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Maple Bridge Subdivision, Phase 2

PRELIMINARY STORMWATER MANAGEMENT REPORT

Mason Homes Limited

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Prepared by:

Tatham Engineering Limited
645 Veterans Drive, Unit D
Barrie, Ontario L4N 9H8
T 705-733-9037
tathameng.com

Prepared for:

Mason Homes Limited
70 Innovator Avenue, Unit 1
Stouffville, Ontario L4A 0Y2

Authored by:	Reviewed by:
	
Lawrence Carretas, B.A.Sc., EIT Engineering Intern	John Gore, B.Eng., P.Eng. Engineer

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Issue	Date	Description
1	April 18, 2024	Issued for Draft Plan Approval
2	August 21, 2025	Re-Issued for Draft Plan Approval

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1 Introduction

Tatham Engineering Limited (Tatham) was retained by Mason Homes Limited to prepare a Preliminary Stormwater Management (SWM) Report in support of a Draft Plan of Subdivision application for Phase 2 of the Maple Bridge Subdivision located northeast of the Centre Road and Oakside Drive intersection in the Township of Uxbridge (Township), within the Regional Municipality of Durham (Region).

1.1 REPORT OBJECTIVE

This report was prepared to demonstrate the proposed development will not adversely affect local stormwater quantity or stormwater quality conditions. This will be accomplished by evaluating the effect of the proposed development on local drainage conditions and, where necessary, providing solutions to mitigate any adverse impacts. The feasibility of providing appropriate SWM controls will be demonstrated.

1.2 GUIDELINES & BACKGROUND REPORTS

This report is prepared in consideration of the following guidelines and documents:

- The Ministry of the Environment, Conservation, and Parks (MECP, formerly known as Ministry of Environment), *Stormwater Management Practices Planning and Design Manual* (2003);
- The Ministry of the Environment, Conservation, and Parks (MECP, formerly known as Ministry of Environment), *Lake Simcoe Protection Plan* (LSPP) (2009);
- Lake Simcoe Region Conservation Authority (LSRCA), *Technical Guidelines for Stormwater Submissions* (2022);
- Lake Simcoe Region Conservation Authority (LSRCA), *Phosphorus Offsetting Policy* (2025);
- The Township of Uxbridge, *Zoning By-Law Number 81-19 (As Amended) of the Corporation of the Township of Uxbridge*, Township of Uxbridge (2019);
- The Township of Uxbridge, *Stormwater Management Master Plan - Uxbridge Urban Area and Hamlet of Coppin's Corners* (2016); and
- Regional Municipality of Durham, *Design and Construction Specifications for Regional* Services (2023).

This report is prepared in consideration of the following site-specific reports:

- GHD, *Hydrogeological Assessment Addendum* (February 2025);

- Tatham Engineering Limited, *Maple Bridge Subdivision, Phase 2: Functional Servicing Report* (August 2025); and
- Tatham Engineering Limited, *Maple Bridge Subdivision, Phase 2: Natural Hazards Assessment* (October 2024).

2 Development Site

2.1 LOCATION

As illustrated in Figure 1, the subject site is located at the property known municipally as 7309 Centre Road, Township of Uxbridge.

As per the boundary survey completed by H.F. Grander Co. Ltd. in October 2022, the site is legally described as:

(Parts 1, 2, 3, Plan 40R-21667
Save & Except Parts 1, 2, 3, & 4, Plan 40R-23402,
Save & Except Parts 1, 2, 3, 4, 5, 6, & 7, Plan 40R-23403,
And Save & Except Plan 40M-2256)
Of Part of Lot 33, Concession 6,
Geographic Township of Uxbridge,
Now in the, Township of Uxbridge,
Regional Municipality of Durham

2.2 SITE DESCRIPTION

2.2.1 Zoning & Land Uses

Based on the Township's current Official Plan the property is designated 'Future Residential Area' and 'Natural Hazard Area'. Based on the Township's Zoning By-law the property is within a Rural Zone (RU) and Environmental Protection Zone (EP-27).

The site is located within the LSRCA watershed and is partially located within the LSRCA regulated area due to natural hazards associated with the Uxbridge Brook.

2.2.2 Topography

Information relating to existing topography, ground cover, and drainage patterns was obtained through a review of relevant background studies, available plans, base mapping, and topographic surveys. A detailed topographic survey of the site was completed by IBW Surveyors in September 2019. This survey has been reviewed and compared to other available contour mapping and appears to be sufficient for preliminary design. If required, additional topographic survey will be completed during the detailed design stage.

The subject property is approximately 13.58 ha in area and consists mainly of agricultural croplands with areas of woodland. It is bound by existing agricultural lands to the north and southwest, Tributary 6.1 of the Uxbridge Brook to the south and east, Tributary 4.0 of the Uxbridge Brook to the north, and Centre Road to the west.

Under existing conditions, runoff from the Phase 2 lands generally flow overland in an east and southeast direction towards Tributary 6.1 of the Uxbridge Brook, which meanders between the subject site and neighbouring Phase 1 lands immediately south of the watercourse.

2.2.3 Geotechnical & Hydrogeological Setting

The *Hydrogeological Assessment Addendum* identified the subsurface conditions as topsoil underlain by a thin layer of silty sand/sandy silt and native glacial till. Groundwater monitoring well readings were recorded in four monitoring wells at depths ranging from 0.57 to 3.65 mbgs, indicating groundwater generally flows southeast across the site.

Based on infiltration testing results conducted by GHD, in-situ infiltration rates range from 39 to 56 mm/hr. Design infiltration rates were established to range from 16 to 23 m/hr which was utilized in the low impact development design (LID) calculations described in Section 5.5 and 5.6 of this report.

Due to high groundwater levels, LID measures will be implemented in select areas of the proposed development only. Refer to the Conceptual Soakaway Pit Locations drawing in Appendix F for reference. Opportunities to increase LID measures on-site will be assessed during detailed design.

2.3 PROPOSED DEVELOPMENT

2.3.1 Land Use

The proposed residential development consists of the following:

- 82 townhouse units;
- 154 single family dwellings; and
- a 0.79 ha stormwater management block.

The Draft Plan also includes Open Space blocks, Walkway blocks, an Environmental Protection block, and a Future Road Connection block.

The proposed development surrounds an existing 0.9 ha residential property fronting Centre Road (owned by others). Mason Homes Limited intends to purchase the property in the future with the intention of developing it with a similar built form to what is proposed for the subject site. The proposed Draft Plan of Subdivision does not include development of this property. However, the proposed preliminary SWM plan for the subject site accounts for the development of this 0.9 ha parcel.

Refer to Appendix A for the proposed Draft Plan.

2.3.2 Access

The site will be accessed from two new connections to existing roadways. The west connection will be made from Street 'A,' which is a 20 m right-of-way, in the northwest corner of the development to Centre Road. The east connection will be made from Street 'A' in the northeast corner of the development to Oakside Drive.

2.3.3 Internal Roads

The internal roadways will be a combination of 20 m road allowances, 17 m road allowances and 7.5 m laneways.

3 Existing Drainage Conditions

3.1 BACKGROUND INFORMATION

Existing topography, ground cover, soil condition, land use and drainage patterns for the site and the surrounding area were established through a review of available aerial photography, topographic survey and relevant background reports.

3.2 DRAINAGE PATTERNS

The development site consists of approximately 14.5 ha of undeveloped agriculture land with forested areas along the property boundaries. The site generally drains east and southeast towards Tributary 6.1 of the Uxbridge Brook at a gentle slope (2% to 5%), while a small portion of the lands drains north towards Tributary 4.0 of the Uxbridge Brook at a significantly steeper slope (upwards to 30%+).

Two existing conditions drainage catchments (Catchment 100 and 101) have been delineated using base mapping and detailed topographic survey information and are illustrated on the Pre-Development Drainage Plan (Drawing DP-1) enclosed for reference.

- Catchment 100 is approximately 0.62 ha and consists of woodland, meadows, and cultivated lands. The catchment generally drains north to Tributary 4.0 of Uxbridge Brook, which has been denoted as Outlet #2.
- Catchment 101 is approximately 13.85 ha and consists of woodland, lawns, meadows, cultivated lands, and an existing residential development at 7309 Centre Road. The catchment generally drains south and east to Tributary 6.1 of Uxbridge Brook, which has been denoted as Outlet #1.

3.3 HYDROLOGY

In accordance with the Township and LSRCA requirements, a Visual OTTHYMO (VO6.2) model has been prepared to estimate the pre-development peak flows for the 1:2-year through 1:100-year storm events. Site-specific Intensity-Duration Frequency (IDF) rainfall data was generated using the *IDF Curve Look-up Tool* in accordance with Township standards. The design storms were modeled with a 4-hour CHI, 12-hour SCS, and 24-hour SCS distribution under AMCII conditions. In addition, the Regional storm (Hurricane Hazel) storm has been modelled under AMCIII conditions, in accordance with LSRCA requirements.

The existing condition peak flows from the site at Outlet #1 and Outlet #2 are summarized in Table 1 while detailed model results are included in Appendix B for reference. Detailed

calculations of the existing condition hydrological modelling parameters are also included in Appendix B for reference.

Table 1: Existing Conditions Peak Flow Summary

DESIGN STORM	OUTLET #1 (m^3/s)			OUTLET #2 (m^3/s)		
	4-hr CHI	12-hr SCS	24-hr SCS	4-hr CHI	12-hr SCS	24-hr SCS
25 mm		0.03			0.00	
1:2-year	0.06	0.13	0.17	0.01	0.02	0.02
1:5-year	0.11	0.24	0.30	0.01	0.03	0.04
1:10-year	0.16	0.32	0.40	0.02	0.04	0.05
1:25-year	0.23	0.44	0.54	0.03	0.05	0.07
1:50-year	0.28	0.53	0.66	0.04	0.07	0.09
1:100-year	0.34	0.63	0.78	0.04	0.08	0.10
Hurricane Hazel		1.48			0.08	

Hurricane Hazel peak flows presented in this table are representative of AMCIII conditions.

4 Stormwater Management Design Criteria

The SWM plan is subject to review and approval from the Township and the LSRCA. The SWM plan has been developed in accordance with the following Township and LSRCA design criteria:

Quantity Control

Post-development peak flow rates must be controlled to pre-development rates or less for storm events up to and including the 1:100-year event to ensure no adverse impacts for downstream landowners at all site outlets.

Conveyance

Under proposed conditions, the 1:100-year return frequency design storm from subject property must be safely conveyed to the site outlet. In addition, the Regional Storm peak flows for the upstream development must be safely conveyed through the site to the site outlet.

Quality Control

Water quality controls must be provided to satisfy the *MECP Stormwater Management Planning and Design Manual*. Enhanced level water quality protection, which corresponds to 80% long term suspended solids (TSS) removal, is required.

Runoff Volume Control

In accordance with LSRCA policies, any works meeting the definition of 'major development' are required to meet the volume control requirements as outlined in Section 3.2.4 of the *Technical Guidelines for Stormwater Management Submissions*. Best efforts must be demonstrated to infiltrate, filter or re-use the 25 mm storm event runoff from impervious areas on site.

Water Balance

As the proposed development is categorized as a 'major development' under the LSPP, best efforts must be demonstrated towards maintaining pre-development infiltration rates under post-development conditions.

Phosphorus Treatment & Mitigation

The proposed development is categorized as a 'major development' and in accordance with LSRCA requirements, the site will be subject to *the Lake Simcoe Phosphorus Offsetting Policy* which requires all 'major' development projects to control post-development phosphorus loading rates to pre-development rates. Any remaining phosphorus loadings that cannot be mitigated will be subject to a cash-contribution for off-site mitigation.

Erosion & Sediment Control

An erosion and sediment control plan is required for the subject development to demonstrate erosion mitigation measures to manage the risk of sediment transport downstream. In addition,

the LSRCA requires runoff generated from the 25 mm storm be detained and released over a period of at minimum 24 hours as described in Section 3.4 of the *Technical Guidelines for Stormwater Management Submissions*.

5 Stormwater Management Plan

Under proposed conditions, the 14.5 ha site will generally be graded to convey runoff to the proposed SWM pond at the east end of the development.

5.1 DRAINAGE CONDITIONS

The subject property has been divided into four drainage catchments under proposed conditions (Catchments 201, 202, and 203) as illustrated on the Post-Development Drainage Plan (Drawing DP-2) enclosed for reference.

- Catchment 201 is approximately 12.44 ha and includes a majority of the proposed development. Minor flows from this catchment will be conveyed to the SWM pond via storm sewer while major flows will be conveyed to the pond overland via the road right-of-way. The design of the internal storm sewer will occur at detailed design. Attenuated peak flows are discharged to Outlet #1 located south of the site, which is a sufficient outlet. Catchment 201 was delineated to maximize peak flows contributing to the SWM pond by accounting for rooftop and driveway drainage from the proposed lots located within Catchment 202. An assumed imperviousness of 100% was used for the full buildout of the 0.91 ha residential block to accommodate for future development.
- Catchment 202 is approximately 1.60 ha and consists of rear yards, landscape, and forested areas. This catchment will drain uncontrolled to Outlet #1 (Uxbridge Brook Tributary 6.1). Due to grading constraints, Catchment 202 was delineated such that rooftop drainage from lots located within this catchment will be conveyed to the SWM pond.
- Catchment 203 is approximately 0.43 ha and consists of a small portion of Street 'A' and an open space block. Due to grading constraints this catchment will drain uncontrolled to Outlet #1 (Uxbridge Brook Tributary 6.1).

It is noted that per LSRCA *Technical Guidelines for Stormwater Submission*, peak flow rates generated on site must be conveyed to a sufficient outlet. Due to site constraints, Outlet #2 (Uxbridge Brook Tributary 4.0) does not meet the requirements for a sufficient outlet since flows would drain through private property to the north. Therefore, the site been graded to drain all generated peak flows to Outlet #1 (Uxbridge Brook Tributary 6.1). Since peak flows from Catchments 201, 202, and 203 are discharged directly to Outlet #1, this requirement is met.

The hydrologic modelling parameters for proposed conditions have been calculated based on the proposed site plan, standard ROW cross-sections, and the maximum lot coverages defined in the *Zoning By-Law Number 81-19 (As Amended) of the Corporation of the Township of*

Uxbridge and engineering judgement. The preliminary proposed condition hydrologic parameter calculations are included in Appendix C for reference.

5.2 QUANTITY CONTROL

As the proposed development will result in an increase in impervious areas (roads, buildings and driveways), on-site stormwater quantity controls are required to reduce post-development peak flow rates to the allowable release rates or less.

Water quantity controls will be provided by an end-of-pipe SWM pond to attenuate proposed peak flows to pre-development levels. Due to grading constraints, Catchments 202 and 203 will drain uncontrolled to Outlet #1. As such the SWM pond has been sized to over-control the peak flows from Catchment 201 such that the post-development peak flows at the site outlets are below pre-development peak flows, accounting for the uncontrolled flow.

Peak flow attenuation will be provided by the proposed SWM wet pond which consists of a 120 mm orifice plate with an elevation of 267.00 m, a ditch inlet catch basin (DICB) with top of grate at elevation of 267.80 with a secondary 370 mm dia. orifice plate with invert of 267.00 m, an outlet pipe with invert of 266.85 m, and an emergency overflow weir set at 268.90 m. During the 1:100-year design storm, the pond will provide an active storage volume of 6,442 m^3 at an elevation of 268.52 m with 0.78 m of freeboard. During Regional Storm Hurricane Hazel (AMCIII conditions), the pond will provide 8,809 m^3 of storage at elevation 269.00 m with 0.30 m freeboard.

A summary of additional preliminary design details is provided below:

- Bottom of Wet Cell: 265.00 m
- Bottom of Forebay: 266.00 m
- Permanent Pool Elevation: 267.00 m
- Top of Pond Elevation: 269.30 m
- Total Storage at Top of Pond Elevation: 10,646 m^3

The emergency overflow spillway has been designed to provide safe conveyance of the uncontrolled 1:100-year storm event (Regulatory storm) in the event the outlet structures are fully blocked. The weir will safely convey the flows at an elevation of 269.10 m.

Additional outlet design details will be provided at the detailed design stage.

Table 2: SWMF #1 Operating Characteristics

DESIGN STORM	STORAGE VOLUME (m^3)			DISCHARGE (m^3/s)			WATER ELEVATION (m)		
	4-hr CHI	12-hr SCS	24-hr SCS	4-hr CHI	12-hr SCS	24-hr SCS	4-hr CHI	12-hr SCS	24-hr SCS
25 mm		1,241			0.02			267.36	
1:2-year	1,846	2,584	2,860	0.02	0.03	0.04	267.51	267.69	267.75
1:5-year	2,712	3,405	3,750	0.04	0.08	0.13	267.72	267.88	267.95
1:10-year	3,177	3,839	4,228	0.06	0.15	0.26	267.82	267.97	268.06
1:25-year	3,681	4,380	4,977	0.12	0.31	0.34	267.94	268.09	268.22
1:50-year	3,913	4,893	5,704	0.16	0.34	0.36	267.99	268.20	268.37
1:100-year	4,134	5,521	6,442	0.23	0.36	0.38	268.04	268.33	268.52
Hurricane Hazel		8,809			1.72			269.00	

Hurricane Hazel peak flows presented in this table are representative of AMCIII conditions.

The preliminary stage-storage-discharge tables for the SWM pond are included in Appendix D for reference. Refer to the Stormwater Management Facility Plan (Drawing PND-1), appended, for preliminary design details. It is noted that the outlet elevation of the pond (266.85 m) has been set above the Regional flood elevation (266.60 m), as shown on Drawing PND-1.

Due to the implementation of on-site water quantity controls, post-development peak flow rates at Outlet #1 and Outlet #2 are less than or equal to the existing peak flows leaving the site for the selected design storms. A summary of post-development peak flows at Outlet #1 and Outlet #2 is provided in Table 3 while detailed model results are included in Appendix C for reference.

Table 3: Post-Development Conditions Peak Flow Summary

DESIGN STORM	OUTLET #1 (m^3/s)			OUTLET #2 (m^3/s)		
	4-hr CHI	12-hr SCS	24-hr SCS	4-hr CHI	12-hr SCS	24-hr SCS
25 mm		0.02 *(0.03)*			0.00 *(0.00)*	
1:2-year	0.04 *(0.06)*	0.07 *(0.13)*	0.09 *(0.17)*	0.00 *(0.01)*	0.00 *(0.02)*	0.00 *(0.02)*
1:5-year	0.07 *(0.11)*	0.11 *(0.24)*	0.14 *(0.30)*	0.00 *(0.01)*	0.00 *(0.03)*	0.00 *(0.04)*
1:10-year	0.09 *(0.16)*	0.16 *(0.32)*	0.28 *(0.40)*	0.00 *(0.02)*	0.00 *(0.04)*	0.00 *(0.05)*
1:25-year	0.13 *(0.23)*	0.34 *(0.44)*	0.41 *(0.54)*	0.00 *(0.03)*	0.00 *(0.05)*	0.00 *(0.07)*
1:50-year	0.18 *(0.28)*	0.40 *(0.53)*	0.51 *(0.66)*	0.00 *(0.04)*	0.00 *(0.07)*	0.00 *(0.09)*
1:100-year	0.25 *(0.34)*	0.49 *(0.63)*	0.61 *(0.78)*	0.00 *(0.04)*	0.00 *(0.08)*	0.00 *(0.10)*
Hurricane Hazel		1.97 *(1.48)*			0.00 *(0.08)*	

Hurricane Hazel peak flows presented in this table are representative of AMCIII conditions.
Values in *italics* represent existing peak flow rates.

5.3 CONVEYANCE

As previously mentioned, major and minor peak flows generated from the upstream development will be collected internally and conveyed to the SWM pond. The Regulatory storm peak flows must be safely conveyed through the site to the site outlet. In addition, the design of the internal storm sewer will occur at detailed design.

Under an emergency scenario in which the storm sewers are 100% blocked, a conveyance channel located in the 6.0 m servicing easement (between lots 51 and 52) is proposed to provide safe conveyance of flows to the wet pond. The Regulatory storm (the uncontrolled 1:100-year 24-hour SCS storm event of 3.6 m^3/s) can be sufficiently conveyed through the conveyance channel. Supporting calculations are provided in Appendix C.

5.4 QUALITY CONTROL

"Enhanced" level water quality control corresponding to 80% TSS removal is required for developed areas of the site. Water quality controls for the majority of the development will be provided by the SWM pond which has been designed as a wet pond with a sediment forebay to provide adequate water quality storage volumes based on the MOE *Stormwater Management Practices Planning and Design Manual* (2003) Table 3.2. The wet pond has been designed to

provide "Enhanced" Level 1 water quality treatment for all contributing drainage from the upstream catchments.

The SWM pond was designed using a drainage area of 12.4 ha and an imperviousness of 71% contributing from the subject development. Therefore, based on Table 3.2 of the MOE *Stormwater Design Manual*, the required water quality storage volume is 176 m^3/ha (or 2,194 m^3 for the 12.4 ha area). Of this volume, 1,696 m^3 is required for the permanent pool and 498 m^3 (or 40 m^3/ha for the 12.4 ha area) is required for extended detention. The provided permanent pool and extended detention volumes are 3,940 m^3 and 3,068 m^3 respectively. As such the pond is adequately sized to provide the required "Enhanced" level water quality control. Detailed water quality calculations are included in Appendix E for reference. Based on the available groundwater information, it is noted the SWM pond may need to be lined to avoid groundwater interaction with the permanent pool. This will be further assessed during detailed design.

In addition, a drawdown time of 40 hours and 69 hours is provided for the 25 mm storm event and the extended detention zone respectively, which satisfies LSRCA's Stream Erosion Control requirements in Section 3.4 of the *Technical Guidelines for Stormwater Management Submissions*.

Catchment 202 consists of only rear yards and forested areas and as such, water quality treatment is not required. Due to grading constraints, runoff from Catchment 203 is unable to be conveyed to the SWM pond and will be released uncontrolled to Outlet #1. The size of this catchment has been minimized through the site grading to reduce the untreated area. This catchment will be further assessed at detailed design to further minimize the uncontrolled area, if possible.

5.5 RUNOFF VOLUME CONTROL

In accordance with LSRCA requirements, projects defined as 'major developments' are required to meet the volume control requirements as outlined in Section 3.2.4 of the *Technical Guidelines for Stormwater Management Submissions*. As such, best efforts must be provided to infiltrate, filter, or re-use runoff generated from impervious areas on site.

Due to constraints posed by the latest available high groundwater data, it is anticipated that infiltration of the full 25 mm storm event over impervious areas is unfeasible. Refer to the Conceptual Soakaway Pit Locations drawing in Appendix F for reference, for a depiction of feasible infiltration practice locations on site.

As such, the retention of the 25 mm storm for rooftops has been proposed where feasible based on groundwater levels. Where feasible, lot-level soakaway pits are proposed to capture the 25 mm runoff from the rooftops of the single-family dwelling units and 50% of the 25 mm rooftop

runoff from the townhouse units. This corresponds to 0.77 ha of impervious drainage area to the soakaway pits. The proposed soakaway pits will provide a total storage volume of 195 m^3. As the total impervious area of the site is 8.2 ha, the soakaway pits will provide runoff control equivalent to the 2.4 mm storm across the site. This design satisfies "Alternative #3" criteria as specified in Section 3.2.6 of the *Technical Guidelines for Stormwater Management Submissions*.

Per recommendations of the *Hydrogeological Assessment Addendum*, the infiltration rate used for the design of the soakaway pits is 16 mm/hr which equates to a drawdown time of 30 hours.

