 2.75 61.62 ------ID = 3 (0006): 4.34 0.700 2.75 61.70 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ | RESERVOIR( 0011)| OVERFLOW IS OFF IN= 2---> OUT= 1 | DT= 5.0 min | OUTFLOW STORAGE (cms) (ha.m.) OUTFLOW STORAGE (cms) (ha.m.) ------ 
 0.0000
 0.0000
 0.0430
 0.1560

 0.0290
 0.1170
 0.0850
 0.2610

 AREA
 QPEAK
 TPEAK
 R.V.

 (ha)
 (cms)
 (hrs)
 (mm)

 INFLOW:
 ID= 2 (0006)
 4.340
 0.700
 2.75
 61.70

 OUTFLOW:
 ID= 1 (0011)
 4.340
 0.066
 3.92
 61.46
 PEAK FLOW REDUCTION [Qout/Qin](%)= 9.39 TIME SHIFT OF PEAK FLOW (min)= 70.00 MAXIMUM STORAGE USED (ha.m.)= 0.2127 \_\_\_\_\_ CALIB STANDHYD ( 0009) Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 ------

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.01
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	59.00	40.00
Mannings n	=	0.013	0.350

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	1.667	7.87	3.250	17.06	4.83	1.31	
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31	
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31	
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31	
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31	
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31	
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31	
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31	
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31	
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31	
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31	
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31	
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31	
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31	
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31	
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31	
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31	
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31	
1.583	7.87	3.167	17.06	4.750	2.62			

Max.Eff.Inten.(mm/hr)=	60.35	38.26	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.28 (ii)	4.51 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.23	
			*TOTALS*
PEAK FLOW (cms)=	0.09	0.00	0.087 (iii)
TIME TO PEAK (hrs)=	2.75	2.75	2.75
RUNOFF VOLUME (mm)=	64.59	31.55	63.93
TOTAL RAINFALL (mm)=	65.59	65.59	65.59
RUNOFF COEFFICIENT =	0.98	0.48	0.97

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

 (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0010) | Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 1.91 0.17 (mm)= 5.00 Dep. Storage 1.00 1.00 1.00 118.00 Average Slope 2.00 (%)= Length (m)= 40.00 Mannings n = 0.013 0.350 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	1.667	7.87	3.250	17.06	4.83	1.31	
0.167	0.00	1.750	7.87	3.333	9.18	4.92	1.31	
0.250	0.00	1.833	22.30	3.417	9.18	5.00	1.31	
0.333	1.31	1.917	22.30	3.500	9.18	5.08	1.31	
0.417	1.31	2.000	22.30	3.583	9.18	5.17	1.31	
0.500	1.31	2.083	22.30	3.667	9.18	5.25	1.31	
0.583	1.31	2.167	22.30	3.750	9.18	5.33	1.31	
0.667	1.31	2.250	22.30	3.833	5.25	5.42	1.31	
0.750	1.31	2.333	60.35	3.917	5.25	5.50	1.31	
0.833	1.31	2.417	60.35	4.000	5.25	5.58	1.31	
0.917	1.31	2.500	60.35	4.083	5.25	5.67	1.31	
1.000	1.31	2.583	60.35	4.167	5.25	5.75	1.31	
1.083	1.31	2.667	60.35	4.250	5.25	5.83	1.31	
1.167	1.31	2.750	60.35	4.333	2.62	5.92	1.31	
1.250	1.31	2.833	17.06	4.417	2.62	6.00	1.31	
1.333	7.87	2.917	17.06	4.500	2.62	6.08	1.31	
1.417	7.87	3.000	17.06	4.583	2.62	6.17	1.31	
1.500	7.87	3.083	17.06	4.667	2.62	6.25	1.31	
1.583	7.87	3.167	17.06	4.750	2.62			

Max.Eff.Inten.(	nm/hr)=	60.35	38.26	
over	(min)	5.00	10.00	
Storage Coeff.	(min)=	3.45 (ii)	7.43 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	10.00	
Unit Hyd. peak	(cms)=	0.26	0.13	
				*TOTALS*
PEAK FLOW	(cms)=	0.32	0.02	0.337 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75