Preliminary soakaway pit sizing and drawdown time calculations are included in Appendix F for reference. Preliminary cross-sectional details are provided in the Conceptual Soakaway Pit Locations drawing enclosed in Appendix F of this report.

It is noted that the 0.9 ha residential block was excluded from this runoff volume controls assessment since infiltration is provided on an individual lot-level basis. Should this block be assumed by Mason Homes Limited in the future, the feasibility of runoff volume controls for this block will be assessed.

Additional opportunities to increase infiltration/filtration will be explored in support of the detailed design such as additional soakaway pits or other infiltration features where feasible. Design details including locations and sizing will be confirmed accordingly.

5.6 WATER BALANCE

In accordance with the LSPP, an evaluation of the anticipated changes in the water balance between pre-development and post-development conditions has been included to demonstrate how the proposed SWM control measures will minimize changes to water balance across the site.

GHD Group Pty Ltd (GHD) has prepared a water balance as part of their *Hydrogeological Assessment Addendum*. As part of the assessment, annual runoff and infiltration volumes were calculated under pre- and post-development conditions, and post-development conditions with mitigation measures. Per their assessment, the pre-development infiltration volume is 20,187 m^3/year and the post-development infiltration volume is 6,171 m^3/year which represents an approximately 70% decrease.

The proposed soakaway pits can capture a maximum volume of 195 m^3, equivalent to the 25 mm storm event captured on rooftops where infiltration is feasible. This is equivalent to an annual volume capture after evapotranspiration of 5,088 m^3/year which brings the post-development infiltration volume with mitigation measures to 11,259 m^3/year. This represents a 44% reduction in annual infiltration, representing best efforts to increase post-development infiltration and mitigate the annual infiltration deficit as much as feasibly possible.

Refer to the GHD's report under separate cover for additional details.

5.7 PHOSPHORUS TREATMENT & MITIGATION

An assessment of the total phosphorus (TP) loading from the site under existing and proposed conditions has been completed using the Low Impact Development Treatment Train Tool (LID-TTT).

It is noted that the 0.9 ha residential block was excluded from this phosphorus loading assessment since controls will be provided on an individual lot-level basis in addition to the SWM pond. Should this block be assumed by Mason Homes Limited in the future, the phosphorus loading for this block will be assessed.

Existing Conditions

Under existing conditions, the site has been modelled as paved surface (TP concentration of 0.23 mg/L), landscaped area (TP concentration of 0.32 mg/L), row crop (TP concentration of 0.23 mg/L), open space (TP concentration of 0.20 mg/L), and forest (TP concentration of 0.23 mg/L). The existing TP loading rates at Outlet #1 and Outlet #2 are 2.14 kg/year and 0.10 kg/year respectively, resulting in a total existing TP loading rate of 2.25 kg/year.

Proposed Conditions

Under proposed conditions, the site has been modelled as paved surface, rooftop (TP concentration of 0.09 mg/L), landscaped area, forest, and wet pond (TP concentration of 0.81 mg/L). The proposed TP loading rate without mitigation at Outlet #1 is 15.74 kg/year. Due to site grading, the TP loading rate at Outlet #2 is reduced to 0 kg/year. Therefore, the total proposed TP loading rate on a site-basis is 15.74 kg/year.

Proposed Conditions with Mitigation

TP mitigation for the site will be provided via lot-level soakaway pits and the wet pond which have median TP removal efficiency rates of 87% and 63% respectively.

Select rooftop areas corresponding to 0.77 ha from Catchment 201 will drain to the lot-level soakaway pits while the remaining 10.76 ha (excluding the 0.9 ha residential block) will drain directly to the wet pond. Due to grading constraints Catchments 202 and 203 are released uncontrolled to Outlet #1.

Therefore, the estimated total annual post-development TP loading rate is reduced to 5.59 kg/year which represents a 64% net reduction. The remaining 36% TP removal can be achieved through additional soakaway pits, enhanced grass swales, and/or filtration treatment device(s) such as a Jellyfish Filter unit or approved equivalent, if feasible. Additional treatment methods will be explored at detailed design. Per the *Lake Simcoe Phosphorus Offsetting Policy*,

any remaining TP loadings that cannot be mitigated will be subject to a cash-contribution for off-site mitigation.

A summary of the TP loadings under existing, proposed, and proposed with mitigation scenarios is provided in Table 4 below. The detailed LID-TTT results are provided in Appendix G for reference.

Table 4: Phosphorus Loading Summary

SCENARIO		AREA (ha)	PHOSPHORUS LOADING (kg/year)
Outlet #1	Pre-Development	12.94	2.15
	Post-Development (Without Controls)	13.56	15.74
	Post-Development (With Controls)	13.56	5.59
Outlet #2	Pre-Development	0.62	0.10
	Post-Development (With/Without Controls)	0	0
Total Pre-Development		**13.56**	**2.25**
Total Post-Development (Without Controls)		**13.56**	**15.74**
Total Post-Development (With Controls)		**13.56**	**5.59**

Note: Existing and proposed conditions TP loading areas exclude the 0.91 ha residential block.

5.8 EROSION & SEDIMENT CONTROL

Erosion and sediment control will be implemented for all construction activities within the subject site including vegetation clearing, topsoil stripping, stockpiling of materials, site access construction, grading and servicing. The basic principles considered to minimize erosion and sedimentation, and the potential negative environmental impacts include:

- minimize disturbance activities where possible;
- expose the smallest possible land area to erosion for the shortest amount of time;
- institute erosion control measures as required immediately;
- implement sediment control measures before the outset of construction activities; and
- carry out regular inspection of erosion/sediment control measures and repair or maintain them, as necessary.

Erosion and sediment control measures shall be implemented in accordance with the *Erosion & Sediment Control Best Management Practices Guide* and are to include the following:

- sediment control fence;
- construction access mat;
- heavy-duty silt fence surrounding stripping and material stock pile areas;
- catch basin filter screens; and
- sediment traps placed in all existing and proposed catch basins adjacent to the site.

Regular inspection of control measures will be completed through a monitoring and mitigation plan, with regular repairs made as necessary. An erosion and sediment control plan will be developed during the detailed design stage.

6 Summary

This report has been prepared to document the preliminary drainage and SWM plan for the proposed development. The SWM plan ensures the development can be constructed in accordance with all applicable municipal and provincial guidelines while minimizing the impact of the development on local surface water conditions. The SWM design criteria described in Section 5 of this report will be achieved as detailed below.

- Post-development peak flow rates will be controlled to pre-development rates or less for all storm events at Outlet #1 and Outlet #2. Water quantity storage will be provided via wet SWM pond with sufficient storage to attenuate the proposed peak flows to below pre-development levels.
- "Enhanced" Level 1 water quality controls corresponding to 80% TSS removal will be provided for the proposed development via the wet SWM pond.
- Best efforts have been provided to mitigate the water balance deficit due to the proposed development. The lot-level soakaway pits will provide 25 mm of storage for the treated areas, resulting in an equivalent of 2.4 mm of runoff volume control across the total impervious area of the site. Additional infiltration measures will be explored and implemented where feasible during detailed design.
- Best efforts have also been provided to mitigate phosphorus loadings on site. The proposed wet SWM pond and lot-level soakaway pits will provide approximately 64% reduction in annual phosphorus loading for the site compared to proposed conditions without any mitigation measures. Per the Lake *Simcoe Phosphorus Offsetting Policy*, any remaining phosphorus loadings that cannot be mitigated will be subject to a cash-contribution for off-site mitigation. Additional treatment options will be explored at detailed design.
- A series of erosion and sediment controls including heavy duty silt fence and construction access mats will be implemented for all construction activities.

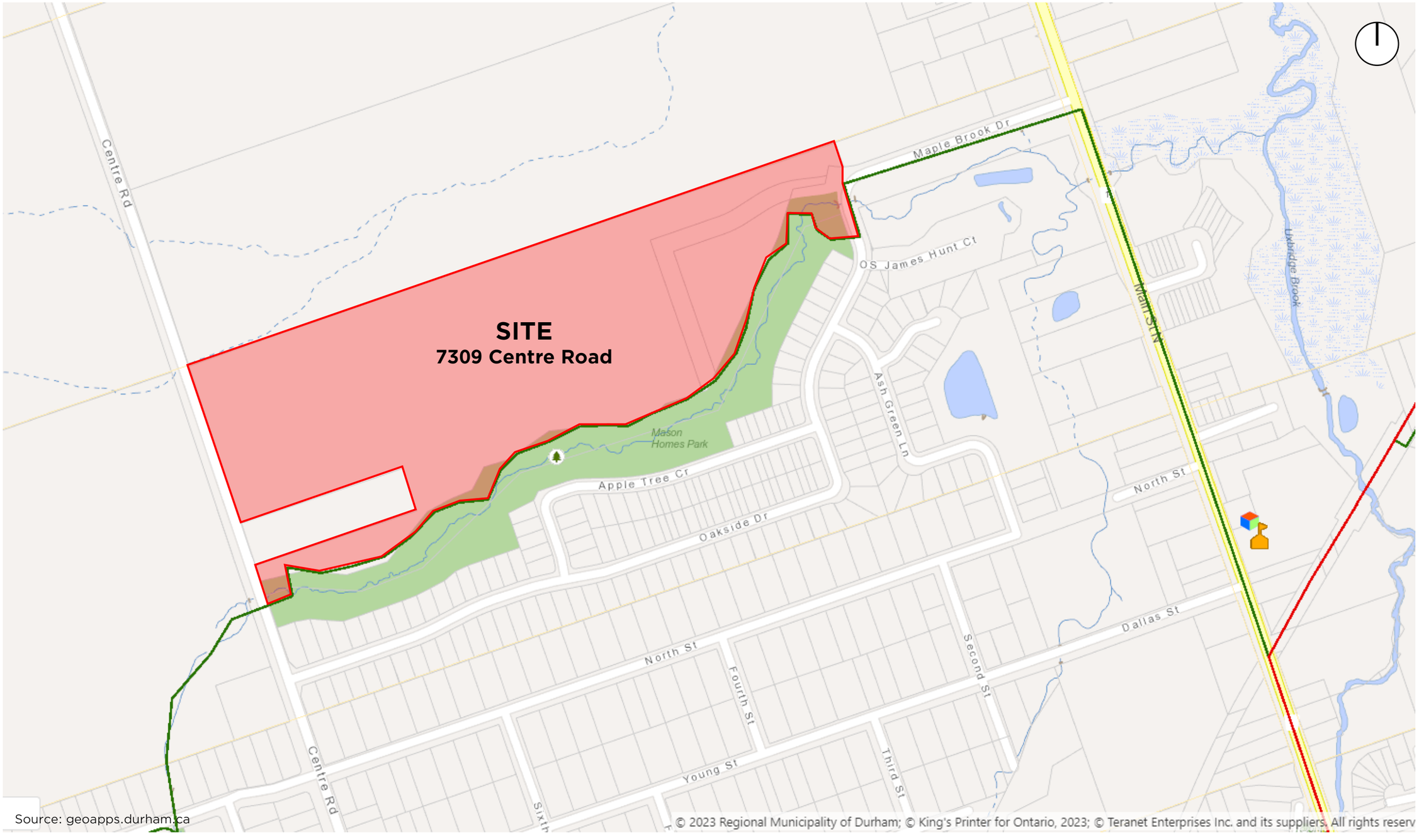
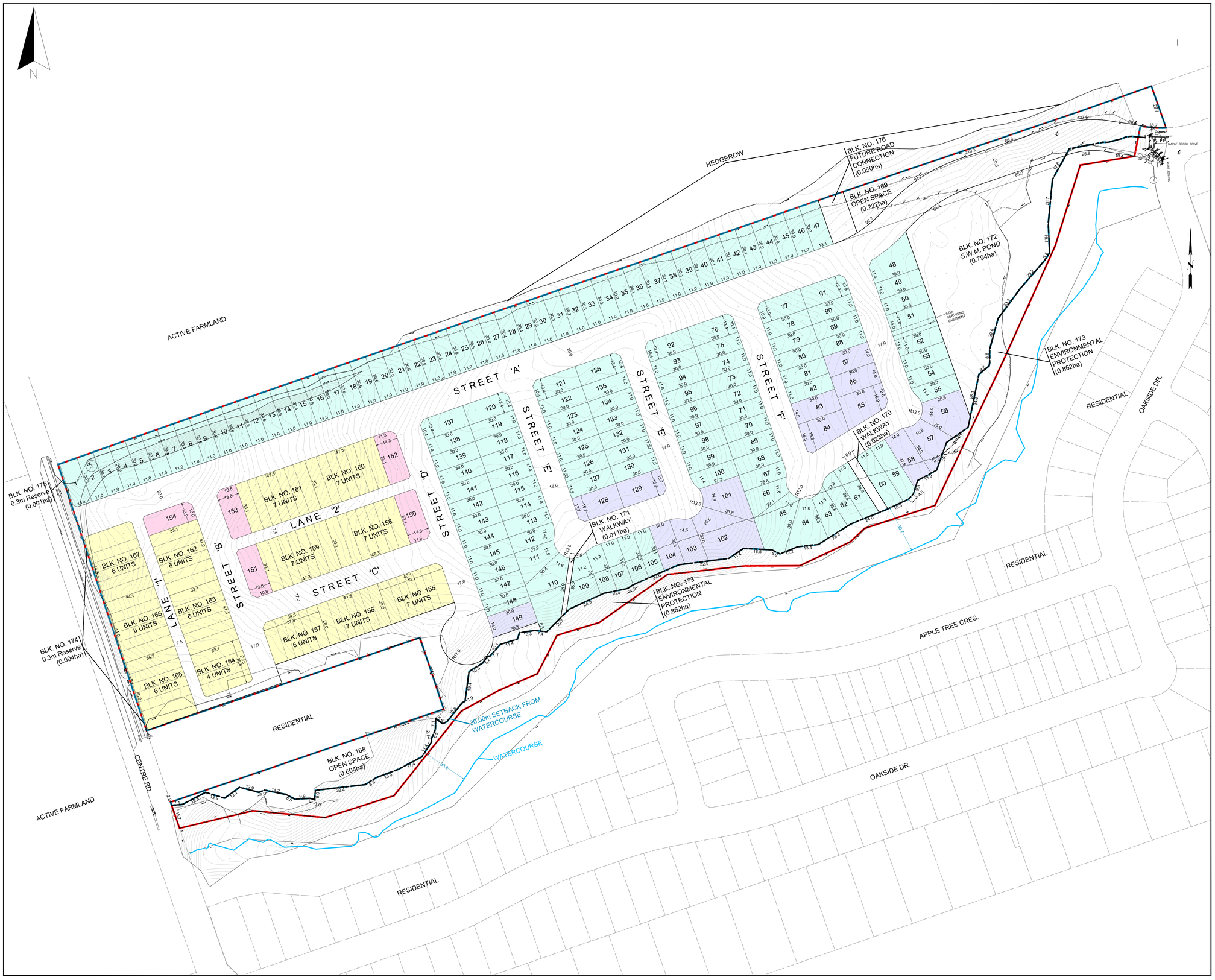
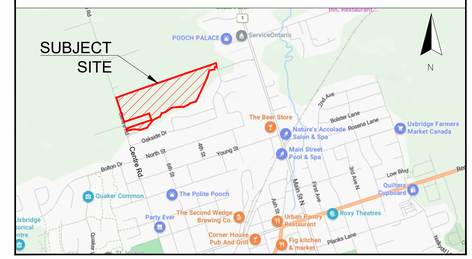


Figure 1: Site Location

Appendix A: Draft Plan



KEY MAP 1:20,000



DRAFT PLAN OF SUBDIVISION

Part of Lot 33, Concession 6,
Township of Uxbridge,
(formerly in the County of Ontario)
Regional Municipality of Durham

Scale

0 25 50 75 100m

LEGEND

SUBJECT LANDS (135,746.80m^2 / 13.575ha)

OWNER'S CERTIFICATE
I HEREBY AUTHORIZE INNOVATIVE PLANNING SOLUTIONS TO PREPARE THIS DRAFT PLAN OF SUBDIVISION AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION FOR APPROVAL.

DATE 2001976 ONTARIO LIMITED

SURVEYOR'S CERTIFICATE
I CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

DATE IVAN B. WALLACE, O.L.S.

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT

a) SHOWN ON PLAN
b) SHOWN ON PLAN
c) SEE KEY PLAN
d) RESIDENTIAL
e) SHOWN ON PLAN
f) SHOWN ON PLAN
g) SHOWN ON PLAN
h) MUNICIPAL WATER
i) SILTY SAND, GLACIAL TILL AND/OR CLAYEY SILT
j) SHOWN ON PLAN
k) MUNICIPAL WATER & SEWAGE
l) NONE

LAND USE STATISTICS

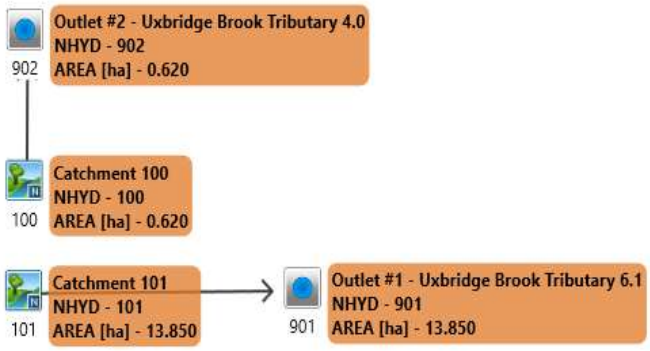
Land Use	Lot / Blk. No.	Units	Area (ha)
Residential Single Lot (10.97m / 36')	1 - 55, 59 -82, 88 - 100, 105 - 127, 130 - 148	134	4.691
Residential Single Lot (14.02m / 46')	56 - 58, 83 - 87, 101 - 104, 128 - 129, 149	15	0.792
Residential Single Lot - Rear Lane (10.97m / 36')	150 - 154	5	0.226
Residential Townhouses (6.30m / 20.76')	155 - 167	82	1.782
Open Space	168 - 169		0.826
3.00m Walkways	170 - 171		0.034
S.W.M. Pond	172		0.794
Environmental Protection	173		0.862
0.3m Reserves	174 - 175		0.005
Future Road Connection	176		0.050
Roads			3.513
TOTAL	**176**	**236**	**13.575**

INNOVATIVE PLANNING SOLUTIONS
PLANNERS • PROJECT MANAGERS • LAND DEVELOPERS
647 WELHAM ROAD, UNIT 9, BARRIE, ON, L4N 0B7
tel: 705 • 812 • 3281 fax: 705 • 812 • 3438 e: info@ipsconsultinginc.com www.ipsconsultinginc.com

Date:	March 11, 2024	Drawn By:	A.S.
File:	21 - 1241	Checked:	K.B.

Appendix B:
Existing Conditions Analysis

PROJECT	Maple Bridge Subdivision, Phase 2	FILE	422492
		DATE	10/10/2024
SUBJECT	VO Schematic - Pre-Development - AMCII & AMCIII	NAME	LJC
		PAGE	1 OF 1



NASHYD

ROUTE PIPE

DUHYD

STANDHYD

ROUTE CHANNEL

DIVERT HYD

ADDHYD

ROUTE RESERVOIR

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (NasHYD)

Project Details

Maple Bridge Subdivision	422492

Prepared By

LJC	10/2/2024

Data Sources

Detailed Soil Survey Reports for Ontario, LSRCA Technical Guidelines for Stormwater Management Submissions (2016), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	LSRCA
Catchment ID:	100
Catchment Area (ha):	0.62
Impervious %:	

Average Curve Number (CN), Runoff Coefficient (C) and Initial Abstraction (IA)

Soil Symbol		**Ds**											
Soil Series		Dundonald											
Hydrologic Soils Group		AB											
Soil Texture		Sand Loam											
Runoff Coefficient Type		1											
Area (ha)		0.62											
Percentage of Catchment		100%											
Land Cover Category	**IA**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**
Impervious	2		98	0.95									
Gravel	3		81	0.14									
Woodland	10	0.25	46	0.12									
Pasture/Lawns	5		59	0.15									
Meadows	8	0.12	51	0.14									
Cultivated	7	0.25	68	0.30									
Waterbody	12		50	0.05									
Average CN		55.74											
Average C		0.19											
Average IA		8.42											

Time to Peak Calculations

Max. Catchment Elev. (m):	286.24
Min. Catchment Elev. (m):	284.05
Catchment Length (m):	29
Catchment Slope (%):	7.55%
Method: Airport Method	
Time of Concentration (mins):	8.16

Summary

Catchment CN:	55.7
Catchment C:	0.19
Catchment IA (mm):	8.42
Time of Concentration (hrs):	0.14
Catchment Time to Peak (hrs):	0.09
Catchment Time Step (mins):	1.09

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (NasHYD)

Project Details

Maple Bridge Subdivision	422492

Prepared By

LJC	10/2/2024

Data Sources

Detailed Soil Survey Reports for Ontario, LSRCA Technical Guidelines for Stormwater Management Submissions (2016), MTO Drainage Management Manual (1997)

Pre-Development Condition

Watershed:	LSRCA
Catchment ID:	101
Catchment Area (ha):	13.85
Impervious %:	1%

Average Curve Number (CN), Runoff Coefficient (C) and Initial Abstraction (IA)

Soil Symbol		**Ds**			**Brs**								
Soil Series		Dundonald			Brighton								
Hydrologic Soils Group		AB			A								
Soil Texture		Sand Loam			Sand								
Runoff Coefficient Type		1			1								
Area (ha)		9.89			3.97								
Percentage of Catchment		71%			29%								
Land Cover Category	**IA**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**
Impervious	2	0.11	98	0.95		98	0.95						
Gravel	3		81	0.09		76	0.09						
Woodland	10	0.90	46	0.08	0.70	32	0.08						
Pasture/Lawns	5	0.95	59	0.10		49	0.10						
Meadows	8	1.82	51	0.09	0.51	38	0.09						
Cultivated	7	6.11	68	0.22	2.76	62	0.22						
Waterbody	12		50	0.05		50	0.05						
Average CN		62.33			53.64								
Average C		0.18			0.18								
Average IA		7.21			7.66								

Time to Peak Calculations

Max. Catchment Elev. (m):	287.50
Min. Catchment Elev. (m):	266.66
Catchment Length (m):	697
Catchment Slope (%):	2.99%
Method: Airport Method	
Time of Concentration (mins):	55.20

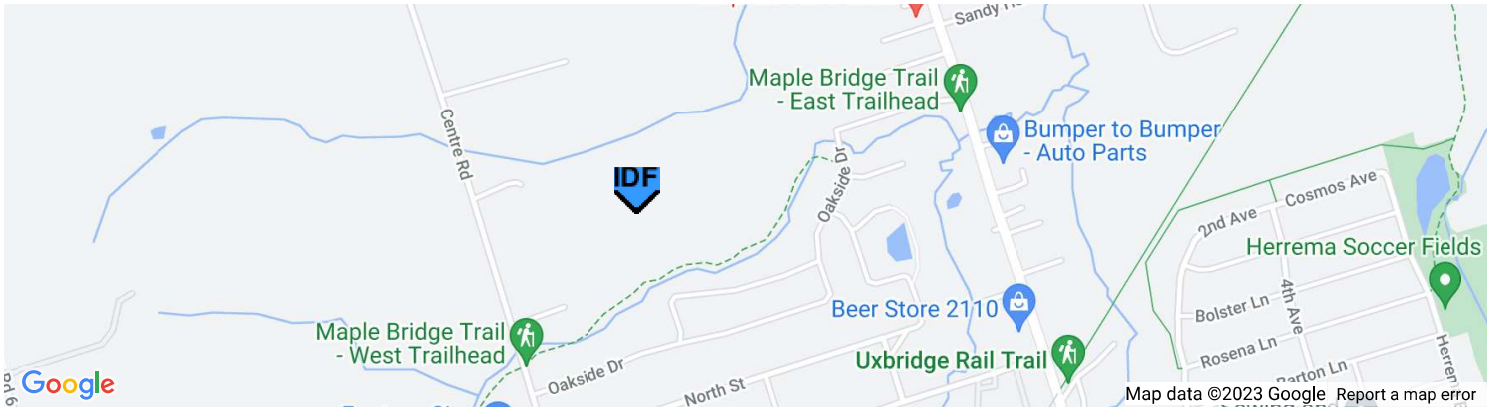
Summary

Catchment CN:	59.8
Catchment C:	0.18
Catchment IA (mm):	7.34
Time of Concentration (hrs):	0.92
Catchment Time to Peak (hrs):	0.61
Catchment Time Step (mins):	7.36

Active coordinate

44° 7' 15" N, 79° 7' 44" W (44.120833,-79.129167)

Retrieved: Mon, 14 Aug 2023 12:52:26 GMT



Location summary

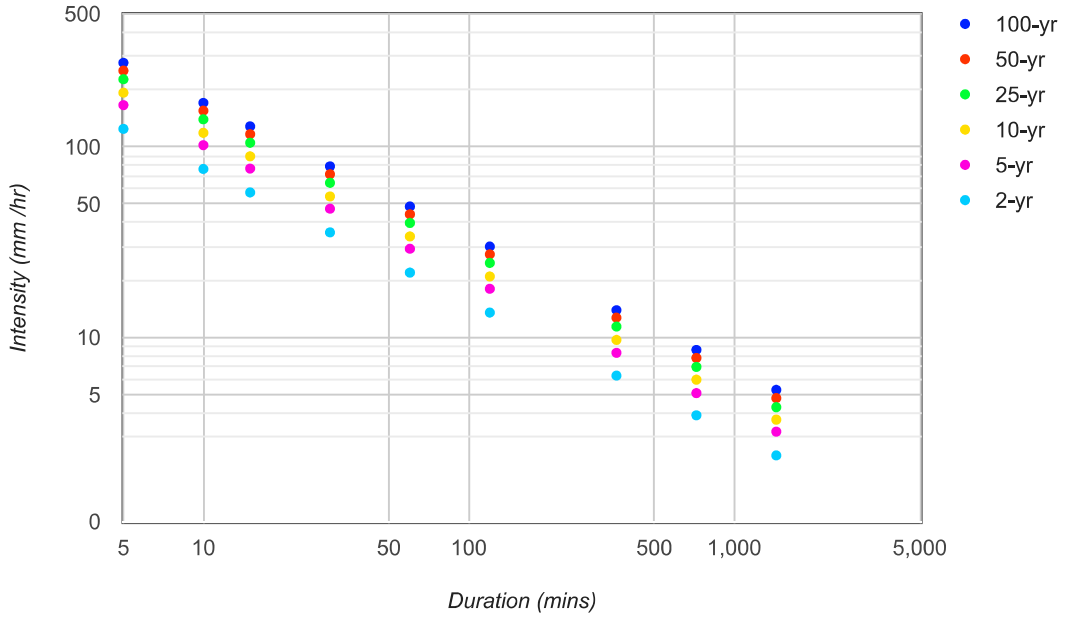
These are the locations in the selection.

IDF Curve: 44° 7' 15" N, 79° 7' 44" W (44.120833,-79.129167)

Results

An IDF curve was found.

Coordinate: 44.120833, -79.129167
IDF curve year: 2010



Coefficient summary

IDF Curve: 44° 7' 15" N, 79° 7' 44" W (44.120833,-79.129167)

Retrieved: Mon, 14 Aug 2023 12:52:26 GMT

Data year: 2010
IDF curve year: 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	21.9	29.2	33.9	39.9	44.3	48.7
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr^{-1})

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	124.4	76.6	57.7	35.6	21.9	13.5	6.3	3.9	2.4
5-yr	165.9	102.2	77.0	47.4	29.2	18.0	8.3	5.1	3.2
10-yr	192.6	118.6	89.3	55.0	33.9	20.9	9.7	6.0	3.7
25-yr	226.6	139.6	105.2	64.8	39.9	24.6	11.4	7.0	4.3
50-yr	251.6	155.0	116.7	71.9	44.3	27.3	12.7	7.8	4.8
100-yr	276.6	170.4	128.3	79.1	48.7	30.0	13.9	8.6	5.3

Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	10.4	12.8	14.4	17.8	21.9	27.0	37.6	46.3	57.0
5-yr	13.8	17.0	19.2	23.7	29.2	36.0	50.1	61.7	76.0
10-yr	16.0	19.8	22.3	27.5	33.9	41.8	58.1	71.6	88.2
25-yr	18.9	23.3	26.3	32.4	39.9	49.2	68.4	84.3	103.9
50-yr	21.0	25.8	29.2	36.0	44.3	54.6	76.0	93.6	115.3
100-yr	23.1	28.4	32.1	39.5	48.7	60.0	83.5	102.9	126.8

Terms of Use

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  ** SIMULATION : 25 mm 4-hr CHI                **
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    remark: 25 mm 4-hr CHI
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    [ Ptot= 25.00 mm ]
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    remark: 25 mm 4-hr CHI
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.00  1.58   1.21 0.05   0.000
    [CN=55.7        ]
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*
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DATE: 10/02/2024                          TIME: 01:35:49

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COMMENTS: _____________________________________________________

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  ** SIMULATION : Run 01 - 2yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 33.23 mm ]
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.06  2.25   3.41 0.10   0.000
    [CN=59.8        ]
    [ N = 3.0:Tp 0.61]
*
    CHIC STORM                10.0
    [ Ptot= 33.23 mm ]
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.01  1.33   2.61 0.08   0.000
    [CN=55.7        ]
    [ N = 3.0:Tp 0.09]
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DATE: 10/02/2024                          TIME: 01:35:49

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COMMENTS: _____________________________________________________

  ************************************************
  ** SIMULATION : Run 02 - 5yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 44.30 mm ]
*
```

```
 ** CALIB NASHYD         0101  1  5.0   13.85    0.11  2.17   6.58 0.15   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    CHIC STORM                 10.0
    [ Ptot= 44.30 mm ]
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.01  1.33   5.21 0.12   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
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DATE: 10/02/2024                          TIME: 01:35:49

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COMMENTS: ________________________________________________________


  ************************************************
  ** SIMULATION : Run 03 - 10yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                 10.0
    [ Ptot= 51.44 mm ]
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.16  2.17   9.05 0.18   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    CHIC STORM                 10.0
    [ Ptot= 51.44 mm ]
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.02  1.33   7.27 0.14   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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DATE: 10/02/2024                          TIME: 01:35:49

USER:


COMMENTS: ________________________________________________________


  ************************************************
  ** SIMULATION : Run 04 - 25yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                 10.0
    [ Ptot= 60.54 mm ]
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.23  2.08  12.64 0.21   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    CHIC STORM                 10.0
    [ Ptot= 60.54 mm ]
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.03  1.33  10.28 0.17   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\95107345-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\95107345-


DATE: 10/02/2024                          TIME: 01:35:49

USER:


COMMENTS: ________________________________________________________


  ************************************************
  ** SIMULATION : Run 05 - 50yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
```

```
    CHIC STORM                10.0
    [ Ptot= 67.21 mm ]
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.28  2.08  15.54 0.23   0.000
    [CN=59.8        ]
    [ N = 3.0:Tp 0.61]
*
    CHIC STORM                10.0
    [ Ptot= 67.21 mm ]
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.04  1.33  12.75 0.19   0.000
    [CN=55.7        ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\1548b85d-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\1548b85d-


DATE: 10/02/2024                          TIME: 01:35:49

USER:


COMMENTS: ____________________________________________________________


  ************************************************
  ** SIMULATION : Run 06 - 100yr 4hr 10min Chic **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 73.89 mm ]
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.34  2.08  18.66 0.25   0.000
    [CN=59.8        ]
    [ N = 3.0:Tp 0.61]
*
    CHIC STORM                10.0
    [ Ptot= 73.89 mm ]
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.04  1.33  15.42 0.21   0.000
    [CN=55.7        ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\6973c860-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\6973c860-


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  ************************************************
  ** SIMULATION : Run 07 - 2yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 46.27 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\b2ae71f7-ae0f-442a-b969
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.13  6.83   7.23 0.16   0.000
    [CN=59.8        ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                15.0
    [ Ptot= 46.27 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\b2ae71f7-ae0f-442a-b969
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.02  6.25   5.75 0.12   0.000
    [CN=55.7        ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\1744a2a2-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\1744a2a2-


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  ************************************************
  ** SIMULATION : Run 08 - 5yr 12hr 15min SCS T **
```

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

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                 15.0
    [ Ptot= 61.69 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\12dc4c30-dc5c-4036-a369
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.24  6.83  13.12 0.21   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                 15.0
    [ Ptot= 61.69 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\12dc4c30-dc5c-4036-a369
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.03  6.25  10.70 0.17   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\cdc9f2c3-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\cdc9f2c3-


DATE: 10/02/2024                          TIME: 01:35:50

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COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : Run 09 - 10yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                 15.0
    [ Ptot= 71.62 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\9eae1c74-c47d-4044-bc76
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.32  6.83  17.58 0.25   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                 15.0
    [ Ptot= 71.62 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\9eae1c74-c47d-4044-bc76
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.04  6.25  14.49 0.20   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\8616212a-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\8616212a-


DATE: 10/02/2024                          TIME: 01:35:50

USER:


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  ************************************************
  ** SIMULATION : Run 10 - 25yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                 15.0
    [ Ptot= 84.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\973c359e-7963-43c5-9f84
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.44  6.83  23.91 0.28   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                 15.0
    [ Ptot= 84.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\973c359e-7963-43c5-9f84
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.05  6.25  19.94 0.24   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****
```

```
  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\1624ff89-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\1624ff89-

DATE: 10/02/2024                          TIME: 01:35:50

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COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : Run 11 - 50yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 93.59 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\42fd7725-35a6-48e7-a68b
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.53  6.83  28.95 0.31   0.000
    [CN=59.8        ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                15.0
    [ Ptot= 93.59 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\42fd7725-35a6-48e7-a68b
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.07  6.25  24.31 0.26   0.000
    [CN=55.7        ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\b3009718-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\b3009718-

DATE: 10/02/2024                          TIME: 01:35:50

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COMMENTS: _____________________________________________________________


  ************************************************
  ** SIMULATION : Run 12 - 100yr 12hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot=102.89 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\b9bc5393-c514-4b42-b02e
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.63  6.83  34.28 0.33   0.000
    [CN=59.8        ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                15.0
    [ Ptot=102.89 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\b9bc5393-c514-4b42-b02e
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.08  6.25  28.96 0.28   0.000
    [CN=55.7        ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\397eef87-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\397eef87-

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  ************************************************
  ** SIMULATION : Run 13 - 2yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 57.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\2b6e45fc-8f7a-4339-92f1
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.17 12.83  11.19 0.20   0.000
    [CN=59.8        ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                15.0
    [ Ptot= 57.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\2b6e45fc-8f7a-4339-92f1
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.02 12.25   9.06 0.16   0.000
    [CN=55.7        ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
```

```
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M  M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\6e584004-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\6e584004-

DATE: 10/02/2024                          TIME: 01:35:49

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COMMENTS: _____________________________________________________

  ************************************************
  ** SIMULATION : Run 14 - 5yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ----------------
    READ STORM                 15.0
    [ Ptot= 76.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\2b0170f9-a76f-44e2-b9a1
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.30 12.83  19.69 0.26   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                 15.0
    [ Ptot= 76.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\2b0170f9-a76f-44e2-b9a1
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.04 12.25  16.30 0.21   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M  M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\84d41a3c-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\84d41a3c-

DATE: 10/02/2024                          TIME: 01:35:50

USER:

COMMENTS: _____________________________________________________

  ************************************************
  ** SIMULATION : Run 15 - 10yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ----------------
    READ STORM                 15.0
    [ Ptot= 88.24 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\922067fb-cd2e-49ce-b832
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.40 12.83  26.01 0.29   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                 15.0
    [ Ptot= 88.24 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\922067fb-cd2e-49ce-b832
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.05 12.25  21.75 0.25   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M  M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\9289e100-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\9289e100-

DATE: 10/02/2024                          TIME: 01:35:50

USER:

COMMENTS: _____________________________________________________

  ************************************************
  ** SIMULATION : Run 16 - 25yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ----------------
    READ STORM                 15.0
    [ Ptot=103.85 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\5887a2ec-b7af-4120-8fc6
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.54 12.75  34.85 0.34   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
```

```
    READ STORM                 15.0
    [ Ptot=103.85 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\5887a2ec-b7af-4120-8fc6
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.07 12.25  29.46 0.28   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\995a0e26-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\995a0e26-


DATE: 10/02/2024                          TIME: 01:35:50

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : Run 17 - 50yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                 15.0
    [ Ptot=115.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\8f729958-6162-4208-9eed
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.66 12.75  41.82 0.36   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                 15.0
    [ Ptot=115.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\8f729958-6162-4208-9eed
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.09 12.25  35.59 0.31   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\1eca5525-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\1eca5525-


DATE: 10/02/2024                          TIME: 01:35:49

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : Run 18 - 100yr 24hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                 15.0
    [ Ptot=126.76 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\4335f593-3a45-4748-8bfa
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0101  1  5.0   13.85    0.78 12.75  49.15 0.39   0.000
    [CN=59.8         ]
    [ N = 3.0:Tp 0.61]
*
    READ STORM                 15.0
    [ Ptot=126.76 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\4335f593-3a45-4748-8bfa
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0100  1  5.0    0.62    0.10 12.25  42.06 0.33   0.000
    [CN=55.7         ]
    [ N = 3.0:Tp 0.09]
*
```

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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\0685eb48-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\0685eb48-

DATE: 10/02/2024                          TIME: 01:35:50

USER:


COMMENTS: _____________________________________________________
```

**** SIMULATION : 25 mm 4-hr CHI ****

READ STORM	Filename: C:\Users\lcarretas\AppData\Local\Temp\c9ece19a-4254-4647-8b68-1317744a1847\d98d1005
Ptotal= 25.00 mm	Comments: 25 mm 4-hr CHI

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.07	1.00	5.70	2.00	5.19	3.00	2.80
0.17	2.27	1.17	10.78	2.17	4.47	3.17	2.62
0.33	2.52	1.33	50.21	2.33	3.95	3.33	2.48
0.50	2.88	1.50	13.37	2.50	3.56	3.50	2.35
0.67	3.38	1.67	8.29	2.67	3.25	3.67	2.23
0.83	4.18	1.83	6.30	2.83	3.01	3.83	2.14

CALIB NASHYD (0101) ID= 1 DT= 5.0 min	Area (ha)= 13.85 Curve Number (CN)= 59.8
	Ia (mm)= 7.34 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.61

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Unit Hyd Qpeak (cms)= 0.867

PEAK FLOW (cms)= 0.026 (i)
TIME TO PEAK (hrs)= 2.583
RUNOFF VOLUME (mm)= 1.654
TOTAL RAINFALL (mm)= 24.996
RUNOFF COEFFICIENT = 0.066

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

Junction Command(0901)

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2(0101)	13.85	0.03	2.58	1.65
OUTFLOW: ID= 2(0901)	13.85	0.03	2.58	1.65

CALIB NASHYD (0100) ID= 1 DT= 5.0 min	Area (ha)= 0.62 Curve Number (CN)= 55.7
	Ia (mm)= 8.42 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.09

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.07	1.083	5.70	2.083	5.19	3.08	2.80
0.167	2.07	1.167	5.70	2.167	5.19	3.17	2.80
0.250	2.27	1.250	10.78	2.250	4.47	3.25	2.62
0.333	2.27	1.333	10.78	2.333	4.47	3.33	2.62
0.417	2.52	1.417	50.21	2.417	3.95	3.42	2.48
0.500	2.52	1.500	50.21	2.500	3.95	3.50	2.48
0.583	2.88	1.583	13.37	2.583	3.56	3.58	2.35
0.667	2.88	1.667	13.37	2.667	3.56	3.67	2.35
0.750	3.38	1.750	8.29	2.750	3.25	3.75	2.23
0.833	3.38	1.833	8.29	2.833	3.25	3.83	2.23
0.917	4.17	1.917	6.30	2.917	3.01	3.92	2.14
1.000	4.18	2.000	6.29	3.000	3.01	4.00	2.14

Unit Hyd Qpeak (cms)= 0.263

PEAK FLOW (cms)= 0.002 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 1.209
TOTAL RAINFALL (mm)= 24.996
RUNOFF COEFFICIENT = 0.048

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

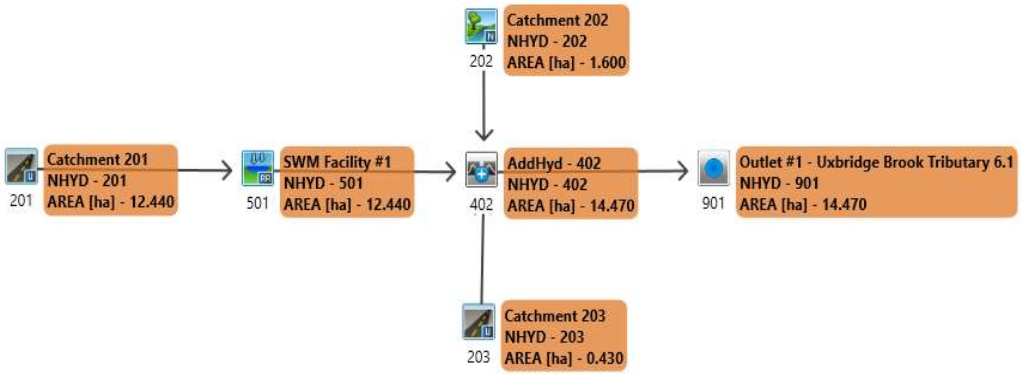
Junction Command(0902)

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2(0100)	0.62	0.00	1.58	1.21
OUTFLOW: ID= 2(0902)	0.62	0.00	1.58	1.21

FINISH

Appendix C:
Proposed Condition Analysis

PROJECT	Maple Bridge Subdivision, Phase 2	FILE	422492
		DATE	10/10/2024
SUBJECT	VO Schematic - Post-Development - AMCII & AMCIII	NAME	LJC
		PAGE	1 OF 1



NASHYD

ROUTE PIPE

DUHYD

STANDHYD

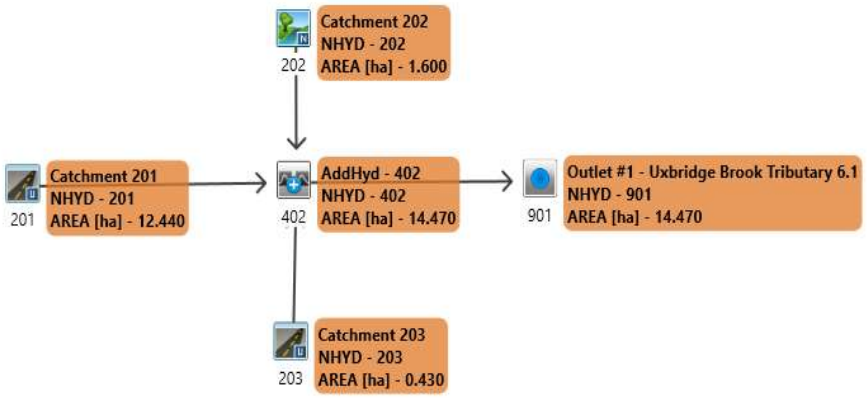
ROUTE CHANNEL

DIVERT HYD

ADDHYD

ROUTE RESERVOIR

PROJECT	Maple Bridge Subdivision, Phase 2	FILE	422492
		DATE	10/10/2024
SUBJECT	VO Schematic - Post-Development - AMCIII, No Pond	NAME	LJC
		PAGE	1 OF 1




NASHYD


ROUTE PIPE


DUHYD


STANDHYD


ROUTE CHANNEL


DIVERT HYD


ADDHYD


ROUTE RESERVOIR

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (NasHYD)

Project Details

Maple Bridge Subdivision	422492

Prepared By

LJC	10/2/2024

Data Sources

Detailed Soil Survey Reports for Ontario, LSRCA Technical Guidelines for Stormwater Management Submissions (2016), MTO Drainage Management Manual (1997)

Post Development Condition

Watershed:	LSRCA
Catchment ID:	202
Catchment Area (ha):	1.60
Impervious %:	1%

Average Curve Number (CN), Runoff Coefficient (C) and Initial Abstraction (IA)

Soil Symbol		**Ds**			**Brs**								
Soil Series		Dundonald			Brighton								
Hydrologic Soils Group		AB			A								
Soil Texture		Sand Loam			Sand								
Runoff Coefficient Type		1			1								
Area (ha)		1.28			0.32								
Percentage of Catchment		80%			20%								
Land Cover Category	**IA**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**	**A (ha)**	**CN**	**C**
Impervious	2	0.02	98	0.95		98	0.95						
Gravel	3		81	0.09		76	0.09						
Woodland	10	0.60	46	0.08	0.26	32	0.08						
Pasture/Lawns	5	0.66	59	0.10	0.06	49	0.10						
Meadows	8		51	0.09		38	0.09						
Cultivated	7		68	0.22		62	0.22						
Waterbody	12		50	0.05		50	0.05						
Average CN		53.52			35.19								
Average C		0.10			0.08								
Average IA		7.30			9.06								

Time to Peak Calculations

Max. Catchment Elev. (m):	284.91
Min. Catchment Elev. (m):	284.40
Catchment Length (m):	25.3
Catchment Slope (%):	2.02%
Method: Airport Method	
Time of Concentration (mins):	13.01

Summary

Catchment CN:	49.9
Catchment C:	0.10
Catchment IA (mm):	7.65
Time of Concentration (hrs):	0.22
Catchment Time to Peak (hrs):	0.14
Catchment Time Step (mins):	1.74

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Maple Bridge Subdivision	422492

Prepared By

LJC	10/2/2024

Data Sources

Detailed Soil Survey Reports for Ontario, LSRCA Technical Guidelines for Stormwater Management Submissions (2016), MTO Drainage Management Manual (1997)

Post Development Condition

Watershed:	LSRCA
Catchment ID:	201
Catchment Area (ha):	12.44
Impervious %:	71%
Pervious Area (ha):	3.55

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Ds**		**Brs**					
Soil Series		Dundonald		Brighton					
Hydrologic Soils Group		AB		A					
Soil Texture		Sand Loam		Sand					
Runoff Coefficient Type		1		1					
Area (ha)		2.48		1.06					
Percentage of Catchment		70%		30%					
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		98		98				
Gravel	3		81		76				
Woodland	10		46		32				
Pasture/Lawns	5	2.48	59	1.06	49				
Meadows	8		51		38				
Cultivated	7		68		62				
Waterbody	12		50		50				
Average CN		59.00		49.00					
Average IA		5.00		5.00					

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	56.0
Catchment IA (mm):	5.00

TATHAM ENGINEERING

Visual OTTHYMO Model Parameter Calculations (StandHYD)

Project Details

Maple Bridge Subdivision	422492

Prepared By

LJC	10/2/2024

Data Sources

Detailed Soil Survey Reports for Ontario, LSRCA Technical Guidelines for Stormwater Management Submissions (2016), MTO Drainage Management Manual (1997)

Post Development Condition

Watershed:	LSRCA
Catchment ID:	203
Catchment Area (ha):	0.43
Impervious %:	47%
Pervious Area (ha):	0.23

Average Curve Number (CN) and Initial Abstraction (IA) for Pervious Area

Soil Symbol		**Brs**							
Soil Series		Brighton							
Hydrologic Soils Group		A							
Soil Texture		Sand							
Runoff Coefficient Type		1							
Area (ha)		0.23							
Percentage of Catchment		100%							
Land Cover Category	**IA**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**	**A (ha)**	**CN**
Impervious	2		98						
Gravel	3		76						
Woodland	10		32						
Pasture/Lawns	5	0.23	49						
Meadows	8		38						
Cultivated	7		62						
Waterbody	12		50						
Average CN		49.00							
Average IA		5.00							

Notes

CN and IA values have been calculated for the pervious area of the catchment only.

Summary

Catchment CN:	49.0
Catchment IA (mm):	5.00

TATHAM ENGINEERING

PROJECT	Maple Bridge Subdivision, Phase 2	FILE	422492
		DATE	10/4/2024
SUBJECT	Land Use Allocation - Post-Development	NAME	LJC
		PAGE	1 OF 1

Catchment 201 - StandHYD								
Land Use Category	Area	Total Imperviousness (TIMP)	TIMP Area	Directly Connected Imperviousness (XIMP)	XIMP Area	Pervious Area	Pervious CN	Pervious IA
	ha	%	ha	%	ha	ha	-	mm
22' Courtyard	1.79	82%	1.47	55%	0.81	0.32	56.0	5.00
36' Classic	4.57	67%	3.06	27%	0.83	1.51	56.0	5.00
46' Classic	0.55	61%	0.34	21%	0.07	0.21	56.0	5.00
Catch. 202 Impervious	0.37	100%	0.37	14%	0.05	0.00	56.0	5.00
Holdout Residential	0.91	100%	0.91	67%	0.61	0.00	56.0	5.00
Road Allowances	3.26	74%	2.40	74%	1.77	0.86	56.0	5.00
SWMF#1	0.35	100%	0.35	100%	0.35	0.00	56.0	5.00
Landscape	0.64	0%	0.00	0%	0.00	0.64	56.0	5.00
Total	**12.44**	**71%**	**8.89**	**36%**	**4.48**	**3.55**	**56.0**	**5.00**

Catchment 202 - NasHYD								
Land Use Category	Area	Total Imperviousness (TIMP)	TIMP Area	Directly Connected Imperviousness (XIMP)	XIMP Area	Pervious Area	CN	IA
	ha	%	ha	%	ha	ha	-	mm
Walkways	0.02	100%	0.02	100%	0.02	0.00	98.0	2.00
Woodland	0.86	0%	0.00	0%	0.00	0.86	46.0	10.00
Landscape	0.72	0%	0.00	0%	0.00	0.72	59.0	5.00
Total	**1.60**	**1%**	**0.02**	**1%**	**0.02**	**1.58**	**49.9**	**7.65**

Catchment 203 - StandHYD								
Land Use Category	Area	Total Imperviousness (TIMP)	TIMP Area	Directly Connected Imperviousness (XIMP)	XIMP Area	Pervious Area	Pervious CN	Pervious IA
	ha	%	ha	%	ha	ha	-	mm
Road Allowances	0.29	70%	0.20	70%	0.14	0.09	49.0	5.00
Landscape	0.14	0%	0.00	0%	0.00	0.14	49.0	5.00
Total	**0.43**	**47%**	**0.20**	**33%**	**0.14**	**0.23**	**49.0**	**5.00**

Summary

Total Site Area:	14.47 ha
Total Site TIMP Area:	9.11 ha
Total Site TIMP:	63 %

TATHAM ENGINEERING

PROJECT	Maple Bridge Subdivision, Phase 2	FILE	422492
		DATE	10/17/2024
SUBJECT	Road Allowance Imperviousness	NAME	LJC
		PAGE	1 OF 1

Catchment 201

Pavement, Sidewalk, and Driveway Area

Street Name	Area of ROW (m^2)	Length of Road (m)	Road Paved Area (m^2)	Sidewalk Area (m^2)	Driveway Area in ROW (m^2)	Total Imp. Area (m^2)	Total Imp. %
Street A (20 m)	11,841	590	6,490	1,770	828	9,088	76.8%
Street B (17 m)	2,249	132	1,175	198	376	1,749	77.7%
Street C (17 m)	2,103	123	1,095	185	317	1,596	75.9%
Street D (17 m)	3,137	150	1,335	225	593	2,153	68.6%
Street E (17 m)	5,152	286	2,545	429	890	3,865	75.0%
Street F (17 m)	5,972	292	2,599	438	890	3,927	65.8%
Lane A (7.5 m)	1,245	132	726	0	120	846	67.9%
Lane B (7.5 m)	924	123	677	0	96	773	83.6%
Total	**32,624**	**1,828**	**16,641**	**3,245**	**4,110**	**23,996**	**73.6%**

Catchment 203

Pavement, Sidewalk, and Driveway Area

Street Name	Area of ROW (m^2)	Length of Road (m)	Road Paved Area (m^2)	Sidewalk Area (m^2)	Driveway Area in ROW (m^2)	Total Imp. Area (m^2)	Total Imp. %
Street A (20 m)	2,923	146	1,608	439	0	2,047	70.0%
Total	**2,923**	**146**	**1,608**	**439**	**0**	**2,047**	**70.0%**

Notes

1. OPSD 600.070 was utilized to determine the width of curb.

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Wednesday, Oct 9 2024

Drainage Channel to SWM Facility - Hazel (Uncontrolled)

User-defined

Invert Elev (m)	= 270.6300
Slope (%)	= 1.3000
N-Value	= 0.026

Calculations

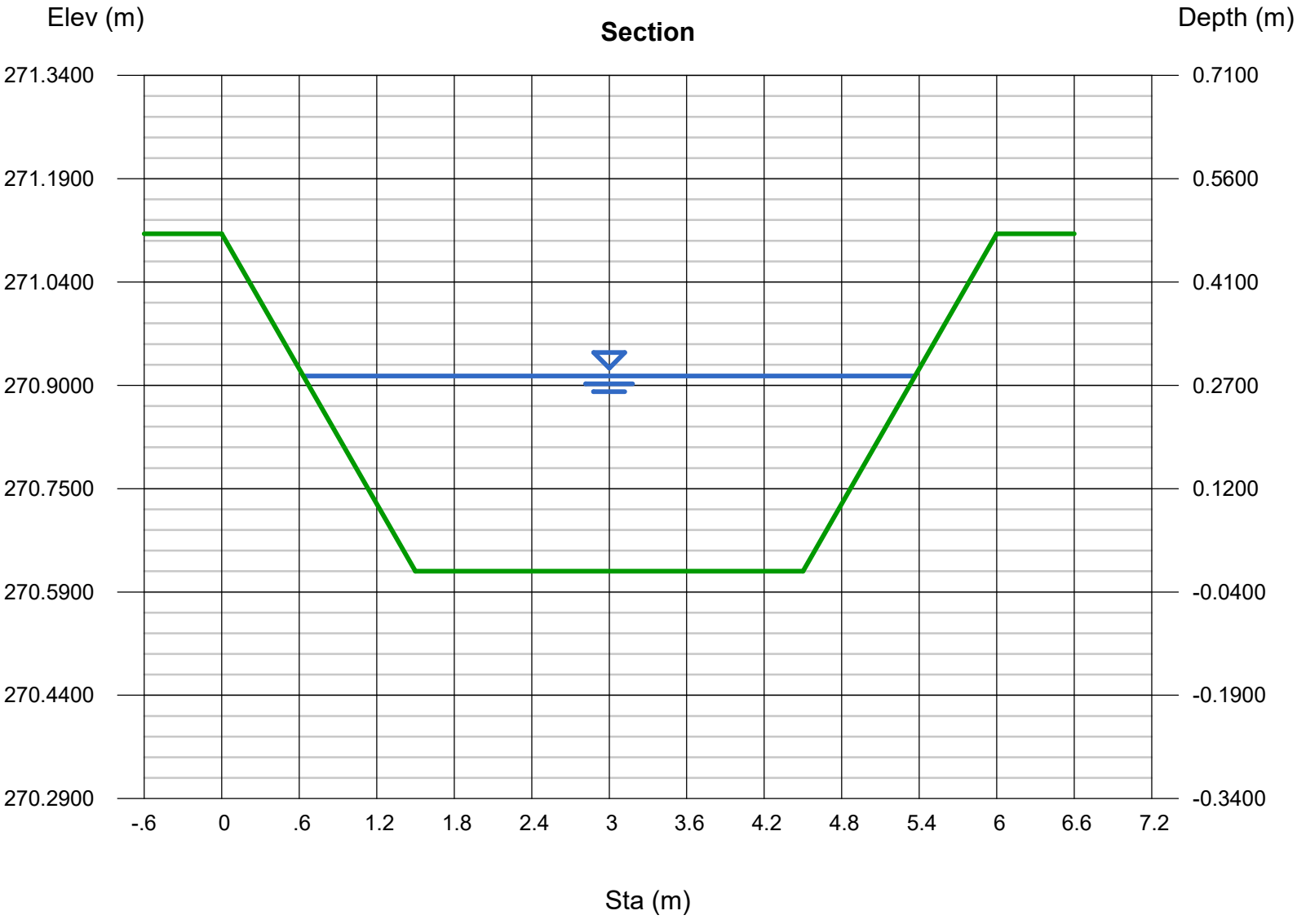
Compute by:	Known Q
Known Q (cms)	= 1.7650

Highlighted

Depth (m)	= 0.2835
Q (cms)	= 1.7650
Area (sqm)	= 1.0964
Velocity (m/s)	= 1.6099
Wetted Perim (m)	= 4.8257
Crit Depth, Yc (m)	= 0.2957
Top Width (m)	= 4.7355
EGL (m)	= 0.4157

(Sta, El, n)-(Sta, El, n)...

(0.0000, 271.1200)-(1.5000, 270.6300, 0.040)-(4.5000, 270.6300, 0.016)-(6.0000, 271.1200, 0.040)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Wednesday, Oct 9 2024

Drainage Channel to SWM Facility - 1:100-Year 24-hr SCS Type II (Uncontrolled)

User-defined

Invert Elev (m)	= 270.6300
Slope (%)	= 1.3000
N-Value	= 0.029

Calculations

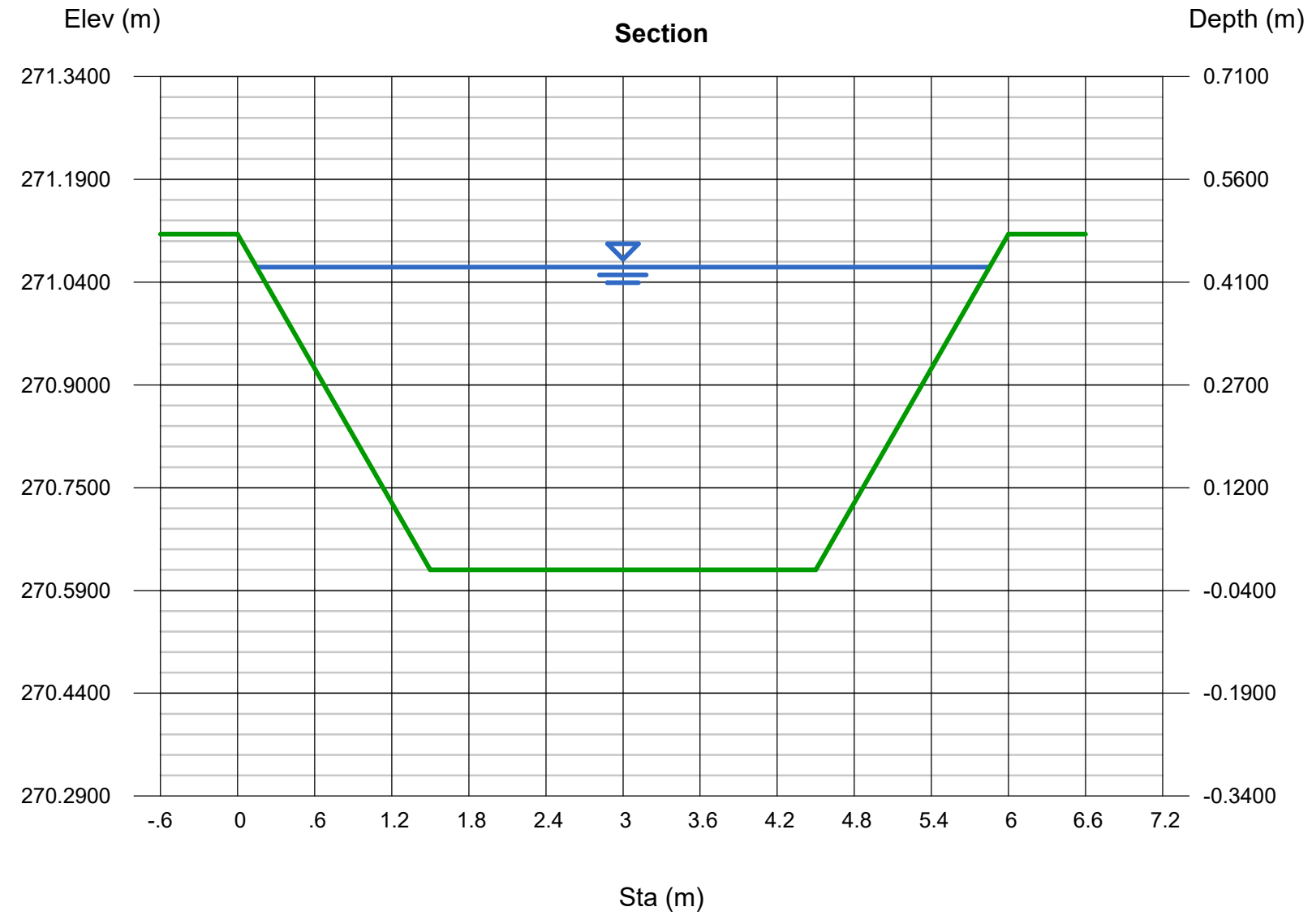
Compute by:	Known Q
Known Q (cms)	= 3.5950

Highlighted

Depth (m)	= 0.4420
Q (cms)	= 3.5950
Area (sqm)	= 1.9238
Velocity (m/s)	= 1.8686
Wetted Perim (m)	= 5.8466
Crit Depth, Yc (m)	= 0.4511
Top Width (m)	= 5.7059
EGL (m)	= 0.6201

(Sta, El, n)-(Sta, El, n)...

(0.0000, 271.1200)-(1.5000, 270.6300, 0.040)-(4.5000, 270.6300, 0.016)-(6.0000, 271.1200, 0.040)



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        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
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DATE: 10/21/2024                          TIME: 09:49:19

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : 25 mm 4-hr CHI                **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                10.0
    [ Ptot= 25.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\d98d1005-1e85-4b79-95a8
    remark: 25 mm 4-hr CHI
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.00  1.67   1.10 0.04   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                10.0
    [ Ptot= 25.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\d98d1005-1e85-4b79-95a8
    remark: 25 mm 4-hr CHI
*
 ** CALIB STANDHYD       0201  1  5.0   12.44    0.54  1.50  11.56 0.46   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.02  2.50   9.07  n/a   0.000
*
    READ STORM                10.0
    [ Ptot= 25.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\d98d1005-1e85-4b79-95a8
    remark: 25 mm 4-hr CHI
*
  * CALIB STANDHYD       0203  1  5.0    0.43    0.02  1.50   9.16 0.37   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.02  1.50   2.80  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.02  2.50   8.19  n/a   0.000
*
==========================================================================================================

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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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DATE: 10/21/2024                          TIME: 09:49:17

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : Run 01 - 2yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 33.23 mm ]
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.01  1.42   2.31 0.07   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    CHIC STORM                10.0
    [ Ptot= 33.23 mm ]
*
 ** CALIB STANDHYD       0201  1  5.0   12.44    0.88  1.33  16.66 0.50   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.02  1.58  14.16  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 33.23 mm ]
*
  * CALIB STANDHYD       0203  1  5.0    0.43    0.03  1.33  13.01 0.39   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.04  1.33   4.58  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.04  1.33  12.82  n/a   0.000
*
==========================================================================================================

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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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```

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DATE: 10/21/2024                          TIME: 09:49:19

USER:

COMMENTS: _____________________________________________________

  ************************************************
  ** SIMULATION : Run 02 - 5yr 4hr 10min Chicag **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 44.30 mm ]
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.02  1.42   4.57 0.10   0.000
    [CN=49.9         ]
    [ N = 3.0:Tp 0.14]
*
    CHIC STORM                10.0
    [ Ptot= 44.30 mm ]
*
  * CALIB STANDHYD       0201  1  5.0   12.44    1.29  1.33  24.13 0.54   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.04  4.17  21.63  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 44.30 mm ]
*
  * CALIB STANDHYD       0203  1  5.0    0.43    0.04  1.33  18.64 0.42   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.06  1.33   7.55  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.07  1.33  19.66  n/a   0.000
*
 FINISH

================================================================================================================

================================================================================================================


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

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       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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DATE: 10/21/2024                          TIME: 09:49:16

USER:

COMMENTS: _____________________________________________________

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

```
  ** SIMULATION : Run 03 - 10yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 51.44 mm ]
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.03  1.42   6.37 0.12   0.000
    [CN=49.9         ]
    [ N = 3.0:Tp 0.14]
*
    CHIC STORM                10.0
    [ Ptot= 51.44 mm ]
*
  * CALIB STANDHYD       0201  1  5.0   12.44    1.55  1.33  29.24 0.57   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.06  4.08  26.75  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 51.44 mm ]
*
  * CALIB STANDHYD       0203  1  5.0    0.43    0.05  1.33  22.51 0.44   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.07  1.33   9.79  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.09  1.33  24.37  n/a   0.000
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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DATE: 10/21/2024                          TIME: 09:49:18

USER:

COMMENTS: _____________________________________________________

  ************************************************
  ** SIMULATION : Run 04 - 25yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    CHIC STORM                10.0
    [ Ptot= 60.54 mm ]
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.05  1.42   9.02 0.15   0.000
    [CN=49.9         ]
    [ N = 3.0:Tp 0.14]
*
```

```
    CHIC STORM                10.0
    [ Ptot= 60.54 mm ]
*
 *  CALIB STANDHYD       0201  1  5.0   12.44    1.90  1.33  36.05 0.60   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:             0501  1  5.0   12.44    0.12  4.00  33.56  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 60.54 mm ]
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.06  1.33  27.70 0.46   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.10  1.33  12.97  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.13  4.00  30.67  n/a   0.000
*
================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
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DATE: 10/21/2024                          TIME: 09:49:17

USER:


COMMENTS: ________________________________________________________


  ************************************************
  ** SIMULATION : Run 05 - 50yr 4hr 10min Chica **
  ************************************************

  W/E COMMAND              HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 67.21 mm ]
*
 ** CALIB NASHYD        0202  1  5.0    1.60    0.06  1.42  11.19 0.17   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    CHIC STORM                10.0
    [ Ptot= 67.21 mm ]
*
 *  CALIB STANDHYD       0201  1  5.0   12.44    2.17  1.33  41.21 0.61   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:             0501  1  5.0   12.44    0.16  3.42  38.72  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 67.21 mm ]
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.07  1.33  31.67 0.47   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.12  1.33  15.53  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.18  3.33  35.47  n/a   0.000
*
================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                 *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\8d4025d6-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\8d4025d6-

DATE: 10/21/2024                          TIME: 09:49:18

USER:


COMMENTS: ________________________________________________________


  ************************************************
  ** SIMULATION : Run 06 - 100yr 4hr 10min Chic **
  ************************************************

  W/E COMMAND              HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms


     START @  0.00 hrs
     --------------------
    CHIC STORM                10.0
    [ Ptot= 73.89 mm ]
*
 ** CALIB NASHYD        0202  1  5.0    1.60    0.07  1.42  13.56 0.18   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    CHIC STORM                10.0
    [ Ptot= 73.89 mm ]
*
 *  CALIB STANDHYD       0201  1  5.0   12.44    2.72  1.33  46.50 0.63   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:             0501  1  5.0   12.44    0.23  2.83  44.01  n/a   0.000
*
    CHIC STORM                10.0
    [ Ptot= 73.89 mm ]
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.07  1.33  35.78 0.48   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.14  1.33  18.26  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.25  2.83  40.40  n/a   0.000
*
================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
```

```
       O   O    T     T    H   H    Y    M   M  O   O
        OOO     T     T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\8dcf5118-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\8dcf5118-


DATE: 10/21/2024                          TIME: 09:49:18

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : Run 07 - 2yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      -------------------
    READ STORM                15.0
    [ Ptot= 46.27 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\b2ae71f7-ae0f-442a-b969
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.03  6.25   5.04 0.11   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                15.0
    [ Ptot= 46.27 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\b2ae71f7-ae0f-442a-b969
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB STANDHYD       0201  1  5.0   12.44    0.91  6.25  25.52 0.55   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.03 10.50  23.02  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 46.27 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\b2ae71f7-ae0f-442a-b969
    remark: 2yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.03  6.25  19.69 0.43   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.05  6.25   8.14  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.07  6.25  20.93  n/a   0.000
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****
```

```
  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\ed937b4f-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\ed937b4f-


DATE: 10/21/2024                          TIME: 09:49:19

USER:


COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : Run 08 - 5yr 12hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      -------------------
    READ STORM                15.0
    [ Ptot= 61.69 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\12dc4c30-dc5c-4036-a369
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.05  6.25   9.38 0.15   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                15.0
    [ Ptot= 61.69 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\12dc4c30-dc5c-4036-a369
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB STANDHYD       0201  1  5.0   12.44    1.42  6.25  36.93 0.60   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.07  8.42  34.44  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 61.69 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\12dc4c30-dc5c-4036-a369
    remark: 5yr 12hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.04  6.25  28.38 0.46   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.09  6.25  13.40  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.11  6.25  31.49  n/a   0.000
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\ebbd1c22-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\ebbd1c22-


DATE: 10/21/2024                          TIME: 09:49:19

USER:
```

```
COMMENTS: ____________________________________________________________

  ************************************************
  ** SIMULATION : Run 09 - 10yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ---------------------
    READ STORM                15.0
    [ Ptot= 71.62 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\9eae1c74-c47d-4044-bc76
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.07  6.25  12.73 0.18   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                15.0
    [ Ptot= 71.62 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\9eae1c74-c47d-4044-bc76
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
  * CALIB STANDHYD       0201  1  5.0   12.44    1.73  6.25  44.69 0.62   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.15  7.33  42.20  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 71.62 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\9eae1c74-c47d-4044-bc76
    remark: 10yr 12hr 15min SCS Type II (MTO)
*
  * CALIB STANDHYD       0203  1  5.0    0.43    0.05  6.25  34.37 0.48   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.12  6.25  17.32  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.16  7.25  38.71  n/a   0.000
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\2e1a344e-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\2e1a344e-

DATE: 10/21/2024                          TIME: 09:49:16

USER:

COMMENTS: ____________________________________________________________

  ************************************************
  ** SIMULATION : Run 10 - 25yr 12hr 15min SCS  **
  ************************************************
```