RUNOFF VOLUME(mm)=64.5931.5561.95TOTAL RAINFALL(mm)=65.5965.5965.59 0.48 RUNOFF COEFFICIENT = 0.98 0.94 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0005) AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm) 1 + 2 = 3 -----ID1= 1 ( 0010): 2.08 0.337 2.75 61.95 + ID2= 2 ( 0009): 0.52 0.087 2.75 63.93 \_\_\_\_\_ ID = 3 (0005): 2.600.423 2.75 62.34 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ RESERVOIR( 0012) OVERFLOW IS OFF | IN= 2---> OUT= 1 | OUTFLOWSTORAGEOUTFLOWSTORAGE(cms)(ha.m.)(cms)(ha.m.)0.00000.00000.02700.09400.01800.07100.05400.1570 | DT= 5.0 min | ----- 
 AREA
 QPEAK
 TPEAK
 R.V.

 (ha)
 (cms)
 (hrs)
 (mm)

 2.600
 0.423
 2.75
 62.34
 INFLOW : ID= 2 (0005)2.6000.4232.75OUTFLOW: ID= 1 (0012)2.6000.0423.83 61.96 PEAK FLOW REDUCTION [Qout/Qin](%)= 9.82 TIME SHIFT OF PEAK FLOW (min)= 65.00 MAXIMUM STORAGE USED (ha.m.)= 0.1280 \_\_\_\_\_ (v 6.2.2015) V V I SSSSS U U A L V V I SS U U A A L V V I SS U U AAAAA L VVI SSUUAAL

VV I SSSSS UUUUU A A LLLLL 000 TTTTT TTTTT H ΗY Υ Μ М 000 ТΜ 0 0 Т Т Н Н ΥY MM MM 0 0 Т Т ΜO 0 н н 0 0 Υ Μ Т 000 Т Н Н Υ Μ М 000 Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\f ab3ced5-6708-4739-8835-218e07f74cdd\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\f ab3ced5-6708-4739-8835-218e07f74cdd\s DATE: 05-06-2025 TIME: 09:58:07 USER: COMMENTS: ------\*\* SIMULATION : AES 6H 050-Humber \*\* . . . . . . . . . . . . . . . Filename: C:\Users\caeh076182\AppD READ STORM ata\Local\Temp\ ac3521ab-8657-4c27-9afb-46e264ee758f\c2571f5b | Ptotal= 73.00 mm | Comments: AES 6H 050-Humber TIME RAIN |' TIME RAIN TIME RAIN TIME RAIN mm/hr |' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 0.00 0.00 1.75 24.82 | 3.50 10.22 5.25 1.46 1.46 | 5.84 | 0.25 2.00 24.82 | 3.75 5.50 1.46

0.50 1.46 | 2.25 67.16 | 4.00 5.84 | 5.75 1.46 0.75 1.46 2.50 67.16 4.25 2.92 6.00 1.46 1.00 1.46 | 2.75 18.98 | 4.50 2.92 | 1.25 8.76 | 3.00 18.98 | 4.75 1.46 | 1.50 8.76 | 3.25 10.22 | 5.00 1.46 | \_\_\_\_\_ -----| CALIB STANDHYD ( 0007) Area (ha)= 1.10 |ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= Dep. Storage (mm)= 1.01 0.09 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m)= 85.00 40.00 Mannings n 0.013 0.350 =

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

---- TRANSFORMED HYETOGRAPH ----

TI	1E RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hı	rs mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.08	33 0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.10	57 0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.2	50 0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.3	33 1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.43	L7 1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.50	<b>1.46</b>	2.083	24.82	3.667	10.22	5.25	1.46
0.58	33 1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.60	57 1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.7	50 1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.83	33 1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.93	L7 1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.00	<b>1.46</b>	2.583	67.16	4.167	5.84	5.75	1.46
1.08	33 1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.10	57 1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.2	50 1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.3	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.43	L7 8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.50	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.58	8.76	3.167	18.98	4.750	2.92		
Max.Eff.Inten.	(mm/hr)=	67.16		44.89			
	(min)	5.00		10.00			
Storage Coeff.	• •			6.53 (ii	)		
Unit Hyd. Tpeal	• •	5.00	• •	10.00			
,							