```
  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ---------------------
    READ STORM                15.0
    [ Ptot= 84.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\973c359e-7963-43c5-9f84
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.10  6.25  17.58 0.21   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                15.0
    [ Ptot= 84.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\973c359e-7963-43c5-9f84
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
  * CALIB STANDHYD       0201  1  5.0   12.44    2.16  6.25  54.96 0.65   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.31  6.92  52.47  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 84.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\973c359e-7963-43c5-9f84
    remark: 25yr 12hr 15min SCS Type II (MTO)
*
  * CALIB STANDHYD       0203  1  5.0    0.43    0.06  6.25  42.41 0.50   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.16  6.25  22.84  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.34  6.83  48.31  n/a   0.000
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\45b462a5-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\45b462a5-

DATE: 10/21/2024                          TIME: 09:49:17

USER:

COMMENTS: ____________________________________________________________

  ************************************************
  ** SIMULATION : Run 11 - 50yr 12hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     ---------------------
    READ STORM                15.0
    [ Ptot= 93.59 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\42fd7725-35a6-48e7-a68b
    remark: 50yr 12hr 15min SCS Type II (MTO)
```

```
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.12  6.25  21.50 0.23   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                 15.0
    [ Ptot= 93.59 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\42fd7725-35a6-48e7-a68b
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
  * CALIB STANDHYD       0201  1  5.0   12.44    2.48  6.25  62.70 0.67   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.34  6.92  60.21  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 93.59 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\42fd7725-35a6-48e7-a68b
    remark: 50yr 12hr 15min SCS Type II (MTO)
*
  * CALIB STANDHYD       0203  1  5.0    0.43    0.07  6.25  48.56 0.52   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.19  6.25  27.23  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.40  6.50  55.58  n/a   0.000
*
================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\66529810-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\66529810-


DATE: 10/21/2024                          TIME: 09:49:17

USER:


COMMENTS: ____________________________________________________________


  ************************************************
  ** SIMULATION : Run 12 - 100yr 12hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                 15.0
    [ Ptot=102.89 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\b9bc5393-c514-4b42-b02e
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.14  6.25  25.70 0.25   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                 15.0
    [ Ptot=102.89 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\b9bc5393-c514-4b42-b02e
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
  * CALIB STANDHYD       0201  1  5.0   12.44    3.03  6.25  70.60 0.69   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.35  6.92  68.10  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=102.89 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\b9bc5393-c514-4b42-b02e
    remark: 100yr 12hr 15min SCS Type II (MTO)
*
  * CALIB STANDHYD       0203  1  5.0    0.43    0.08  6.25  54.89 0.53   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.23  6.25  31.89  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.49  6.33  63.02  n/a   0.000
*
================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\9767455b-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\9767455b-


DATE: 10/21/2024                          TIME: 09:49:18

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COMMENTS: ____________________________________________________________


  ************************************************
  ** SIMULATION : Run 13 - 2yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                 15.0
    [ Ptot= 57.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\2b6e45fc-8f7a-4339-92f1
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.04 12.25   7.94 0.14   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                 15.0
    [ Ptot= 57.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\2b6e45fc-8f7a-4339-92f1
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB STANDHYD       0201  1  5.0   12.44    1.14 12.25  33.37 0.59   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.04 14.67  30.87  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot= 57.00 mm ]
```

```
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\2b6e45fc-8f7a-4339-92f1
    remark: 2yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.03 12.25  25.65 0.45   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.07 12.25  11.69  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.09 12.25  28.18  n/a   0.000
*
================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\7c31591f-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\7c31591f-


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  ************************************************
  ** SIMULATION : Run 14 - 5yr 24hr 15min SCS T **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 76.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\2b0170f9-a76f-44e2-b9a1
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.07 12.25  14.34 0.19   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                15.0
    [ Ptot= 76.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\2b0170f9-a76f-44e2-b9a1
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0201  1  5.0   12.44    1.68 12.25  48.19 0.63   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:             0501  1  5.0   12.44    0.13 13.42  45.70  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 76.00 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\2b0170f9-a76f-44e2-b9a1
    remark: 5yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.05 12.25  37.10 0.49   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.12 12.25  19.16  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.14 13.33  41.98  n/a   0.000
*
================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\e6cd0312-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\e6cd0312-


DATE: 10/21/2024                          TIME: 09:49:19

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  ************************************************
  ** SIMULATION : Run 15 - 10yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

     START @  0.00 hrs
     --------------------
    READ STORM                15.0
    [ Ptot= 88.24 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\922067fb-cd2e-49ce-b832
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.09 12.25  19.21 0.22   0.000
    [CN=49.9        ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                15.0
    [ Ptot= 88.24 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\922067fb-cd2e-49ce-b832
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0201  1  5.0   12.44    2.05 12.25  58.22 0.66   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:             0501  1  5.0   12.44    0.26 13.00  55.73  n/a   0.000
*
    READ STORM                15.0
    [ Ptot= 88.24 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\922067fb-cd2e-49ce-b832
    remark: 10yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.06 12.25  44.99 0.51   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.15 12.25  24.67  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.28 12.92  51.37  n/a   0.000
*
================================================================================


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

```
        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\d54e4c18-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\d54e4c18-


DATE: 10/21/2024                          TIME: 09:49:19

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  ************************************************
  ** SIMULATION : Run 16 - 25yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                 15.0
    [ Ptot=103.85 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\5887a2ec-b7af-4120-8fc6
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.13 12.25  26.15 0.25   0.000
    [CN=49.9         ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                 15.0
    [ Ptot=103.85 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\5887a2ec-b7af-4120-8fc6
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
  *  CALIB STANDHYD       0201  1  5.0   12.44    2.55 12.25  71.42 0.69   0.000
    [I%=36.0:S%= 2.00]
*
  ** Reservoir
    OUTFLOW:               0501  1  5.0   12.44    0.34 12.92  68.93  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=103.85 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\5887a2ec-b7af-4120-8fc6
    remark: 25yr 24hr 15min SCS Type II (MTO)
*
  *  CALIB STANDHYD       0203  1  5.0    0.43    0.07 12.25  55.56 0.53   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.20 12.25  32.38  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.41 12.42  63.80  n/a   0.000
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\ac03dacf-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\ac03dacf-


DATE: 10/21/2024                          TIME: 09:49:18

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COMMENTS: _____________________________________________________


  ************************************************
  ** SIMULATION : Run 17 - 50yr 24hr 15min SCS  **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                   min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                 15.0
    [ Ptot=115.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\8f729958-6162-4208-9eed
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.16 12.25  31.71 0.28   0.000
    [CN=49.9         ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                 15.0
    [ Ptot=115.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\8f729958-6162-4208-9eed
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
  *  CALIB STANDHYD       0201  1  5.0   12.44    3.17 12.25  81.34 0.71   0.000
    [I%=36.0:S%= 2.00]
*
  ** Reservoir
    OUTFLOW:               0501  1  5.0   12.44    0.36 12.92  78.84  n/a   0.000
*
    READ STORM                 15.0
    [ Ptot=115.30 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f68710d380\8f729958-6162-4208-9eed
    remark: 50yr 24hr 15min SCS Type II (MTO)
*
  *  CALIB STANDHYD       0203  1  5.0    0.43    0.09 12.25  63.63 0.55   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.24 12.25  38.47  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.51 12.33  73.18  n/a   0.000
*
================================================================================================================


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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  S U M M A R Y   O U T P U T  *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\4048e7d1-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\4048e7d1-
```

DATE: 10/21/2024 TIME: 09:49:16

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```
  ************************************************
  ** SIMULATION : Run 18 - 100yr 24hr 15min SCS **
  ************************************************

  W/E COMMAND             HYD ID   DT    AREA  ' Qpeak Tpeak   R.V. R.C.   Qbase
                                  min     ha   '  cms   hrs     mm          cms

      START @  0.00 hrs
      --------------------
    READ STORM                15.0
    [ Ptot=126.76 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f6871Od380\4335f593-3a45-4748-8bfa
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 ** CALIB NASHYD         0202  1  5.0    1.60    0.19 12.25  37.64 0.30   0.000
    [CN=49.9         ]
    [ N = 3.0:Tp 0.14]
*
    READ STORM                15.0
    [ Ptot=126.76 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f6871Od380\4335f593-3a45-4748-8bfa
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0201  1  5.0   12.44    3.60 12.25  91.43 0.72   0.000
    [I%=36.0:S%= 2.00]
*
 ** Reservoir
    OUTFLOW:              0501  1  5.0   12.44    0.38 12.92  88.93  n/a   0.000
*
    READ STORM                15.0
    [ Ptot=126.76 mm ]
    fname : C:\Users\lcarretas\AppData\Local\Temp\d6c13652-22bd-4428-b9a5-33f6871Od380\4335f593-3a45-4748-8bfa
    remark: 100yr 24hr 15min SCS Type II (MTO)
*
 *  CALIB STANDHYD       0203  1  5.0    0.43    0.10 12.25  71.93 0.57   0.000
    [I%=33.0:S%= 2.00]
*
    ADD [  0202+  0203]  0402  3  5.0    2.03    0.29 12.25  44.90  n/a   0.000
*
    ADD [  0402+  0501]  0402  1  5.0   14.47    0.61 12.25  82.76  n/a   0.000
*
```

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

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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\c6362252-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\c6362252-


DATE: 10/21/2024                          TIME: 09:49:19

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COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 25 mm 4-hr CHI                **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\lcarretas\AppD
|                  |              ata\Local\Temp\
|                  |              d6c13652-22bd-4428-b9a5-33f68710d380\d98d1005
| Ptotal= 25.00 mm |    Comments: 25 mm 4-hr CHI
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    2.07 |  1.00    5.70 |'  2.00    5.19 |  3.00    2.80
                0.17    2.27 |  1.17   10.78 |'  2.17    4.47 |  3.17    2.62
                0.33    2.52 |  1.33   50.21 |'  2.33    3.95 |  3.33    2.48
                0.50    2.88 |  1.50   13.37 |'  2.50    3.56 |  3.50    2.35
                0.67    3.38 |  1.67    8.29 |'  2.67    3.25 |  3.67    2.23
                0.83    4.18 |  1.83    6.30 |'  2.83    3.01 |  3.83    2.14

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| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   1.60   Curve Number   (CN)= 49.9
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.65   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.14

        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    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
               0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
               0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
               0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
               0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
               0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
               0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
               0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
               0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
               1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

    Unit Hyd Qpeak  (cms)=   0.437

    PEAK FLOW       (cms)=   0.004 (i)
    TIME TO PEAK    (hrs)=   1.667
    RUNOFF VOLUME    (mm)=   1.096
    TOTAL RAINFALL   (mm)=  24.996
    RUNOFF COEFFICIENT   =   0.044

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

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--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=  12.44
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  36.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=        8.83          3.61
    Dep. Storage     (mm)=        1.00          5.00
    Average Slope     (%)=        1.00          2.00
    Length            (m)=      287.98         40.00
    Mannings n           =       0.013         0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
               0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
               0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
               0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
               0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
               0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
               0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
               0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
               0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
               0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
               0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
               1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

    Max.Eff.Inten.(mm/hr)=      50.21         11.56
              over (min)        5.00         25.00
    Storage Coeff.  (min)=      6.35 (ii)    23.08 (ii)
    Unit Hyd. Tpeak (min)=      5.00         25.00
    Unit Hyd. peak  (cms)=      0.19          0.05
                                                        *TOTALS*
    PEAK FLOW       (cms)=      0.52          0.06        0.536 (iii)
    TIME TO PEAK    (hrs)=      1.50          1.83         1.50
    RUNOFF VOLUME    (mm)=     24.00          4.57        11.56
    TOTAL RAINFALL   (mm)=     25.00         25.00        25.00
    RUNOFF COEFFICIENT   =      0.96          0.18         0.46

      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  56.0    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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--------------------
| RESERVOIR(  0501)|     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   |  0.3400      0.4900
                         0.0000      0.0300   |  0.3500      0.5400
                         0.0100      0.0700   |  0.3700      0.5900
                         0.0200      0.1000   |  0.3800      0.6400
                         0.0200      0.1800   |  0.4100      0.7400
                         0.0200      0.2200   |  0.4200      0.7900
                         0.0300      0.2600   |  0.4400      0.8400
                         0.0800      0.3500   |  3.9400      0.9500
                         0.1800      0.4000   |  6.9400      1.0100
                         0.3200      0.4400   | 10.7200      1.0600

                              AREA     QPEAK     TPEAK        R.V.
                               (ha)     (cms)     (hrs)        (mm)
  INFLOW : ID= 2 (  0201)     12.440     0.536      1.50       11.56
  OUTFLOW: ID= 1 (  0501)     12.440     0.020      2.50        9.07

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.73
                TIME SHIFT OF PEAK FLOW         (min)= 60.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.1241
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--------------------
|  CALIB           |
| STANDHYD (  0203)|   Area    (ha)=   0.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  47.00   Dir. Conn.(%)=  33.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.20         0.23
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      53.54        40.00
     Mannings n            =      0.013        0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    2.07 | 1.083    5.70 | 2.083    5.19 |  3.08    2.80
              0.167    2.07 | 1.167    5.70 | 2.167    5.19 |  3.17    2.80
              0.250    2.27 | 1.250   10.78 | 2.250    4.47 |  3.25    2.62
              0.333    2.27 | 1.333   10.78 | 2.333    4.47 |  3.33    2.62
              0.417    2.52 | 1.417   50.21 | 2.417    3.95 |  3.42    2.48
              0.500    2.52 | 1.500   50.21 | 2.500    3.95 |  3.50    2.48
              0.583    2.88 | 1.583   13.37 | 2.583    3.56 |  3.58    2.35
              0.667    2.88 | 1.667   13.37 | 2.667    3.56 |  3.67    2.35
              0.750    3.38 | 1.750    8.29 | 2.750    3.25 |  3.75    2.23
              0.833    3.38 | 1.833    8.29 | 2.833    3.25 |  3.83    2.23
              0.917    4.17 | 1.917    6.30 | 2.917    3.01 |  3.92    2.14
              1.000    4.18 | 2.000    6.29 | 3.000    3.01 |  4.00    2.14

     Max.Eff.Inten.(mm/hr)=      50.21         1.92
               over (min)         5.00        40.00
     Storage Coeff.  (min)=       2.31 (ii)   36.61 (ii)
     Unit Hyd. Tpeak (min)=       5.00        40.00
     Unit Hyd. peak  (cms)=       0.30         0.03
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.00          0.020 (iii)
     TIME TO PEAK    (hrs)=       1.50         2.25           1.50
     RUNOFF VOLUME    (mm)=      24.00         1.92           9.16
     TOTAL RAINFALL   (mm)=      25.00        25.00          25.00
     RUNOFF COEFFICIENT   =       0.96         0.08           0.37

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  49.0     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  (  0402)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0202):     1.60   0.004     1.67     1.10
     + ID2= 2 (  0203):     0.43   0.020     1.50     9.16
       ================================================
       ID = 3 (  0402):     2.03   0.022     1.50     2.80

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0402)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0402):     2.03   0.022     1.50     2.80
     + ID2= 2 (  0501):    12.44   0.020     2.50     9.07
       ================================================
       ID = 1 (  0402):    14.47   0.024     2.50     8.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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  -------------------------
  | Junction Command(0901) |
  -------------------------

                          AREA     QPEAK    TPEAK     R.V.
                           (ha)     (cms)    (hrs)     (mm)
INFLOW : ID= 1(  0402)    14.47     0.02     2.50     8.19
OUTFLOW: ID= 2(  0901)    14.47     0.02     2.50     8.19

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================================================================================================================

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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\bee1383b-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\bee1383b-


DATE: 10/21/2024                          TIME: 09:52:06

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : Hazel                         **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\lcarretas\AppD
|                  |              ata\Local\Temp\
|                  |              6c56141d-55a1-479e-a293-4c7603c6ace1\9e68e583
| Ptotal=212.00 mm |    Comments: Hazel
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    6.00 |  3.00   13.00 |  6.00   23.00 |  9.00   53.00
                1.00    4.00 |  4.00   17.00 |  7.00   13.00 | 10.00   38.00
                2.00    6.00 |  5.00   13.00 |  8.00   13.00 | 11.00   13.00

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--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   1.60   Curve Number   (CN)= 70.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.65   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.14

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   0.437

     PEAK FLOW       (cms)=   0.190 (i)
     TIME TO PEAK    (hrs)=  10.000
     RUNOFF VOLUME    (mm)= 132.328
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.624

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

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--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=  12.44
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  36.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=          8.83           3.61
     Dep. Storage     (mm)=          1.00           5.00
     Average Slope     (%)=          1.00           2.00
     Length            (m)=        287.98          40.00
     Mannings n            =         0.013          0.250

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


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00
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     Max.Eff.Inten.(mm/hr)=      53.00       112.33
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       6.21 (ii)   12.95 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.19         0.08
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.66         1.11       1.765 (iii)
     TIME TO PEAK    (hrs)=      10.00        10.00        10.00
     RUNOFF VOLUME    (mm)=     211.00       177.30       189.43
     TOTAL RAINFALL   (mm)=     212.00       212.00       212.00
     RUNOFF COEFFICIENT   =       1.00         0.84         0.89


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  75.0    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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--------------------
| RESERVOIR(  0501)|     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    |   0.3400      0.4900
                          0.0000     0.0300    |   0.3500      0.5400
                          0.0100     0.0700    |   0.3700      0.5900
                          0.0200     0.1000    |   0.3800      0.6400
                          0.0200     0.1800    |   0.4100      0.7400
                          0.0200     0.2200    |   0.4200      0.7900
                          0.0300     0.2600    |   0.4400      0.8400
                          0.0800     0.3500    |   3.9400      0.9500
                          0.1800     0.4000    |   6.9400      1.0100
                          0.3200     0.4400    |  10.7200      1.0600

                                    AREA     QPEAK     TPEAK       R.V.
                                    (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440      1.765     10.00     189.43
   OUTFLOW: ID= 1 (  0501)     12.440      1.718     10.00     186.94

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 97.33
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.8809

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--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  47.00   Dir. Conn.(%)=  33.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.20         0.23
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     53.54        40.00
     Mannings n           =     0.013        0.250

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


                        ---- TRANSFORMED HYETOGRAPH ----
               TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
              0.083     6.00 | 3.083    13.00 | 6.083    23.00 |  9.08    53.00
              0.167     6.00 | 3.167    13.00 | 6.167    23.00 |  9.17    53.00
              0.250     6.00 | 3.250    13.00 | 6.250    23.00 |  9.25    53.00
              0.333     6.00 | 3.333    13.00 | 6.333    23.00 |  9.33    53.00
              0.417     6.00 | 3.417    13.00 | 6.417    23.00 |  9.42    53.00
              0.500     6.00 | 3.500    13.00 | 6.500    23.00 |  9.50    53.00
              0.583     6.00 | 3.583    13.00 | 6.583    23.00 |  9.58    53.00
              0.667     6.00 | 3.667    13.00 | 6.667    23.00 |  9.67    53.00
              0.750     6.00 | 3.750    13.00 | 6.750    23.00 |  9.75    53.00
              0.833     6.00 | 3.833    13.00 | 6.833    23.00 |  9.83    53.00
              0.917     6.00 | 3.917    13.00 | 6.917    23.00 |  9.92    53.00
              1.000     6.00 | 4.000    13.00 | 7.000    23.00 | 10.00    53.00
              1.083     4.00 | 4.083    17.00 | 7.083    13.00 | 10.08    38.00
              1.167     4.00 | 4.167    17.00 | 7.167    13.00 | 10.17    38.00
              1.250     4.00 | 4.250    17.00 | 7.250    13.00 | 10.25    38.00
              1.333     4.00 | 4.333    17.00 | 7.333    13.00 | 10.33    38.00
              1.417     4.00 | 4.417    17.00 | 7.417    13.00 | 10.42    38.00
              1.500     4.00 | 4.500    17.00 | 7.500    13.00 | 10.50    38.00
              1.583     4.00 | 4.583    17.00 | 7.583    13.00 | 10.58    38.00
              1.667     4.00 | 4.667    17.00 | 7.667    13.00 | 10.67    38.00
              1.750     4.00 | 4.750    17.00 | 7.750    13.00 | 10.75    38.00
              1.833     4.00 | 4.833    17.00 | 7.833    13.00 | 10.83    38.00
              1.917     4.00 | 4.917    17.00 | 7.917    13.00 | 10.92    38.00
              2.000     4.00 | 5.000    17.00 | 8.000    13.00 | 11.00    38.00
              2.083     6.00 | 5.083    13.00 | 8.083    13.00 | 11.08    13.00
              2.167     6.00 | 5.167    13.00 | 8.167    13.00 | 11.17    13.00
              2.250     6.00 | 5.250    13.00 | 8.250    13.00 | 11.25    13.00
              2.333     6.00 | 5.333    13.00 | 8.333    13.00 | 11.33    13.00
              2.417     6.00 | 5.417    13.00 | 8.417    13.00 | 11.42    13.00
              2.500     6.00 | 5.500    13.00 | 8.500    13.00 | 11.50    13.00
              2.583     6.00 | 5.583    13.00 | 8.583    13.00 | 11.58    13.00
              2.667     6.00 | 5.667    13.00 | 8.667    13.00 | 11.67    13.00
              2.750     6.00 | 5.750    13.00 | 8.750    13.00 | 11.75    13.00
              2.833     6.00 | 5.833    13.00 | 8.833    13.00 | 11.83    13.00
              2.917     6.00 | 5.917    13.00 | 8.917    13.00 | 11.92    13.00
              3.000     6.00 | 6.000    13.00 | 9.000    13.00 | 12.00    13.00

     Max.Eff.Inten.(mm/hr)=      53.00        57.74
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       2.26 (ii)   11.06 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.09
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.04       0.057 (iii)
     TIME TO PEAK    (hrs)=       9.58        10.00        10.00
     RUNOFF VOLUME    (mm)=     211.00       145.09       166.83
     TOTAL RAINFALL   (mm)=     212.00       212.00       212.00
     RUNOFF COEFFICIENT   =       1.00         0.68         0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  69.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0402)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 1 (  0202):      1.60     0.190     10.00    132.33
     + ID2= 2 (  0203):      0.43     0.057     10.00    166.83
       ================================================
       ID = 3 (  0402):      2.03     0.247     10.00    139.64

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0402)|
|   3 +  2 =  1    |          AREA     QPEAK     TPEAK      R.V.
--------------------          (ha)     (cms)     (hrs)      (mm)
       ID1= 3 (  0402):      2.03     0.247     10.00    139.64
     + ID2= 2 (  0501):     12.44     1.718     10.00    186.94
       ================================================
       ID = 1 (  0402):     14.47     1.965     10.00    180.30

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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  --------------------------
  | Junction Command(0901) |
  --------------------------

                             AREA     QPEAK     TPEAK      R.V.
                             (ha)     (cms)     (hrs)      (mm)
  INFLOW : ID= 1(  0402)     14.47     1.96     10.00    180.30
  OUTFLOW: ID= 2(  0901)     14.47     1.96     10.00    180.30

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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\c476bd59-
  Summary filename: C:\Users\lcarretas\AppData\Local\Civica\VH5\13981d5a-de9d-475d-ae56-06a5922f796b\c476bd59-


DATE: 10/02/2024                          TIME: 02:34:10

USER:


COMMENTS: _____________________________________________________________


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  ************************************************
  ** SIMULATION : Hazel                         **
  ************************************************


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|    READ STORM    |    Filename: C:\Users\lcarretas\AppD
|                  |              ata\Local\Temp\
|                  |              fd8de6aa-1645-4195-9cee-1a385af14e31\9e68e583
| Ptotal=212.00 mm |    Comments: Hazel
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    6.00 |  3.00   13.00 |  6.00   23.00 |  9.00   53.00
                1.00    4.00 |  4.00   17.00 |  7.00   13.00 | 10.00   38.00
                2.00    6.00 |  5.00   13.00 |  8.00   13.00 | 11.00   13.00

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--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   1.60   Curve Number   (CN)= 70.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.65   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.14

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

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00

     Unit Hyd Qpeak  (cms)=   0.437

     PEAK FLOW       (cms)=   0.190 (i)
     TIME TO PEAK    (hrs)=  10.000
     RUNOFF VOLUME    (mm)= 132.328
     TOTAL RAINFALL   (mm)= 212.000
     RUNOFF COEFFICIENT   =   0.624

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

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--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  47.00   Dir. Conn.(%)=  33.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.20          0.23
     Dep. Storage     (mm)=        1.00          5.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=       53.54         40.00
     Mannings n           =       0.013         0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    6.00 | 3.083   13.00 | 6.083   23.00 |  9.08   53.00
               0.167    6.00 | 3.167   13.00 | 6.167   23.00 |  9.17   53.00
               0.250    6.00 | 3.250   13.00 | 6.250   23.00 |  9.25   53.00
               0.333    6.00 | 3.333   13.00 | 6.333   23.00 |  9.33   53.00
               0.417    6.00 | 3.417   13.00 | 6.417   23.00 |  9.42   53.00
               0.500    6.00 | 3.500   13.00 | 6.500   23.00 |  9.50   53.00
               0.583    6.00 | 3.583   13.00 | 6.583   23.00 |  9.58   53.00
               0.667    6.00 | 3.667   13.00 | 6.667   23.00 |  9.67   53.00
               0.750    6.00 | 3.750   13.00 | 6.750   23.00 |  9.75   53.00
               0.833    6.00 | 3.833   13.00 | 6.833   23.00 |  9.83   53.00
               0.917    6.00 | 3.917   13.00 | 6.917   23.00 |  9.92   53.00
               1.000    6.00 | 4.000   13.00 | 7.000   23.00 | 10.00   53.00
               1.083    4.00 | 4.083   17.00 | 7.083   13.00 | 10.08   38.00
               1.167    4.00 | 4.167   17.00 | 7.167   13.00 | 10.17   38.00
               1.250    4.00 | 4.250   17.00 | 7.250   13.00 | 10.25   38.00
               1.333    4.00 | 4.333   17.00 | 7.333   13.00 | 10.33   38.00
               1.417    4.00 | 4.417   17.00 | 7.417   13.00 | 10.42   38.00
               1.500    4.00 | 4.500   17.00 | 7.500   13.00 | 10.50   38.00
               1.583    4.00 | 4.583   17.00 | 7.583   13.00 | 10.58   38.00
               1.667    4.00 | 4.667   17.00 | 7.667   13.00 | 10.67   38.00
               1.750    4.00 | 4.750   17.00 | 7.750   13.00 | 10.75   38.00
               1.833    4.00 | 4.833   17.00 | 7.833   13.00 | 10.83   38.00
               1.917    4.00 | 4.917   17.00 | 7.917   13.00 | 10.92   38.00
               2.000    4.00 | 5.000   17.00 | 8.000   13.00 | 11.00   38.00
               2.083    6.00 | 5.083   13.00 | 8.083   13.00 | 11.08   13.00
               2.167    6.00 | 5.167   13.00 | 8.167   13.00 | 11.17   13.00
               2.250    6.00 | 5.250   13.00 | 8.250   13.00 | 11.25   13.00
               2.333    6.00 | 5.333   13.00 | 8.333   13.00 | 11.33   13.00
               2.417    6.00 | 5.417   13.00 | 8.417   13.00 | 11.42   13.00
               2.500    6.00 | 5.500   13.00 | 8.500   13.00 | 11.50   13.00
               2.583    6.00 | 5.583   13.00 | 8.583   13.00 | 11.58   13.00
               2.667    6.00 | 5.667   13.00 | 8.667   13.00 | 11.67   13.00
               2.750    6.00 | 5.750   13.00 | 8.750   13.00 | 11.75   13.00
               2.833    6.00 | 5.833   13.00 | 8.833   13.00 | 11.83   13.00
               2.917    6.00 | 5.917   13.00 | 8.917   13.00 | 11.92   13.00
               3.000    6.00 | 6.000   13.00 | 9.000   13.00 | 12.00   13.00
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     Max.Eff.Inten.(mm/hr)=      53.00        57.74
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       2.26 (ii)   11.06 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.30         0.09
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.04          0.057 (iii)
     TIME TO PEAK    (hrs)=       9.58        10.00         10.00
     RUNOFF VOLUME    (mm)=     211.00       145.09        166.83
     TOTAL RAINFALL   (mm)=     212.00       212.00        212.00
     RUNOFF COEFFICIENT   =       1.00         0.68          0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  69.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=  12.44
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  36.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       8.83         3.61
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     287.98        40.00
     Mannings n            =      0.013        0.250

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

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
              0.083     6.00 | 3.083    13.00 | 6.083    23.00 |  9.08    53.00
              0.167     6.00 | 3.167    13.00 | 6.167    23.00 |  9.17    53.00
              0.250     6.00 | 3.250    13.00 | 6.250    23.00 |  9.25    53.00
              0.333     6.00 | 3.333    13.00 | 6.333    23.00 |  9.33    53.00
              0.417     6.00 | 3.417    13.00 | 6.417    23.00 |  9.42    53.00
              0.500     6.00 | 3.500    13.00 | 6.500    23.00 |  9.50    53.00
              0.583     6.00 | 3.583    13.00 | 6.583    23.00 |  9.58    53.00
              0.667     6.00 | 3.667    13.00 | 6.667    23.00 |  9.67    53.00
              0.750     6.00 | 3.750    13.00 | 6.750    23.00 |  9.75    53.00
              0.833     6.00 | 3.833    13.00 | 6.833    23.00 |  9.83    53.00
              0.917     6.00 | 3.917    13.00 | 6.917    23.00 |  9.92    53.00
              1.000     6.00 | 4.000    13.00 | 7.000    23.00 | 10.00    53.00
              1.083     4.00 | 4.083    17.00 | 7.083    13.00 | 10.08    38.00
              1.167     4.00 | 4.167    17.00 | 7.167    13.00 | 10.17    38.00
              1.250     4.00 | 4.250    17.00 | 7.250    13.00 | 10.25    38.00
              1.333     4.00 | 4.333    17.00 | 7.333    13.00 | 10.33    38.00
              1.417     4.00 | 4.417    17.00 | 7.417    13.00 | 10.42    38.00
              1.500     4.00 | 4.500    17.00 | 7.500    13.00 | 10.50    38.00
              1.583     4.00 | 4.583    17.00 | 7.583    13.00 | 10.58    38.00
              1.667     4.00 | 4.667    17.00 | 7.667    13.00 | 10.67    38.00
              1.750     4.00 | 4.750    17.00 | 7.750    13.00 | 10.75    38.00
              1.833     4.00 | 4.833    17.00 | 7.833    13.00 | 10.83    38.00
              1.917     4.00 | 4.917    17.00 | 7.917    13.00 | 10.92    38.00
              2.000     4.00 | 5.000    17.00 | 8.000    13.00 | 11.00    38.00
              2.083     6.00 | 5.083    13.00 | 8.083    13.00 | 11.08    13.00
              2.167     6.00 | 5.167    13.00 | 8.167    13.00 | 11.17    13.00
              2.250     6.00 | 5.250    13.00 | 8.250    13.00 | 11.25    13.00
              2.333     6.00 | 5.333    13.00 | 8.333    13.00 | 11.33    13.00
              2.417     6.00 | 5.417    13.00 | 8.417    13.00 | 11.42    13.00
              2.500     6.00 | 5.500    13.00 | 8.500    13.00 | 11.50    13.00
              2.583     6.00 | 5.583    13.00 | 8.583    13.00 | 11.58    13.00
              2.667     6.00 | 5.667    13.00 | 8.667    13.00 | 11.67    13.00
              2.750     6.00 | 5.750    13.00 | 8.750    13.00 | 11.75    13.00
              2.833     6.00 | 5.833    13.00 | 8.833    13.00 | 11.83    13.00
              2.917     6.00 | 5.917    13.00 | 8.917    13.00 | 11.92    13.00
              3.000     6.00 | 6.000    13.00 | 9.000    13.00 | 12.00    13.00

     Max.Eff.Inten.(mm/hr)=      53.00       112.33
               over (min)         5.00        15.00
     Storage Coeff.  (min)=       6.21 (ii)   12.95 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.19         0.08
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.66         1.11          1.765 (iii)
     TIME TO PEAK    (hrs)=      10.00        10.00         10.00
     RUNOFF VOLUME    (mm)=     211.00       177.30        189.43
     TOTAL RAINFALL   (mm)=     212.00       212.00        212.00
     RUNOFF COEFFICIENT   =       1.00         0.84          0.89

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  75.0    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  (  0402)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
       ID1= 1 (  0201):    12.44   1.765    10.00   189.43
     + ID2= 2 (  0202):     1.60   0.190    10.00   132.33
       ================================================
       ID = 3 (  0402):    14.04   1.955    10.00   182.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0402)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK      R.V.
--------------------          (ha)    (cms)    (hrs)      (mm)
       ID1= 3 (  0402):    14.04   1.955    10.00   182.93
     + ID2= 2 (  0203):     0.43   0.057    10.00   166.83
       ================================================
       ID = 1 (  0402):    14.47   2.012    10.00   182.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

  --------------------------
  | Junction Command(0901) |
  --------------------------

                              AREA     QPEAK    TPEAK      R.V.
                              (ha)     (cms)    (hrs)      (mm)
  INFLOW : ID= 1(  0402)    14.47     2.01    10.00   182.45
  OUTFLOW: ID= 2(  0901)    14.47     2.01    10.00   182.45

  --------------------------------------------------------------------------------

 FINISH
================================================================================================================
```