Unit Hyd. peak (cms)= 0.29 0.14 \*TOTALS\* PEAK FLOW (cms) =0.19 0.01 0.199 (iii) TIME TO PEAK (hrs) =2.75 2.75 2.75 RUNOFF VOLUME (mm) =69.23 72.00 37.36 TOTAL RAINFALL (mm) =73.00 73.00 73.00 RUNOFF COEFFICIENT = 0.99 0.51 0.95 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0008) Area (ha)= 3.24 |ID= 1 DT= 5.0 min | Total Imp(%)= 91.00 Dir. Conn.(%)= 91.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.95 0.29 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m) =147.00 40.00 Mannings n 0.013 0.350 = NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP. ---- TRANSFORMED HYETOGRAPH ----TIME RAIN |' TIME RAIN RAIN RAIN TIME TIME mm/hr l' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 0.083 0.00 | 1.667 8.76 | 3.250 18.98 | 4.83 1.46 0.167 0.00 | 1.750 8.76 | 3.333 10.22 4.92 1.46 0.250 0.00 | 1.833 24.82 | 3.417 10.22 5.00 1.46 1.46 | 1.917 1.46 0.333 24.82 3.500 10.22 5.08 0.417 1.46 2.000 24.82 3.583 10.22 5.17 1.46 1.46 | 2.083 0.500 24.82 3.667 10.22 5.25 1.46 0.583 1.46 | 2.167 24.82 | 3.750 10.22 5.33 1.46 1.46 | 2.250 24.82 | 3.833 5.84 | 5.42 1.46 0.667 0.750 1.46 | 2.333 67.16 | 3.917 5.84 5.50 1.46 0.833 1.46 | 2.417 67.16 | 4.000 1.46 5.84 5.58 0.917 1.46 2.500 67.16 | 4.083 5.84 5.67 1.46 1.000 1.46 | 2.583 67.16 | 4.167 5.84 5.75 1.46 1.083 1.46 2.667 67.16 | 4.250 5.84 5.83 1.46 1.46 2.750 2.92 5.92 1.46 1.167 67.16 | 4.333 1.46 | 2.833 18.98 | 4.417 1.250 2.92 6.00 1.46

1.333 8.76 | 2.917 18.98 | 4.500 2.92 | 6.08 1.46 1.417 8.76 3.000 18.98 4.583 2.92 6.17 1.46 1.500 8.76 3.083 18.98 4.667 2.92 6.25 1.46 1.583 8.76 | 3.167 18.98 | 4.750 2.92 | 67.16 44.89 5.00 10.00 Max.Eff.Inten.(mm/hr)= over (min) Storage Coeff. (min)=3.77 (ii)7.79 (ii)Unit Hyd. Tpeak (min)=5.0010.00Unit Hyd. peak (cms)=0.250.13 \*TOTALS\* 0.55 0.03 PEAK FLOW (cms)= 0.583 (iii) TIME TO PEAK (hrs)= 2.75 2.75 2.75 TIME TO PEAK(hrs)=2.75RUNOFF VOLUME(mm)=72.00TOTAL RAINFALL(mm)=73.00RUNOFF COEFFICIENT=0.99 2.75 37.36 73.00 0.51 68.88 73.00 0.51 0.94 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0006) AREA QPEAK TPEAK R.V. 1 + 2 = 3 (ha) (cms) (hrs) (mm) -----ID1= 1 ( 0007): 1.10 0.199 2.75 69.23 + ID2= 2 ( 0008): 3.24 0.583 2.75 68.88 ------ID = 3 (0006): 4.34 0.782 2.75 68.97 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ RESERVOIR( 0011) 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
 0.0430
 0.1560
 0.0290 0.1170 0.0850 0.2610 AREAQPEAKTPEAKR.V.(ha)(cms)(hrs)(mm)4.3400.7822.7568.94.3400.0753.9268.7 INFLOW : ID= 2 ( 0006) 68.97 OUTFLOW: ID= 1 ( 0011) 68.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.63 TIME SHIFT OF PEAK FLOW (min)= 70.00 MAXIMUM STORAGE USED (ha.m.)= 0.2368 \_\_\_\_\_ | CALIB STANDHYD ( 0009) | Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 -----IMPERVIOUS PERVIOUS (i) 

 Surface Area
 (ha)=
 0.51

 Dep. Storage
 (mm)=
 1.00

 Average Slope
 (%)=
 1.00

 Length
 (m)=
 59.00

 0.01 5.00 2.00 40.00 Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

		INA	INSFURME		AFN		
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46
1.500	8.76	3.083	18.98	4.667	2.92	6.25	1.46
1.583	8.76	3.167	18.98	4.750	2.92		
.Inten.(mm/	/hr)=	67.16		44.89			

<pre>Max.Eff.Inten.(mm/hr)=</pre>	67.16	44.89
over (min)	5.00	5.00
Storage Coeff. (min)=	2.18 (ii)	4.32 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.31	0.23

\*TOTALS\*

PEAK FLOW (cms)= TIME TO PEAK (hrs)= 0.10 2.75 0.00 0.096 (iii) 2.75 2.75 (mm)= 72.00 RUNOFF VOLUME 37.36 71.31 TOTAL RAINFALL (mm) = 73.00 RUNOFF COEFFICIENT = 0.99 73.00 73.00 0.51 0.98 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0010) | Area (ha)= 2.08 |ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= Dep. Storage (mm)= 1.91 0.17 1.00 5.00 (m) = 1.00(m) = 1.00(m) = 118.00Average Slope (%)= 2.00 40.00 Length Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

## ---- TRANSFORMED HYETOGRAPH ----

		111/2					
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	8.76	3.250	18.98	4.83	1.46
0.167	0.00	1.750	8.76	3.333	10.22	4.92	1.46
0.250	0.00	1.833	24.82	3.417	10.22	5.00	1.46
0.333	1.46	1.917	24.82	3.500	10.22	5.08	1.46
0.417	1.46	2.000	24.82	3.583	10.22	5.17	1.46
0.500	1.46	2.083	24.82	3.667	10.22	5.25	1.46
0.583	1.46	2.167	24.82	3.750	10.22	5.33	1.46
0.667	1.46	2.250	24.82	3.833	5.84	5.42	1.46
0.750	1.46	2.333	67.16	3.917	5.84	5.50	1.46
0.833	1.46	2.417	67.16	4.000	5.84	5.58	1.46
0.917	1.46	2.500	67.16	4.083	5.84	5.67	1.46
1.000	1.46	2.583	67.16	4.167	5.84	5.75	1.46
1.083	1.46	2.667	67.16	4.250	5.84	5.83	1.46
1.167	1.46	2.750	67.16	4.333	2.92	5.92	1.46
1.250	1.46	2.833	18.98	4.417	2.92	6.00	1.46
1.333	8.76	2.917	18.98	4.500	2.92	6.08	1.46
1.417	8.76	3.000	18.98	4.583	2.92	6.17	1.46

1.5008.763.08318.984.6672.926.251.461.5838.763.16718.984.7502.921 Max.Eff.Inten.(mm/hr)= 67.16 44.89 

 over (min)
 5.00
 10.00

 Storage Coeff. (min)=
 3.31 (ii)
 7.12 (ii)

 Unit Hyd. Tpeak (min)=
 5.00
 10.00

 Unit Hyd. peak (cms)= 0.26 0.14 \*TOTALS\* PEAK FLOW(cms)=0.36TIME TO PEAK(hrs)=2.75RUNOFF VOLUME(mm)=72.00TOTAL RAINFALL(mm)=73.00RUNOFF COEFFICIENT=0.99 0.02 2.75 37.36 0.376 (iii) 2.75 69.23 73.00 73.00 0.51 0.95 \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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 ( 0005) AREA QPEAK TPEAK R.V. 

 ID1= 1 (0010):
 2.08
 0.376
 2.75
 69.23

 + ID2= 2 (0009):
 0.52
 0.096
 2.75
 71.31

 \_\_\_\_\_ ID = 3 (0005): 2.60 0.472 2.75 69.64 NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY. \_\_\_\_\_ RESERVOIR( 0012) OVERFLOW IS OFF IN= 2---> OUT= 1 OUTFLOW STORAGE | OUTFLOW STORAGE DT= 5.0 min (cms)(ha.m.)(cms)(ha.m.)0.00000.00000.02700.09400.01800.07100.05400.1570 (cms) (ha.m.) ------
 AREA
 QPEAK
 TPEAK
 R.V.