Appendix D:
Stage-Storage-Discharge Tables

Maple Bridge Subdivision, Phase 2
SWM Pond Volume Table - Dead Storage

Designed: LJC
Checked: JG
Date: 10/21/2024

Wet Pond Characteristics:

Top Elevation:	269.30	m
Bottom Elevation	265.00	m
Permanent Pool:	267.00	m
Stage	0.1	m

Stormwater Management Pond - Dead Storage											
Pond Geometry							Pond Volume (m^3)				
Elevation (m)	Depth (m)	Wet Cell Area (m^2)	Forebay Area (m^2)	Avg. Wet Cell Area (m^2)	Avg. Forebay Area (m^2)	Total Area	Wet Cell Volume	Forebay Volume	Accum. Wet Cell	Accum. Forebay	Accum. Dead
265.00	**0.00**	**1223**	**0**	**1223**	**0**	**1223**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
265.10	0.10	1262	0	1242	0	1262	124.24	0.00	124.24	0.00	124.24
265.20	0.20	1300	0	1281	0	1300	128.11	0.00	252.34	0.00	252.34
265.30	0.30	1339	0	1320	0	1339	131.98	0.00	384.32	0.00	384.32
265.40	0.40	1378	0	1359	0	1378	135.85	0.00	520.17	0.00	520.17
265.50	0.50	1417	0	1397	0	1417	139.72	0.00	659.89	0.00	659.89
265.60	0.60	1455	0	1436	0	1455	143.59	0.00	803.49	0.00	803.49
265.70	0.70	1494	0	1475	0	1494	147.46	0.00	950.95	0.00	950.95
265.80	0.80	1533	0	1513	0	1533	151.34	0.00	1102.29	0.00	1102.29
265.90	0.90	1571	0	1552	0	1571	155.21	0.00	1257.49	0.00	1257.49
266.00	**1.00**	**1610**	**428**	**1591**	**428**	**2038**	**159.08**	**0.00**	**1416.57**	**0.00**	**1416.57**
266.10	1.10	1649	461	1630	444	2109	162.95	44.43	1579.52	44.43	1623.95
266.20	1.20	1688	493	1668	477	2181	166.82	47.68	1746.34	92.10	1838.44
266.30	1.30	1726	526	1707	509	2252	170.69	50.93	1917.04	143.03	2060.06
266.40	**1.40**	**1765**	**558**	**1746**	**542**	**2323**	**174.56**	**54.18**	**2091.60**	**197.20**	**2288.80**
266.50	1.50	1847	619	1806	588	2466	180.62	58.84	2272.22	256.04	2528.26
266.60	1.60	1930	680	1889	649	2609	188.85	64.93	2461.07	320.97	2782.03
266.70	1.70	2012	741	1971	710	2753	197.08	71.01	2658.15	391.98	3050.13
266.80	1.80	2094	801	2053	771	2896	205.32	77.09	2863.47	469.07	3332.53
266.90	1.90	2177	862	2136	832	3039	213.55	83.18	3077.02	552.24	3629.26
267.00	**2.00**	**2259**	**923**	**2218**	**893**	**3182**	**221.78**	**89.26**	**3298.80**	**641.50**	**3940.30**

Maple Bridge Subdivision, Phase 2
SWM Pond Volume Table - Total Storage

Designed: LJC
Checked: JG
Date: 10/21/2024

Wet Pond Characteristics:

Top Elevation: 269.30 m
Bottom Elev: 265.00 m
Permanent Pool: 267.00 m
Stage 0.1 m

Stormwater Management Pond							
Pond Geometry				Pond Volume (m^3)			
Elevation (m)	Depth (m)	Area (m^2)	Avg. Area (m)	Dead	Accum. Dead	Live	Accum. Live
265.00	**0.00**	**1223**	**1223.00**	**0.00**	**0.00**	**0.00**	**0.00**
265.10	0.10	1262	1242.36	124.24	124.24	0.00	0.00
265.20	0.20	1300	1281.07	128.11	252.34	0.00	0.00
265.30	0.30	1339	1319.79	131.98	384.32	0.00	0.00
265.40	0.40	1378	1358.50	135.85	520.17	0.00	0.00
265.50	0.50	1417	1397.21	139.72	659.89	0.00	0.00
265.60	0.60	1455	1435.93	143.59	803.49	0.00	0.00
265.70	0.70	1494	1474.64	147.46	950.95	0.00	0.00
265.80	0.80	1533	1513.36	151.34	1102.29	0.00	0.00
265.90	0.90	1571	1552.07	155.21	1257.49	0.00	0.00
266.00	**1.00**	**2038**	**1804.79**	180.48	**1416.57**	**0.00**	**0.00**
266.10	1.10	2109	2073.75	207.38	1623.95	0.00	0.00
266.20	1.20	2181	2144.96	214.50	1838.44	0.00	0.00
266.30	1.30	2252	2216.18	221.62	2060.06	0.00	0.00
266.40	**1.40**	**2323**	**2287.39**	228.74	**2288.80**	**0.00**	**0.00**
266.50	1.50	2466	2394.58	239.46	2528.26	0.00	0.00
266.60	1.60	2609	2537.75	253.78	2782.03	0.00	0.00
266.70	1.70	2753	2680.92	268.09	3050.13	0.00	0.00
266.80	1.80	2896	2824.08	282.41	3332.53	0.00	0.00
266.90	1.90	3039	2967.25	296.73	3629.26	0.00	0.00
267.00	**2.00**	**3182**	**3110.42**	311.04	**3940.30**	**0.00**	**0.00**
267.10	2.10	3350	3266.08	311.04	3940.30	326.61	326.61
267.20	2.20	3518	3434.25	311.04	3940.30	343.43	670.03
267.30	2.30	3687	3602.42	311.04	3940.30	360.24	1030.28
267.40	2.40	3855	3770.58	311.04	3940.30	377.06	1407.33
267.50	2.50	4023	3938.75	311.04	3940.30	393.88	1801.21
267.60	**2.60**	**4191**	**4106.92**	**311.04**	**3940.30**	**410.69**	**2211.90**
267.70	2.70	4282	4236.29	311.04	3940.30	423.63	2635.53
267.80	2.80	4372	4326.88	311.04	3940.30	432.69	3068.22
267.90	2.90	4463	4417.47	311.04	3940.30	441.75	3509.96
268.00	3.00	4553	4508.06	311.04	3940.30	450.81	3960.77
268.10	3.10	4644	4598.65	311.04	3940.30	459.86	4420.64
268.20	3.20	4735	4689.24	311.04	3940.30	468.92	4889.56
268.30	3.30	4825	4779.82	311.04	3940.30	477.98	5367.54
268.40	3.40	4916	4870.41	311.04	3940.30	487.04	5854.58
268.50	3.50	5006	4961.00	311.04	3940.30	496.10	6350.68
268.60	3.60	5097	5051.59	311.04	3940.30	505.16	6855.84
268.70	3.70	5187	5142.18	311.04	3940.30	514.22	7370.06
268.80	3.80	5278	5232.76	311.04	3940.30	523.28	7893.34
268.90	3.90	5369	5323.35	311.04	3940.30	532.34	8425.67
269.00	4.00	5459	5413.94	311.04	3940.30	541.39	8967.06
269.10	4.10	5550	5504.53	311.04	3940.30	550.45	9517.52
269.20	4.20	5640	5595.12	311.04	3940.30	559.51	10077.03
269.30	**4.30**	**5731**	**5685.71**	**311.04**	**3940.30**	**568.57**	**10645.60**

Maple Bridge Subdivision, Phase 2
SWM Pond Discharge Table

Designed:	LJC
Checked:	JG
Date:	10/21/2024

Pond Discharge Table:

Orifice #1:		**Orifice #2:**			**Outlet Pipe**		**Overflow Weir:**		
Diameter:	120	Diameter:	370	mm	Diameter:	600	Bottom Length:	27	m
Area:	0.011	Area:	0.108	m^2	Area:	0.283	Sill Elevation:	268.90	m
C:	0.63	C:	0.63		C:	0.80	D/S Weir Length:	15.4	m
Invert:	267.00	Invert:	267.00	m	Invert:	266.85	Side Slopes (H:V)	5	:1
							Weir Depth:	0.40	m

	Orifice #1		Orifice #2		Outlet Pipe		Overflow Weir			
Elevation (m)	Head (m)	Discharge (m)	Head (m)	Discharge (m)	Head (m)	Discharge (m)	Head (m)	Discharge (m)	Hydraulic Control	Discharge (m^3/s)
267.00	0.000	0.000	0.000	0.000	0.150	0.026	0	0.000	Orifice	0.000
267.10	0.040	0.005	0.000	0.000	0.250	0.072	0	0.000	Orifice	0.005
267.20	0.140	0.012	0.015	0.000	0.350	0.136	0	0.000	Orifice	0.012
267.30	0.240	0.015	0.115	0.000	0.450	0.212	0	0.000	Orifice	0.015
267.40	0.340	0.018	0.215	0.000	0.550	0.293	0	0.000	Orifice	0.018
267.50	0.440	0.021	0.315	0.000	0.650	0.808	0	0.000	Orifice	0.021
267.60	0.540	0.023	0.415	0.000	0.750	0.868	0	0.000	Orifice	0.023
267.70	0.640	0.025	0.515	0.000	0.850	0.924	0	0.000	Orifice	0.025
267.80	0.740	0.027	0.615	0.000	0.950	0.977	0	0.000	Orifice	0.027
267.90	0.840	0.029	0.715	0.049	1.050	1.027	0	0.000	Orifice	0.078
268.00	0.940	0.031	0.815	0.153	1.150	1.074	0	0.000	Orifice	0.184
268.10	1.040	0.032	0.915	0.287	1.250	1.120	0	0.000	Orifice	0.319
268.20	1.140	0.034	1.015	0.302	1.350	1.164	0	0.000	Orifice	0.336
268.30	1.240	0.035	1.115	0.317	1.450	1.206	0	0.000	Orifice	0.352
268.40	1.340	0.037	1.215	0.331	1.550	1.247	0	0.000	Orifice	0.367
268.50	1.440	0.038	1.315	0.344	1.650	1.287	0	0.000	Orifice	0.382
268.60	1.540	0.039	1.415	0.357	1.750	1.325	0	0.000	Orifice	0.396
268.70	1.640	0.040	1.515	0.369	1.850	1.363	0	0.000	Orifice	0.410
268.80	1.740	0.042	1.615	0.381	1.950	1.399	0	0.000	Orifice	0.423
268.90	1.840	0.043	1.715	0.393	2.050	1.435	9.1E-13	0.000	Orifice	0.436
269.00	1.940	0.044	1.815	0.404	2.150	1.469	0.1	1.212	Orifice	1.660
269.10	2.040	0.045	1.915	0.415	2.250	1.503	0.2	3.475	Orifice	3.935
269.20	2.140	0.046	2.015	0.426	2.350	1.536	0.3	6.470	Orifice	6.942
269.30	2.240	0.047	2.115	0.436	2.450	1.568	0.4	10.234	Orifice	10.717

Notes:

Orifice Equation is: $Q = C \times A \times (2gH)^{0.5}$

Where:
Q = flow rate (cms)
C = constant
A = area of opening(sq. m)
H = net head on the orifice
g = Acceleration due to gravity

Maple Bridge Subdivision, Phase 2
SWM Pond - Partially Full Orifice - #1

Designed: LJC
Checked: JG
Date: 10/21/2024

Partially Full Orifice Equation

Orifice Equation
Q = C x A x (2gH)^0.5
Q = flow rate (m^3)
C = constant
A = area of opening (m^2)
H = net head on the orifice
g = Acceleration due to gravity

Orifice Constant (C): **0.63**
Depth Increment (m): **0.10**
Minimum Elevation (Invert of Control) (m): **267.00**
Maximum Elevation (Top of SWMF) (m): **269.30**

Control Features
Orifice Diameter (m): **0.120**
Mannings Value: **0.013**
Invert Elevation: **267.00**
Inlet Type: **2**
1 = Projecting
2 = Flush

Inlet Control Equation (Smith) Projecting Inlet
MMF Model y=(a*b+c*x^d)/(b+x^d)
Coefficient Data
a = 0.0168
b = 1.77
c = 3.06
d = 2.27

Inlet Control Equation (Smith)Flush Inlet
MMF Model y=(a*b+c*x^d)/(b+x^d)
Coefficient Data
a = -1.08E-03
b = 2.30E+00
c = 3.95
d = 2.08

Water Elevation	Depth from Min. Elevation	Pipe Partially Full Inlet Control Flow
m	m	m^3/s
267.00	0.00	0.000
267.10	0.10	0.005
267.20	0.20	0.012
267.30	0.30	0.015
267.40	0.40	0.018
267.50	0.50	0.021
267.60	0.60	0.023
267.70	0.70	0.025
267.80	0.80	0.027
267.90	0.90	0.029
268.00	1.00	0.031
268.10	1.10	0.032
268.20	1.20	0.034
268.30	1.30	0.035
268.40	1.40	0.037
268.50	1.50	0.038
268.60	1.60	0.039
268.70	1.70	0.040
268.80	1.80	0.042
268.90	1.90	0.043
269.00	2.00	0.044
269.10	2.10	0.045
269.20	2.20	0.046
269.30	2.30	0.047

Maple Bridge Subdivision, Phase 2
SWM Pond - Partially Full Orifice - Outlet Pipe

Designed: LJC
Checked: JG
Date: 10/21/2024

Partially Full Orifice Equation

Orifice Equation
Q = C x A x (2gH)^0.5
Q = flow rate (m^3)
C = constant
A = area of opening (m^2)
H = net head on the orifice
g = Acceleration due to gravity

Orifice Constant (C): **0.80**
Depth Increment (m): **0.10**
Minimum Elevation (Invert of Control) (m): **266.85**
Maximum Elevation (Top of SWMF) (m): **269.30**