 (ha)
 (cms)
 (hrs)
 (mm)

 INFLOW:
 ID= 2 (0005)
 2.600
 0.472
 2.75
 69.64

 OUTFLOW:
 ID= 1 (0012)
 2.600
 0.048
 3.83
 69.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.10

TIME SHIFT OF PEAK FLOW (min) = 65.00MAXIMUM STORAGE USED (ha.m.)= 0.1423 \_\_\_\_\_ FINISH \_\_\_\_\_ \_\_\_\_\_ SSSSS U U A (v 6.2.2015) V ۷ Ι L I SS UUAA V V L SS Ι V V U U AAAAA L V V I SS U U A A L I SSSSS UUUUU A A LLLLL VV ТТТТТ ТТТТТ Н Н Ү Ү М 000 000 ТΜ М Н Н ҮҮ 0 0 Т Т MM MM O 0 Т Т ΜO 0 0 Н Н Ү М 0 000 Т Т н н Υ М 000 М Developed and Distributed by Smart City Water Inc Copyright 2007 - 2022 Smart City Water Inc All rights reserved. \*\*\*\*\* DETAILED OUTPUT \*\*\*\*\* Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat Output filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\4 40aea5a-b7a6-478d-a213-2375092b36bd\s Summary filename: C:\Users\caeh076182\AppData\Local\Civica\VH5\1b3d6714-6e0c-44c8-81c0-c3d95a469d5d\4 40aea5a-b7a6-478d-a213-2375092b36bd\s DATE: 05-06-2025 TIME: 09:58:06 USER: COMMENTS:

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-----Filename: C:\Users\caeh076182\AppD READ STORM ata\Local\Temp\ ac3521ab-8657-4c27-9afb-46e264ee758f\46578424 Ptotal= 80.31 mm Comments: AES 6H\_100-Humber TIME TIME RAIN RAIN |' TIME RAIN TIME RAIN mm/hr |' hrs mm/hr | hrs hrs mm/hr | hrs mm/hr 0.00 0.00 1.75 27.30 3.50 11.24 5.25 1.61 0.25 1.61 | 2.00 27.30 | 3.75 6.42 5.50 1.61 0.50 1.61 | 2.25 73.88 | 4.00 6.42 | 5.75 1.61 0.75 1.61 | 2.50 73.88 | 4.25 3.21 6.00 1.61 1.00 1.61 | 2.75 20.88 | 4.50 3.21 1.25 9.64 | 3.00 20.88 | 4.75 1.61 1.50 9.64 3.25 11.24 5.00 1.61 \_\_\_\_\_ -----CALIB (ha) = 1.10STANDHYD ( 0007) Area |ID= 1 DT= 5.0 min | Total Imp(%)= 92.00 Dir. Conn.(%)= 92.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha) =1.01 0.09 Dep. Storage (mm)= 1.00 5.00 Average Slope (%)= 1.00 2.00 Length (m) =85.00 40.00 Mannings n 0.013 0.350 = 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	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61

	3       1.61         7       1.61         0       1.61         3       1.61         7       1.61         0       1.61         3       9.64         7       9.64         0       9.64		73.88 73.88 73.88 73.88 73.88 20.88 20.88 20.88 20.88 20.88	3.917         4.000         4.083         4.167         4.250         4.333         4.417         4.500         4.583         4.667         4.750	6.42   6.42   6.42   3.21   3.21   3.21   3.21   3.21   3.21	5.58 5.67 5.75 5.83 5.92 6.00 6.08 6.17	1.61
Max.Eff.Inten.( over Storage Coeff. Unit Hyd. Tpeak Unit Hyd. peak	(min) (min)= (min)=	5.00 2.62 5.00	(ii)	51.56 10.00 6.29 (ii) 10.00 0.15			
onie nya. peak	(()))	0.23		0.19	*тот	ALS*	
PEAK FLOW	(cms)=	0.21		0.01		219 (iii)	
TIME TO PEAK						.75	
				43.27		.42	
TOTAL RAINFALL		80.31		80.31		.31	
RUNOFF COEFFICI	ENT =	0.99		0.54	e	.95	
***** WARNING: STORA (i) CN PROCED CN* = 3 (ii) TIME STEP THAN THE 3 (iii) PEAK FLOW	URE SELECT 82.0 Ia (DT) SHOU STORAGE CO	ED FOR PE = Dep. S LD BE SMA EFFICIENT	RVIOUS Storage ALLER OR	LOSSES: (Above) EQUAL			
CALIB     STANDHYD ( 0008)   ID= 1 DT= 5.0 min		• •		Dir. Conn.	(%)= 9	1.00	
		IMPERVIOU	IS PE	RVIOUS (i)			
Surface Area	(ha)=	2.95		0.29			
Dep. Storage	(mm)=	1.00		5.00			
Average Slope	(%)=	1.00		2.00			
Length	(m)=	147.00		40.00			
Mannings n	=	0.013		0.350			
NOTE: RAIN	FALL WAS T	RANSFORME	D TO	5.0 MIN. T	IME STE	P.	
		TRA	NSFORME	D HYETOGRA	PH		
ттм				J' TTME			ΡΛΤΝ

TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	' hrs	mm/hr	hrs	mm/hr
0.083	0.00	1.667	9.64	3.250	20.88	4.83	1.61
0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(mm/hr)	= 73.88	51.56	
over (min)	5.00	10.00	
Storage Coeff. (min)	= 3.63 (i	i) 7.50 (ii)	
Unit Hyd. Tpeak (min)	= 5.00	10.00	
Unit Hyd. peak (cms)	= 0.25	0.13	
			*TOTALS*
PEAK FLOW (cms)	= 0.60	0.04	0.643 (iii)
TIME TO PEAK (hrs)	= 2.75	2.75	2.75
RUNOFF VOLUME (mm)	= 79.31	43.27	76.07
TOTAL RAINFALL (mm)	= 80.31	80.31	80.31
RUNOFF COEFFICIENT	= 0.99	0.54	0.95

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0007):	1.10	0.219	2.75	76.42
+ ID2= 2 ( 0008):	3.24	0.643	2.75	76.07
=======================================			=========	

ID = 3 (0006): 4.34 0.862 2.75 76.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| RESERVOIR( 0011)| 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 0.0290 0.1170 0.04300.15600.08500.2610 AREA QPEAK TPEAK (ha) (cms) (hrs) R.V. (mm) 4.3400.8622.754.3400.0853.92 INFLOW : ID= 2 ( 0006) 76.16 OUTFLOW: ID= 1 ( 0011) 75.92 PEAK FLOW REDUCTION [Qout/Qin](%)= 9.83 TIME SHIFT OF PEAK FLOW (min) = 70.00 (ha.m.)= 0.2606 MAXIMUM STORAGE USED \_\_\_\_\_ | CALIB STANDHYD ( 0009) | Area (ha)= 0.52 |ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 98.00 -----IMPERVIOUS PERVIOUS (i) Surface Area (ha)= Dep. Storage (mm)= 0.51 0.01 1.00 5.00 Average Slope (%)= 2.00 1.00 59.00 Length (m)= 40.00 Mannings n = 0.013 0.350 NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

> ---- TRANSFORMED HYETOGRAPH ----RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN TIME hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr 0.083 0.00 | 1.667 9.64 | 3.250 20.88 | 4.83 1.61 0.167 0.00 | 1.750 9.64 | 3.333 11.24 | 4.92 1.61 0.250 0.00 | 1.833 27.30 | 3.417 11.24 | 5.00 1.61 0.333 1.61 | 1.917 27.30 | 3.500 11.24 5.08 1.61 0.417 1.61 | 2.000 27.30 | 3.583 11.24 | 5.17 1.61 1.61 | 2.083 27.30 | 3.667 11.24 | 5.25 1.61 0.500 0.583 1.61 2.167 27.30 3.750 11.24 5.33 1.61 0.667 1.61 | 2.250 27.30 | 3.833 6.42 | 5.42 1.61

0.750 1.61 2.333 73.88 3.917 6.42 5.50 1.61

0.833

1.61 | 2.417 73.88 | 4.000 6.42 | 5.58 1.61

0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
1.167	1.61	2.750	73.88	4.333	3.21	5.92	1.61
1.250	1.61	2.833	20.88	4.417	3.21	6.00	1.61
1.333	9.64	2.917	20.88	4.500	3.21	6.08	1.61
1.417	9.64	3.000	20.88	4.583	3.21	6.17	1.61
1.500	9.64	3.083	20.88	4.667	3.21	6.25	1.61
1.583	9.64	3.167	20.88	4.750	3.21		

Max.Eff.Inten.(	mm/hr)=	73.88	51.56	
over	(min)	5.00	5.00	
Storage Coeff.	(min)=	2.10 (ii)	4.16 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	5.00	
Unit Hyd. peak	(cms)=	0.31	0.24	
				*TOTALS*
PEAK FLOW	(cms)=	0.10	0.00	0.106 (iii)
TIME TO PEAK	(hrs)=	2.75	2.75	2.75
RUNOFF VOLUME	(mm)=	79.31	43.27	78.59
TOTAL RAINFALL	(mm)=	80.31	80.31	80.31
RUNOFF COEFFICI	ENT =	0.99	0.54	0.98

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 82.0 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.