Control Features
Orifice Diameter (m): **0.600**
Mannings Value: **0.013**
Invert Elevation: **266.85**
Inlet Type: **2**
1 = Projecting
2 = Flush

Inlet Control Equation (Smith) Projecting Inlet
MMF Model y=(a*b+c*x^d)/(b+x^d)
Coefficient Data
a = 0.0168
b = 1.77
c = 3.06
d = 2.27

Inlet Control Equation (Smith) Flush Inlet
MMF Model y=(a*b+c*x^d)/(b+x^d)
Coefficient Data
a = -1.08E-03
b = 2.30E+00
c = 3.95
d = 2.08

Water Elevation	Depth from Min. Elevation	Pipe Partially Full Inlet Control Flow
m	m	m^3/s
266.85	0.00	0.000
266.90	0.05	0.002
267.00	0.15	0.026
267.10	0.25	0.072
267.20	0.35	0.136
267.30	0.45	0.212
267.40	0.55	0.293
267.50	0.65	0.374
267.60	0.75	0.450
267.70	0.85	0.521
267.80	0.95	0.808
267.90	1.05	0.868
268.00	1.15	0.924
268.10	1.25	0.977
268.20	1.35	1.027
268.30	1.45	1.074
268.40	1.55	1.120
268.50	1.65	1.164
268.60	1.75	1.206
268.70	1.85	1.247
268.80	1.95	1.287
268.90	2.05	1.325
269.00	2.15	1.363
269.10	2.25	1.399
269.20	2.35	1.435
269.30	2.45	1.469

Maple Bridge Subdivision, Phase 2
Discharge-Volume

Designed:	LJC
Checked:	JG
Date:	10/21/2024

Elevation	Discharge	Volume
267.00	0.00	0.00
267.10	0.00	326.61
267.20	0.01	670.03
267.30	0.02	1030.28
267.40	0.02	1407.33
267.50	0.02	1801.21
267.60	0.02	2211.90
267.70	0.03	2635.53
267.80	0.03	3068.22
267.90	0.08	3509.96
268.00	0.18	3960.77
268.10	0.32	4420.64
268.20	0.34	4889.56
268.30	0.35	5367.54
268.40	0.37	5854.58
268.50	0.38	6350.68
268.60	0.40	6855.84
268.70	0.41	7370.06
268.80	0.42	7893.34
268.90	0.44	8425.67
269.00	1.66	8967.06
269.10	3.94	9517.52
269.20	6.94	10077.03
269.30	10.72	10645.60

Maple Bridge Subdivision, Phase 2
Stage-Storage-Discharge

Designed:	LJC
Checked:	JG
Date:	10/21/2024

Stormwater Management Pond							
Pond Geometry				Pond Volume (m^3)			Discharge
Elevation (m)	Depth (m)	Area (m^2)	Avg. Area (m)	Dead	Live	Total	(m^3/s)
265.00	0.00	1223.0	1223.0	0	0	0.0	0.000
265.10	0.10	1261.7	1242.4	124	0	124.2	0.000
265.20	0.20	1300.4	1281.1	252	0	252.3	0.000
265.30	0.30	1339.1	1319.8	384	0	384.3	0.000
265.40	0.40	1377.9	1358.5	520	0	520.2	0.000
265.50	0.50	1416.6	1397.2	660	0	659.9	0.000
265.60	0.60	1455.3	1435.9	803	0	803.5	0.000
265.70	0.70	1494.0	1474.6	951	0	951.0	0.000
265.80	0.80	1532.7	1513.4	1102	0	1102.3	0.000
265.90	0.90	1571.4	1552.1	1257	0	1257.5	0.000
266.00	1.00	2038.1	1804.8	1417	0	1416.6	0.000
266.10	1.10	2109.4	2073.8	1624	0	1623.9	0.000
266.20	1.20	2180.6	2145.0	1838	0	1838.4	0.000
266.30	1.30	2251.8	2216.2	2060	0	2060.1	0.000
266.40	1.40	2323.0	2287.4	2289	0	2288.8	0.000
266.50	1.50	2466.2	2394.6	2528	0	2528.3	0.000
266.60	1.60	2609.3	2537.8	2782	0	2782.0	0.000
266.70	1.70	2752.5	2680.9	3050	0	3050.1	0.000
266.80	1.80	2895.7	2824.1	3333	0	3332.5	0.000
266.90	1.90	3038.8	2967.3	3629	0	3629.3	0.000
267.00	2.00	3182.0	3110.4	3940	0	3940.3	0.000
267.10	2.10	3350.2	3266.1	3940	327	4266.9	0.005
267.20	2.20	3518.3	3434.3	3940	670	4610.3	0.012
267.30	2.30	3686.5	3602.4	3940	1030	4970.6	0.015
267.40	2.40	3854.7	3770.6	3940	1407	5347.6	0.018
267.50	2.50	4022.8	3938.8	3940	1801	5741.5	0.021
267.60	2.60	4191.0	4106.9	3940	2212	6152.2	0.023
267.70	2.70	4281.6	4236.3	3940	2636	6575.8	0.025
267.80	2.80	4372.2	4326.9	3940	3068	7008.5	0.027
267.90	2.90	4462.8	4417.5	3940	3510	7450.3	0.078
268.00	3.00	4553.4	4508.1	3940	3961	7901.1	0.184
268.10	3.10	4643.9	4598.6	3940	4421	8360.9	0.319
268.20	3.20	4734.5	4689.2	3940	4890	8829.9	0.336
268.30	3.30	4825.1	4779.8	3940	5368	9307.8	0.352
268.40	3.40	4915.7	4870.4	3940	5855	9794.9	0.367
268.50	3.50	5006.3	4961.0	3940	6351	10291.0	0.382
268.60	3.60	5096.9	5051.6	3940	6856	10796.1	0.396
268.70	3.70	5187.5	5142.2	3940	7370	11310.4	0.410
268.80	3.80	5278.1	5232.8	3940	7893	11833.6	0.423
268.90	3.90	5368.6	5323.4	3940	8426	12366.0	0.436
269.00	4.00	5459.2	5413.9	3940	8967	12907.4	1.660
269.10	4.10	5549.8	5504.5	3940	9518	13457.8	3.935
269.20	4.20	5640.4	5595.1	3940	10077	14017.3	6.942
269.30	4.30	5731.0	5685.7	3940	10646	14585.9	10.717

Total Dead Storage = **3,940** m^3
Total Live Storage = **10,646** m^3

Maple Bridge Subdivision, Phase 2
Operation Characteristics

Designed:	LJC
Checked:	JG
Date:	10/21/2024

STORM EVENT	VOLUME (m^3)	DISCHARGE (m^3/s)	WATER ELEVATION (m)
4-hr CHI			
1:2-year	1,846	0.02	267.51
1:5-year	2,712	0.04	267.72
1:10-year	3,177	0.06	267.82
1:25-year	3,681	0.12	267.94
1:50-year	3,913	0.16	267.99
1:100-year	4,134	0.23	268.04
25 mm	1,241	0.02	267.36
12-hr SCS			
1:2-year	2,584	0.03	267.69
1:5-year	3,405	0.08	267.88
1:10-year	3,839	0.15	267.97
1:25-year	4,380	0.31	268.09
1:50-year	4,893	0.34	268.20
1:100-year	5,521	0.36	268.33
24-hr SCS			
1:2-year	2,860	0.04	267.75
1:5-year	3,750	0.13	267.95
1:10-year	4,228	0.26	268.06
1:25-year	4,977	0.34	268.22
1:50-year	5,704	0.36	268.37
1:100-year	6,442	0.38	268.52
Hazel	8,809	1.72	269.00
Hazel (Uncontrolled)	-	1.77	269.00

Maple Bridge Subdivision, Phase 2
FILE NO. 422492

25mm 4 HOUR DRAWDOWN TIME FOR POND - ULTIMATE CONDITIONS

(Using the falling head orifice equation)

$$t = \frac{2 A_p}{C A_o (2g)^{0.5}} \quad (h_1^{0.5} - h_2^{0.5})$$

		Value			
where t =	drawdown time in seconds				
A_p =	surface area of pond (m^2)	3,777	m^2		
C =	discharge coefficient (typically 0.63)	0.63			
A_o =	cross-sectional area of orifice (m^2)	0.01131	m^2 for	120	mm dia
g =	gravitational acceleration constant (9.81 m/s^2)	9.81	m/s^2		
h_1 =	starting water elevation above the orifice (m)	0.356	m		
h_2 =	ending water elevation above the orifice (m)	0.000	m		

t = 142,772.06 seconds Q = 0.0188 m^3/s

t = 39.66 hours

Maple Bridge Subdivision, Phase 2
FILE NO. 422492

25mm 4 HOUR DRAWDOWN TIME FOR POND - EXTENDED DETENTION

(Using the falling head orifice equation)

$$t = \frac{2 A_p}{C A_o (2g)^{0.5}} \quad (h_1^{0.5} - h_2^{0.5})$$

		Value			
where t =	drawdown time in seconds				
A_p =	surface area of pond (m^2)	4,327	m^2		
C =	discharge coefficient (typically 0.63)	0.63			
A_o =	cross-sectional area of orifice (m^2)	0.01131	m^2 for	120	mm dia
g =	gravitational acceleration constant (9.81 m/s^2)	9.81	m/s^2		
h_1 =	starting water elevation above the orifice (m)	0.800	m		
h_2 =	ending water elevation above the orifice (m)	0.000	m		

t = 245,249.10 seconds Q = 0.0282 m^3/s

t = 68.12 hours

```
*********************************
** SIMULATION:25 mm 4-hr CHI  **
*********************************
--------------------
| RESERVOIR(  0501)|     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   |   0.3400      0.4900
                         0.0000     0.0300   |   0.3500      0.5400
                         0.0100     0.0700   |   0.3700      0.5900
                         0.0200     0.1000   |   0.3800      0.6400
                         0.0200     0.1800   |   0.4100      0.7400
                         0.0200     0.2200   |   0.4200      0.7900
                         0.0300     0.2600   |   0.4400      0.8400
                         0.0800     0.3500   |   3.9400      0.9500
                         0.1800     0.4000   |   6.9400      1.0100
                         0.3200     0.4400   |  10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     0.536      1.50      11.56
   OUTFLOW: ID= 1 (  0501)     12.440     0.020      2.50       9.07

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.73
                  TIME SHIFT OF PEAK FLOW         (min)= 60.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1241

--------------------------------------------------------------------------------
*********************************************
** SIMULATION:Run 01 - 2yr 4hr 10min Chicago **
*********************************************
--------------------
| RESERVOIR(  0501)|     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   |   0.3400      0.4900
                         0.0000     0.0300   |   0.3500      0.5400
                         0.0100     0.0700   |   0.3700      0.5900
                         0.0200     0.1000   |   0.3800      0.6400
                         0.0200     0.1800   |   0.4100      0.7400
                         0.0200     0.2200   |   0.4200      0.7900
                         0.0300     0.2600   |   0.4400      0.8400
                         0.0800     0.3500   |   3.9400      0.9500
                         0.1800     0.4000   |   6.9400      1.0100
                         0.3200     0.4400   |  10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     0.878      1.33      16.66
   OUTFLOW: ID= 1 (  0501)     12.440     0.020      1.58      14.16

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.28
                  TIME SHIFT OF PEAK FLOW         (min)= 15.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1846

--------------------------------------------------------------------------------
*********************************************
** SIMULATION:Run 02 - 5yr 4hr 10min Chicago **
*********************************************
--------------------
| RESERVOIR(  0501)|     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   |   0.3400      0.4900
                         0.0000     0.0300   |   0.3500      0.5400
                         0.0100     0.0700   |   0.3700      0.5900
                         0.0200     0.1000   |   0.3800      0.6400
                         0.0200     0.1800   |   0.4100      0.7400
                         0.0200     0.2200   |   0.4200      0.7900
                         0.0300     0.2600   |   0.4400      0.8400
                         0.0800     0.3500   |   3.9400      0.9500
                         0.1800     0.4000   |   6.9400      1.0100
                         0.3200     0.4400   |  10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     1.286      1.33      24.13
   OUTFLOW: ID= 1 (  0501)     12.440     0.036      4.17      21.63

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.82
                  TIME SHIFT OF PEAK FLOW         (min)=170.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.2712

--------------------------------------------------------------------------------
*********************************************
** SIMULATION:Run 03 - 10yr 4hr 10min Chicago **
*********************************************
--------------------
| RESERVOIR(  0501)|     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   |   0.3400      0.4900
                         0.0000     0.0300   |   0.3500      0.5400
                         0.0100     0.0700   |   0.3700      0.5900
                         0.0200     0.1000   |   0.3800      0.6400
                         0.0200     0.1800   |   0.4100      0.7400
                         0.0200     0.2200   |   0.4200      0.7900
                         0.0300     0.2600   |   0.4400      0.8400
                         0.0800     0.3500   |   3.9400      0.9500
                         0.1800     0.4000   |   6.9400      1.0100
                         0.3200     0.4400   |  10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     1.549      1.33      29.24
   OUTFLOW: ID= 1 (  0501)     12.440     0.062      4.08      26.75

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  4.01
                  TIME SHIFT OF PEAK FLOW         (min)=165.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.3177

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*********************************************
** SIMULATION:Run 04 - 25yr 4hr 10min Chicago **
*********************************************
--------------------
| RESERVOIR(  0501)|     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   |   0.3400      0.4900
                         0.0000     0.0300   |   0.3500      0.5400
                         0.0100     0.0700   |   0.3700      0.5900
                         0.0200     0.1000   |   0.3800      0.6400
                         0.0200     0.1800   |   0.4100      0.7400
                         0.0200     0.2200   |   0.4200      0.7900
                         0.0300     0.2600   |   0.4400      0.8400
                         0.0800     0.3500   |   3.9400      0.9500
                         0.1800     0.4000   |   6.9400      1.0100
                         0.3200     0.4400   |  10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     1.900      1.33      36.05
   OUTFLOW: ID= 1 (  0501)     12.440     0.116      4.00      33.56

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.10
                  TIME SHIFT OF PEAK FLOW         (min)=160.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.3681

--------------------------------------------------------------------------------
*********************************************
** SIMULATION:Run 05 - 50yr 4hr 10min Chicago **
*********************************************
--------------------
| RESERVOIR(  0501)|     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   |   0.3400      0.4900
                         0.0000     0.0300   |   0.3500      0.5400
                         0.0100     0.0700   |   0.3700      0.5900
                         0.0200     0.1000   |   0.3800      0.6400
                         0.0200     0.1800   |   0.4100      0.7400
                         0.0200     0.2200   |   0.4200      0.7900
                         0.0300     0.2600   |   0.4400      0.8400
                         0.0800     0.3500   |   3.9400      0.9500
                         0.1800     0.4000   |   6.9400      1.0100
                         0.3200     0.4400   |  10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     2.167      1.33      41.21
   OUTFLOW: ID= 1 (  0501)     12.440     0.163      3.42      38.72
```

```
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.50
                    TIME SHIFT OF PEAK FLOW         (min)=125.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.3913

------------------------------------------------------------------------------
**************************************************
** SIMULATION:Run 06 - 100yr 4hr 10min Chicago **
**************************************************
--------------------
| RESERVOIR(  0501)|     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    |  0.3400      0.4900
                         0.0000     0.0300    |  0.3500      0.5400
                         0.0100     0.0700    |  0.3700      0.5900
                         0.0200     0.1000    |  0.3800      0.6400
                         0.0200     0.1800    |  0.4100      0.7400
                         0.0200     0.2200    |  0.4200      0.7900
                         0.0300     0.2600    |  0.4400      0.8400
                         0.0800     0.3500    |  3.9400      0.9500
                         0.1800     0.4000    |  6.9400      1.0100
                         0.3200     0.4400    | 10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)    12.440     2.717      1.33      46.50
   OUTFLOW: ID= 1 (  0501)    12.440     0.227      2.83      44.01

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.35
                    TIME SHIFT OF PEAK FLOW         (min)= 90.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.4134

------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 07 - 2yr 12hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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    |  0.3400      0.4900
                         0.0000     0.0300    |  0.3500      0.5400
                         0.0100     0.0700    |  0.3700      0.5900
                         0.0200     0.1000    |  0.3800      0.6400
                         0.0200     0.1800    |  0.4100      0.7400
                         0.0200     0.2200    |  0.4200      0.7900
                         0.0300     0.2600    |  0.4400      0.8400
                         0.0800     0.3500    |  3.9400      0.9500
                         0.1800     0.4000    |  6.9400      1.0100
                         0.3200     0.4400    | 10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)    12.440     0.911      6.25      25.52
   OUTFLOW: ID= 1 (  0501)    12.440     0.030     10.50      23.02

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.25
                    TIME SHIFT OF PEAK FLOW         (min)=255.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.2584

------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 08 - 5yr 12hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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    |  0.3400      0.4900
                         0.0000     0.0300    |  0.3500      0.5400
                         0.0100     0.0700    |  0.3700      0.5900
                         0.0200     0.1000    |  0.3800      0.6400
                         0.0200     0.1800    |  0.4100      0.7400
                         0.0200     0.2200    |  0.4200      0.7900
                         0.0300     0.2600    |  0.4400      0.8400
                         0.0800     0.3500    |  3.9400      0.9500
                         0.1800     0.4000    |  6.9400      1.0100
                         0.3200     0.4400    | 10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)    12.440     1.418      6.25      36.93
   OUTFLOW: ID= 1 (  0501)    12.440     0.075      8.42      34.44

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  5.27
                    TIME SHIFT OF PEAK FLOW         (min)=130.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.3405

------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 09 - 10yr 12hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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    |  0.3400      0.4900
                         0.0000     0.0300    |  0.3500      0.5400
                         0.0100     0.0700    |  0.3700      0.5900
                         0.0200     0.1000    |  0.3800      0.6400
                         0.0200     0.1800    |  0.4100      0.7400
                         0.0200     0.2200    |  0.4200      0.7900
                         0.0300     0.2600    |  0.4400      0.8400
                         0.0800     0.3500    |  3.9400      0.9500
                         0.1800     0.4000    |  6.9400      1.0100
                         0.3200     0.4400    | 10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)    12.440     1.733      6.25      44.69
   OUTFLOW: ID= 1 (  0501)    12.440     0.148      7.33      42.20

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.53
                    TIME SHIFT OF PEAK FLOW         (min)= 65.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.3839

------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 10 - 25yr 12hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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    |  0.3400      0.4900
                         0.0000     0.0300    |  0.3500      0.5400
                         0.0100     0.0700    |  0.3700      0.5900
                         0.0200     0.1000    |  0.3800      0.6400
                         0.0200     0.1800    |  0.4100      0.7400
                         0.0200     0.2200    |  0.4200      0.7900
                         0.0300     0.2600    |  0.4400      0.8400
                         0.0800     0.3500    |  3.9400      0.9500
                         0.1800     0.4000    |  6.9400      1.0100
                         0.3200     0.4400    | 10.7200      1.0600

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)    12.440     2.158      6.25      54.96
   OUTFLOW: ID= 1 (  0501)    12.440     0.313      6.92      52.47

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.49
                    TIME SHIFT OF PEAK FLOW         (min)= 40.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.4380

------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 11 - 50yr 12hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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    |  0.3400      0.4900
                         0.0000     0.0300    |  0.3500      0.5400
                         0.0100     0.0700    |  0.3700      0.5900
                         0.0200     0.1000    |  0.3800      0.6400
                         0.0200     0.1800    |  0.4100      0.7400
                         0.0200     0.2200    |  0.4200      0.7900
                         0.0300     0.2600    |  0.4400      0.8400
                         0.0800     0.3500    |  3.9400      0.9500
                         0.1800     0.4000    |  6.9400      1.0100
```

```
                        0.3200     0.4400   |  10.7200      1.0600

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     2.482      6.25      62.70
   OUTFLOW: ID= 1 (  0501)     12.440     0.340      6.92      60.21

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.68
                  TIME SHIFT OF PEAK FLOW         (min)= 40.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.4893

--------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 12 - 100yr 12hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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   |  0.3400      0.4900
                         0.0000     0.0300   |  0.3500      0.5400
                         0.0100     0.0700   |  0.3700      0.5900
                         0.0200     0.1000   |  0.3800      0.6400
                         0.0200     0.1800   |  0.4100      0.7400
                         0.0200     0.2200   |  0.4200      0.7900
                         0.0300     0.2600   |  0.4400      0.8400
                         0.0800     0.3500   |  3.9400      0.9500
                         0.1800     0.4000   |  6.9400      1.0100
                         0.3200     0.4400   | 10.7200      1.0600

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     3.028      6.25      70.60
   OUTFLOW: ID= 1 (  0501)     12.440     0.355      6.92      68.10

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 11.72
                  TIME SHIFT OF PEAK FLOW         (min)= 40.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.5521

--------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 13 - 2yr 24hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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   |  0.3400      0.4900
                         0.0000     0.0300   |  0.3500      0.5400
                         0.0100     0.0700   |  0.3700      0.5900
                         0.0200     0.1000   |  0.3800      0.6400
                         0.0200     0.1800   |  0.4100      0.7400
                         0.0200     0.2200   |  0.4200      0.7900
                         0.0300     0.2600   |  0.4400      0.8400
                         0.0800     0.3500   |  3.9400      0.9500
                         0.1800     0.4000   |  6.9400      1.0100
                         0.3200     0.4400   | 10.7200      1.0600

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     1.139     12.25      33.37
   OUTFLOW: ID= 1 (  0501)     12.440     0.044     14.67      30.87

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.90
                  TIME SHIFT OF PEAK FLOW         (min)=145.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.2860

--------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 14 - 5yr 24hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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   |  0.3400      0.4900
                         0.0000     0.0300   |  0.3500      0.5400
                         0.0100     0.0700   |  0.3700      0.5900
                         0.0200     0.1000   |  0.3800      0.6400
                         0.0200     0.1800   |  0.4100      0.7400
                         0.0200     0.2200   |  0.4200      0.7900
                         0.0300     0.2600   |  0.4400      0.8400
                         0.0800     0.3500   |  3.9400      0.9500
                         0.1800     0.4000   |  6.9400      1.0100
                         0.3200     0.4400   | 10.7200      1.0600

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     1.676     12.25      48.19
   OUTFLOW: ID= 1 (  0501)     12.440     0.130     13.42      45.70

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.75
                  TIME SHIFT OF PEAK FLOW         (min)= 70.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.3750

--------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 15 - 10yr 24hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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   |  0.3400      0.4900
                         0.0000     0.0300   |  0.3500      0.5400
                         0.0100     0.0700   |  0.3700      0.5900
                         0.0200     0.1000   |  0.3800      0.6400
                         0.0200     0.1800   |  0.4100      0.7400
                         0.0200     0.2200   |  0.4200      0.7900
                         0.0300     0.2600   |  0.4400      0.8400
                         0.0800     0.3500   |  3.9400      0.9500
                         0.1800     0.4000   |  6.9400      1.0100
                         0.3200     0.4400   | 10.7200      1.0600

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     2.048     12.25      58.22
   OUTFLOW: ID= 1 (  0501)     12.440     0.259     13.00      55.73

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 12.65
                  TIME SHIFT OF PEAK FLOW         (min)= 45.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.4228

--------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 16 - 25yr 24hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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   |  0.3400      0.4900
                         0.0000     0.0300   |  0.3500      0.5400
                         0.0100     0.0700   |  0.3700      0.5900
                         0.0200     0.1000   |  0.3800      0.6400
                         0.0200     0.1800   |  0.4100      0.7400
                         0.0200     0.2200   |  0.4200      0.7900
                         0.0300     0.2600   |  0.4400      0.8400
                         0.0800     0.3500   |  3.9400      0.9500
                         0.1800     0.4000   |  6.9400      1.0100
                         0.3200     0.4400   | 10.7200      1.0600

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440     2.546     12.25      71.42
   OUTFLOW: ID= 1 (  0501)     12.440     0.342     12.92      68.93

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.41
                  TIME SHIFT OF PEAK FLOW         (min)= 40.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.4977

--------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 17 - 50yr 24hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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   |  0.3400      0.4900
                         0.0000     0.0300   |  0.3500      0.5400
                         0.0100     0.0700   |  0.3700      0.5900
```

```
                        0.0200     0.1000   |   0.3800      0.6400
                        0.0200     0.1800   |   0.4100      0.7400
                        0.0200     0.2200   |   0.4200      0.7900
                        0.0300     0.2600   |   0.4400      0.8400
                        0.0800     0.3500   |   3.9400      0.9500
                        0.1800     0.4000   |   6.9400      1.0100
                        0.3200     0.4400   |  10.7200      1.0600

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440      3.168     12.25      81.34
   OUTFLOW: ID= 1 (  0501)     12.440      0.362     12.92      78.84

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 11.43
                   TIME SHIFT OF PEAK FLOW         (min)= 40.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.5704

--------------------------------------------------------------------------------
************************************************************
** SIMULATION:Run 18 - 100yr 24hr 15min SCS Type II (MTO) **
************************************************************
--------------------
| RESERVOIR(  0501)|     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   |   0.3400      0.4900
                        0.0000     0.0300   |   0.3500      0.5400
                        0.0100     0.0700   |   0.3700      0.5900
                        0.0200     0.1000   |   0.3800      0.6400
                        0.0200     0.1800   |   0.4100      0.7400
                        0.0200     0.2200   |   0.4200      0.7900
                        0.0300     0.2600   |   0.4400      0.8400
                        0.0800     0.3500   |   3.9400      0.9500
                        0.1800     0.4000   |   6.9400      1.0100
                        0.3200     0.4400   |  10.7200      1.0600

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)     12.440      3.595     12.25      91.43
   OUTFLOW: ID= 1 (  0501)     12.440      0.381     12.92      88.93

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 10.60
                   TIME SHIFT OF PEAK FLOW         (min)= 40.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.6442

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