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CALIB					
STANDHYD ( 0010)	Area	(ha)=	2.08		
ID= 1 DT= 5.0 min	Total	Imp(%)=	92.00	Dir. Conn.(%)=	92.00
		IMPERVI	OUS	PERVIOUS (i)	
Surface Area	(ha)=	1.9	1	0.17	
Dep. Storage	(mm)=	1.00	9	5.00	
Average Slope	(%)=	1.00	9	2.00	
Length	(m)=	118.00	9	40.00	
Mannings n	=	0.01	3	0.350	

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	1.667	9.64   3	.250	20.88	4.83	1.61		

	0.167	0.00	1.750	9.64	3.333	11.24	4.92	1.61
	0.250	0.00	1.833	27.30	3.417	11.24	5.00	1.61
	0.333	1.61	1.917	27.30	3.500	11.24	5.08	1.61
	0.417	1.61	2.000	27.30	3.583	11.24	5.17	1.61
	0.500	1.61	2.083	27.30	3.667	11.24	5.25	1.61
	0.583	1.61	2.167	27.30	3.750	11.24	5.33	1.61
	0.667	1.61	2.250	27.30	3.833	6.42	5.42	1.61
	0.750	1.61	2.333	73.88	3.917	6.42	5.50	1.61
	0.833	1.61	2.417	73.88	4.000	6.42	5.58	1.61
	0.917	1.61	2.500	73.88	4.083	6.42	5.67	1.61
	1.000	1.61	2.583	73.88	4.167	6.42	5.75	1.61
	1.083	1.61	2.667	73.88	4.250	6.42	5.83	1.61
	1.167	1.61			4.333	3.21		1.61
	1.250		2.833	20.88	4.417	3.21	6.00	1.61
	1.333		2.917		4.500			1.61
	1.417		3.000		4.583			1.61
	1.500		3.083		4.667			1.61
	1.583	9.64	3.167	20.88	4.750	3.21		
Max.Eff	.Inten.(mm				51.56			
		nin)			10.00			
Storage		nin)=				ii)		
	d. Tpeak (r				10.00			
Unit Hy	d.peak (	cms)=	0.27		0.14			
							TALS*	
PEAK FL	•	cms)=	0.39		0.02		.415 (iii	)
TIME TO	•	nrs)=			2.75		2.75	
RUNOFF		(mm)=			43.27		5.43	
TOTAL R		(mm)=	80.31		80.31		0.31	
RUNOFF	COEFFICIEN	Γ =	0.99		0.54	(	0.95	
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!								
(1) 0								
• •	N PROCEDURI							
	CN* = 82		-	•	• •	)		
	IME STEP (I				EQUAL			
	HAN THE STO							
(111) P	EAK FLOW DO	DES NOT 1	NCLUDE E	BASEFLOW	IF ANY.	•		
ADD HYD (	0005)							
1 + 2 =		٨٢	REA QI		TDEAV	D V		
	ا د	Ar 7 k	va) (4	cmc)	(hnc)	(mm)		
	1 ( 0010	ז) ר • י	na) (0 08 0.4	115 <i>)</i>	(111'S) 2 7⊑	(IIIII) 76 / 2		
	2 ( 0009	γ. Ζ. )· Ω	52 0.1	+1) 106	2.75	70.45		
	===========							
	3 ( 0005				2.75	76.86		
10 -		,. 2.		~~-	,,	, 0.00		

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.								
RESERVOIR( 0012)    IN= 2> OUT= 1     DT= 5.0 min	OUTFLOW (cms)	STORAGE   (ha.m.)	(cms)	(ha.m.)				
			0.0270					
	0.0180	0.0710	0.0540	0.1570				
INFLOW : ID= 2 ( 000 OUTFLOW: ID= 1 ( 003 PEAK	(ha) 05) 2.60	(cms) 0 0.52 0 0.05	4 3.83	(mm) 76.86 76.48				
TIME SHIFT OF PEAK FLOW (min)= 65.00								
MAXIN	MUM STORAGE	USED	(ha.m.)=	0.1565				