```
*********************************
** SIMULATION:Hazel            **
*********************************
--------------------
| RESERVOIR(  0501)|     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   |   0.3400      0.4900
                          0.0000     0.0300   |   0.3500      0.5400
                          0.0100     0.0700   |   0.3700      0.5900
                          0.0200     0.1000   |   0.3800      0.6400
                          0.0200     0.1800   |   0.4100      0.7400
                          0.0200     0.2200   |   0.4200      0.7900
                          0.0300     0.2600   |   0.4400      0.8400
                          0.0800     0.3500   |   3.9400      0.9500
                          0.1800     0.4000   |   6.9400      1.0100
                          0.3200     0.4400   |  10.7200      1.0600

                                 AREA     QPEAK     TPEAK        R.V.
                                 (ha)     (cms)     (hrs)        (mm)
   INFLOW : ID= 2 (  0201)     12.440      1.765     10.00      189.43
   OUTFLOW: ID= 1 (  0501)     12.440      1.718     10.00      186.94

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 97.33
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.8809

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

Appendix E:
Water Quality Calculations

Water Quality Requirements

Project Details

Maple Bridge Subdivision, Phase 2	422492

Prepared By

LJC	10/10/2024

Water Quality Sizing Criteria

Methodology & Data Source	Volumetric water quality criteria as presented in Table 3.2 in Ministry of Environment, Conservation and Parks (MECP) Stormwater Management Planning & Design Manual (SWMPDM) March 2003.

Contributing Catchments

Catchment ID	Area (ha)	Impervious (%)
201	12.44	71%
Total	**12.44**	**71%**

Treatment Method Details

SWM Facility Type	Wet Pond
Target Treatment Level	Enhanced Level
Treatment Percentage	80%

Treatment

Water Quality Storage Requirement	2,194	m^3
Extended Detention Volume (40 m^3)	498	m^3
Permanent Pool Volume Required	1,696	m^3
25 mm Storm Runoff Depth	9	mm
25 mm Storm Runoff Volume	1,128	m^3
Required Extended Detention Volume	1,128	m^3
Erosion Control Storage Required	2,239	m^3

Permanent Pool Volume Provided	3,940	**Provided > Required**	
Extended Detention Storage Provided	3,068	**Provided > Required**	
Active Storage Provided	10,646	**Provided > Required**	

TATHAM ENGINEERING

PROJECT	Maple Bridge Subdivision, Phase 2	FILE	422492
		DATE	10/10/2024
SUBJECT	Water Quality - Treatment Train Calculations	NAME	LJC
		PAGE	1 OF 1

Water Quality Treatment Train Calculations

Catchment 201

Total Drainage Area Conveyed to Controls: 12.44 ha

Total Imperviousness Conveyed to Controls: 71%

Device		Target Total Suspended Solids (TSS) Removal
Primary Treatment	Wet Pond	80%

Note: TSS removal efficiencies obtained from the Sustainable Technologies Evaluation Program (STEP) Low Impact Development Treatment Tool.

TSS Removal Provided By Controls: **80%**

Catchment 202

Due to grading constraints, Catchment 202 drains uncontrolled to Outlet #1. In addition, the catchment consists of clean landscape area. Therefore, controls are not required.

Catchment 203

Due to grading constraints, Catchment 203 drains uncontrolled to Outlet #1. Best efforts were made to mimize the post-development flows discharging to the outlet and therefore minimize the discharge of TSS from this catchment.

Appendix F:
Soakaway Pit Design

TATHAM ENGINEERING

PROJECT	Maple Bridge Subdivision, Phase 2	FILE	422492
		DATE	4/4/2024
SUBJECT	Soakaway Pit Sizing	NAME	LJC/JG
		PAGE	1 OF 1

SINGLE FAMILY DWELLINGS (36′ AND 46′ CLASSIC)

Soakaway Pit Length	3.2	m
Soakaway Pit Width	2.0	m
Pipe Diameter	0.15	m
Clearstone Height	1.2	m
Clearstone Void Ratio	0.4	
Pipe Storage Volume	0.06	m^3
Clearstone Storage Volume	3.05	m^3
Total Storage Volume	3.11	m^3
Total Site Impervious Area	8.20	ha
Number of Soakaway Pits	38	
Total Storage Volume	**118**	**m^3**
Equivalent Storm Captured	**1.4**	**mm**

TOWNHOUSES

Soakaway Pit Length	1.3	m
Soakaway Pit Width	2.0	m
Pipe Diameter	0.15	m
Clearstone Height	1.2	m
Clearstone Void Ratio	0.4	
Pipe Storage Volume	0.02	m^3
Clearstone Storage Volume	1.24	m^3
Total Storage Volume	1.26	m^3
Total Site Impervious Area	8.20	ha
Number of Soakaway Pits	61	
Total Storage Volume	**77**	**m^3**
Equivalent Storm Captured	**0.9**	**mm**

Total Storage Volume	**195**	**m^3**
Total Equivalent Storm Captured	**2.4**	**mm**

PROJECT	Maple Bridge Subdivision, Phase 2	FILE	422492
		DATE	3/6/2025
SUBJECT	Drawdown Time - Infiltration Galleries	NAME	LJC
		PAGE	1 OF 1

Calculations completed in accordance with:

Infiltration: Sizing and modeling: LID SWM Planning and Design Guide. (2021, December 10). Sustainable Technologies Evaluation Program. Retrieved October 11, 2024 from: *https://wiki.sustainabletechnologies.ca/index.php?title=Infiltration:_Sizing_and_modeling&oldid=12158*

Infiltration Sizing when practice is fixed or constrained (1D Drainage)

Ratio of Catchment Impervious Area to Practice Permeable Area

$$R = \frac{A_i}{A_p}$$

Where:

A_i	=	Catchment Impervious Area	=	0.77 ha
A_p	=	Area of Practice (m^2)	=	402 m^2

R = 19.2

Drawdown Time Within Practice Permeable Area

$$d_r = \frac{f' \times t}{n}$$

Where:

d_r: reservoir depth (m)

f′: Design Infiltration Rate (per Secction 4.2.3 of GHD's Hydrogeological Assessment Addendum, 2025

n: Porosity of Storage Material

Composite Porosity

Infiltration Chamber d_r: 1.20 m (clearstone media)

n: 40%

Drawdown Time

d_r: 1.20 m

f′: 16 mm/hr

n: 40.0%

t = 30 hours

Total Drawdown Time: 30 hours

1:3,500

0 35 70 105

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

Mason Homes (Uxbridge) Limited
7309 Centre Road, Uxbridge, Ontario
Municipality of Durham

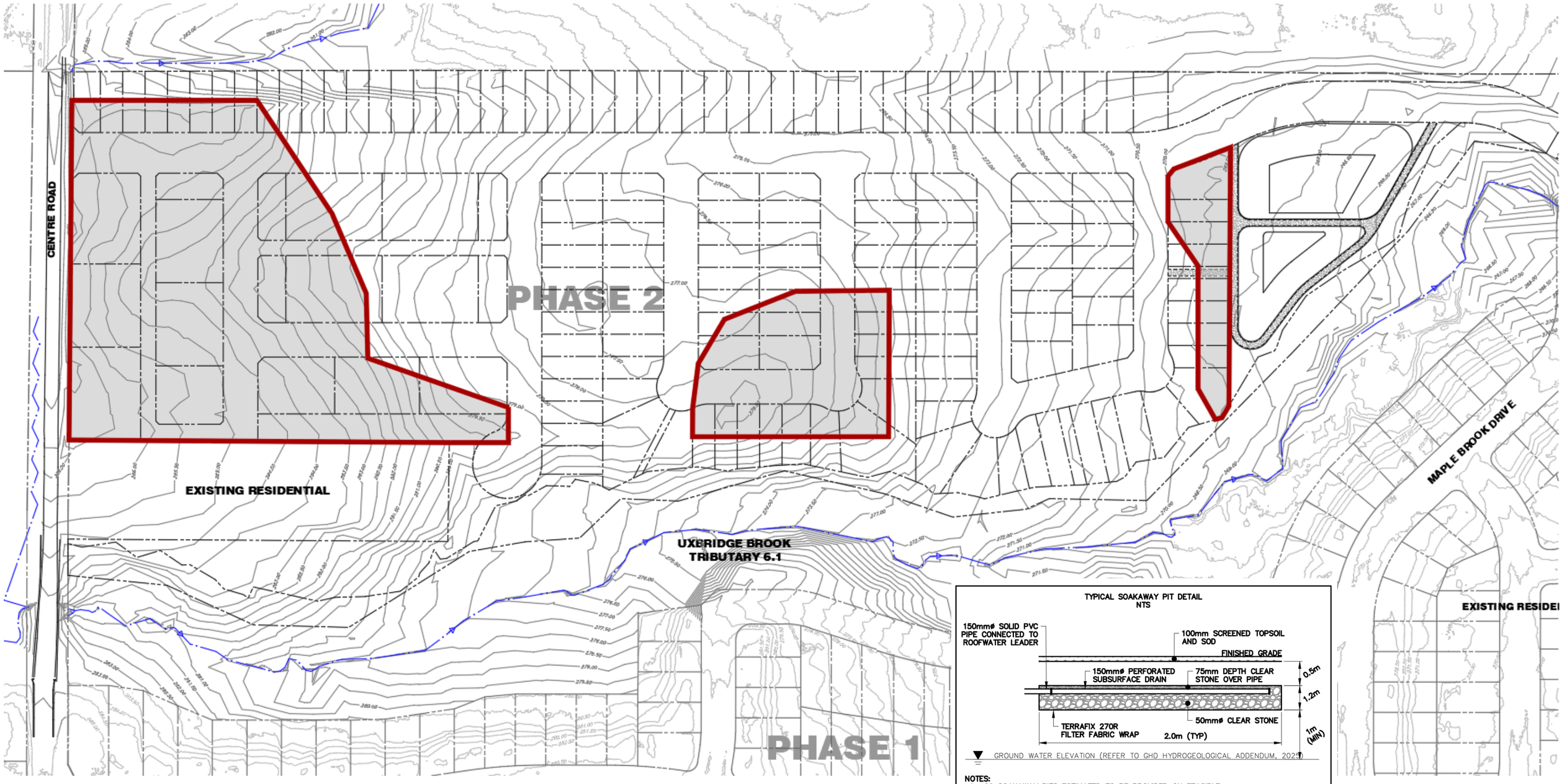
Hydrogeological Assessment Update

Groundwater Elevations

Project No. 12641133
Revision No.
Date Jan 31, 2025

Figure 5

\GIS\PROJECTS\12641000s\12641133\GIS\Maps\Deliverables\12641133_202412_GIS008_GW_Elevation.aprx
Print date: 31 Jan 2025 - 14:57



NOTE: DRAWING NOT TO SCALE

MAPLE BRIDGE PHASE 2 – PRELIMINARY STORMWATER MANAGEMENT REPORT

CONCEPTUAL SOAKAWAY PIT LOCATIONS

LOCATIONS AND DETAILS AS PER THE HYDROGEOLOGICAL ASSESSMENT ADDENDUM PREPARED BY GHD (2025). DETAILS WILL BE CONFIRMED AT DETAILED DESIGN.

Appendix G:
Phosphorus Balance

Loading Summary TP | Maple Bridge Subdivision, Phase 2 - Existing Conditions

Catchment 1	-0.656 %	0.014 m^3/s	5,857.14 m^3	457 m^3
			0.224 mg/l	0.225 mg/l
			1.312 kg	0.103 kg
Catchment 2	0.043 %	0.052 m^3/s	122,244.18 m^3	9,364 m^3
			0.229 mg/l	0.229 mg/l
			27.984 kg	2.143 kg
Total	**92.334 %**	**0.066 m^3/s**	**128,101.32 m^3**	**9,821 m^3**
			0.229 mg/l	**0.229 mg/l**
			29.296 kg	**2.246 kg**

TP - Catchment 1

Catchment 100	0 %	0.01 m^3/s	5,857.14 m^3 0.224 mg/l 1.312 kg	460 m^3 0.224 mg/l 0.103 kg
Outlet #2	0 %	0.014 m^3/s	457 m^3 0.225 mg/l 0.103 kg	457 m^3 0.225 mg/l 0.103 kg

- TP - Catchment 2

Name	LID Type	Peak Outflow	Incoming Total Flow (m^3) Concentration (mg/l) Total Load (kg)	Outgoing Total Flow (m^3) Concentration (mg/l) Total Load (kg)
Catchment 101	0 %	0.05 m^3/s	122,244.18 m^3 0.229 mg/l 27.984 kg	9.360 m^3 0.229 mg/l 2.143 kg
Outlet #1	0 %	0.052 m^3/s	9.364 m^3 0.229 mg/l 2.143 kg	9.364 m^3 0.229 mg/l 2.143 kg

Loading Summary TP | Maple Bridge Subdivision, Phase 2- Proposed Conditions

Catchment	Total Catchment TP Removal	Peak Outflow	Generated Total Flow (m^3) Average Concentration (mg/l) Total Load (kg)	Outgoing Total Flow (m^3) Average Concentration (mg/l) Total Load (kg)
Catchment 1	0.919 %	1.125 m^3/s	128,101.32 m^3 0.252 mg/l 32.241 kg	63,119 m^3 0.249 mg/l 15.74 kg
Total	**51.18 %**	**1.125 m^3/s**	**128,101.32 m^3** **0.252 mg/l** **32.241 kg**	**63,119 m^3** **0.249 mg/l** **15.74 kg**

Loading TP | Maple Bridge Subdivision, Phase 2- Proposed Conditions

TP - Catchment 1

Name	LID Type	Peak Outflow	Incoming Total Flow (m^3) Concentration (mg/l) Total Load (kg)	Outgoing Total Flow (m^3) Concentration (mg/l) Total Load (kg)
Catchment 203	0 %	0.04 m^3/s	4,062.21 m^3 0.278 mg/l 1.13 kg	1,780 m^3 0.278 mg/l 0.495 kg
Catchment 202	0 %	0.02 m^3/s	15,115.2 m^3 0.271 mg/l 4.089 kg	1,220 m^3 0.271 mg/l 0.33 kg
Catchment 201	0 %	1.07 m^3/s	108,923.91 m^3 0.248 mg/l 27.022 kg	60,120 m^3 0.248 mg/l 14.915 kg
Outlet #1	0 %	1.125 m^3/s	63,119 m^3 0.249 mg/l 15.74 kg	63,119 m^3 0.249 mg/l 15.74 kg

Loading Summary TP | Maple Bridge Subdivision, Phase 2 - Mitigation Measures

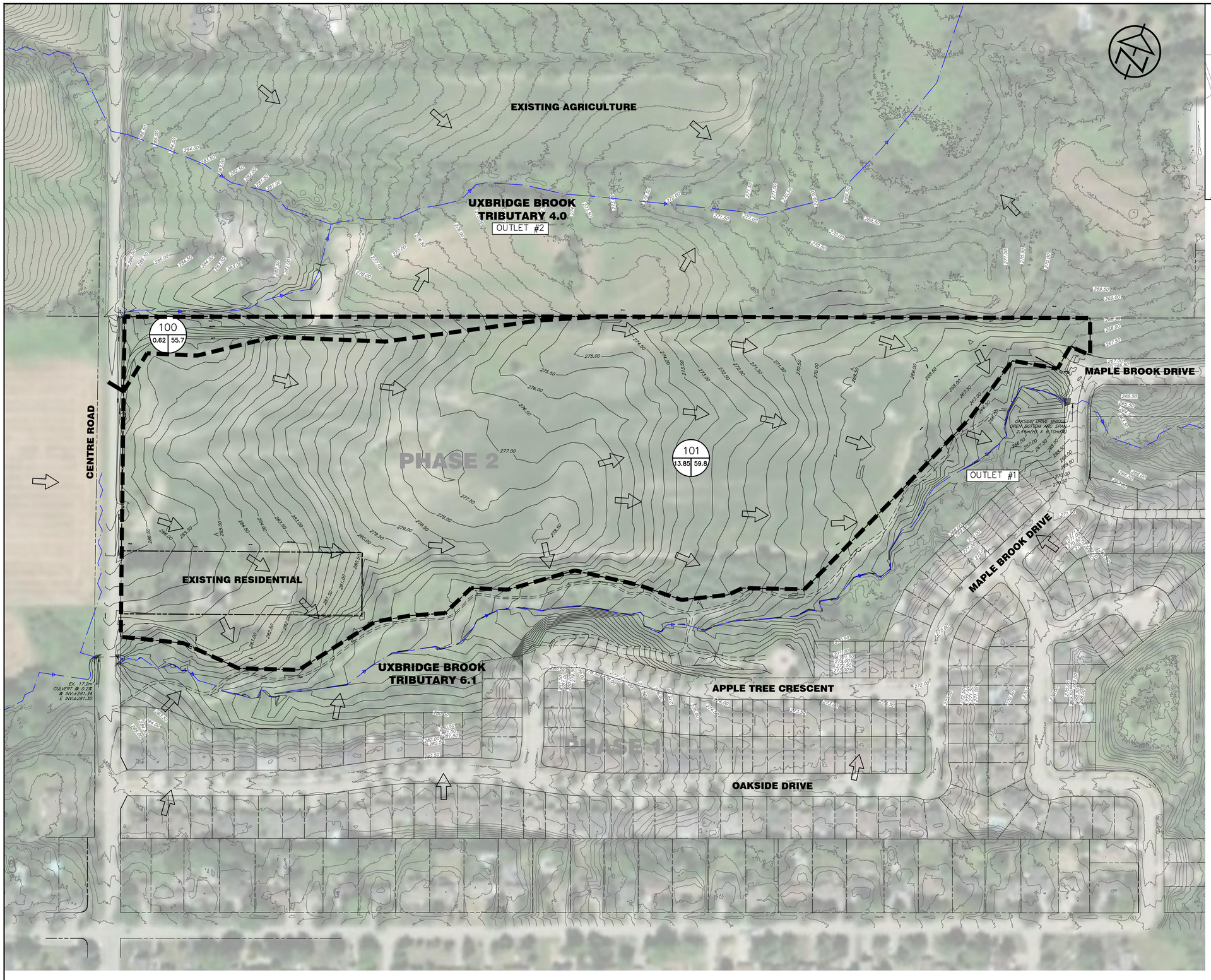
Catchment	Total Catchment TP Removal	Peak Outflow	Generated Total Flow (m^3) Average Concentration (mg/l) Total Load (kg)	Outgoing Total Flow (m^3) Average Concentration (mg/l) Total Load (kg)
Catchment 1	55.049 %	0.157 m^3/s	128,101.32 m^3 0.252 mg/l 32.247 kg	49,391 m^3 0.113 mg/l 5.589 kg
Total	**82.668 %**	**0.157 m^3/s**	**128,101.32 m^3** **0.252 mg/l** **32.247 kg**	**49,391 m^3** **0.113 mg/l** **5.589 kg**

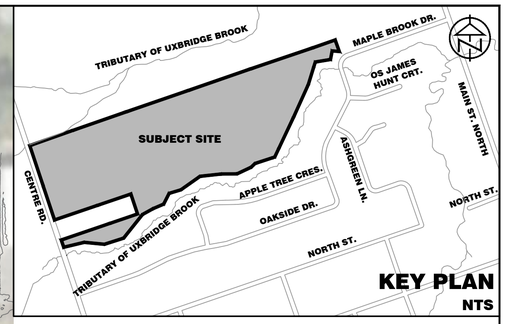
TP - Catchment 1

Name	LID Type	Peak Outflow	Incoming Total Flow (m^3) Concentration (mg/l) Total Load (kg)	Outgoing Total Flow (m^3) Concentration (mg/l) Total Load (kg)
Catchment 203	0 %	0.04 m^3/s	4,062.21 m^3 0.278 mg/l 1.13 kg	1,780 m^3 0.278 mg/l 0.495 kg
Catchment 202	0 %	0.02 m^3/s	15,115.2 m^3 0.271 mg/l 4.089 kg	1,220 m^3 0.271 mg/l 0.33 kg
Catchment 201	0 %	0.95 m^3/s	100,893.96 m^3 0.261 mg/l 26.306 kg	53,880 m^3 0.261 mg/l 14.048 kg

Soakaways	87 %	0 m^3/s	8,029.95 m^3 0.09 mg/l 0.723 kg	0 m^3 0.012 mg/l 0 kg
Proposed Wet Pond	63 %	0.955 m^3/s	53,900 m^3 0.261 mg/l 14.048 kg	53,900 m^3 0.096 mg/l 5.198 kg
Wet Pond to Outlet	0 %	0.097 m^3/s	49,400 m^3 0.096 mg/l 4.764 kg	49,400 m^3 0.096 mg/l 4.764 kg
Outlet #1	0 %	0.157 m^3/s	49,391 m^3 0.113 mg/l 5.589 kg	49,391 m^3 0.113 mg/l 5.589 kg

Drawings





LEGEND

- 285.00 — EXISTING CONTOURS (0.5m INTERVALS)
- 285.00 — LSRCA CONTOURS (5.0m INTERVALS)
- EXISTING WATERCOURSE AND FLOW DIRECTION
- DRAINAGE CATCHMENT BOUNDARY
- EXISTING OVERLAND FLOW DIRECTION
- 101 / 13.85 | 59.8 — DRAINAGE CATCHMENT ID / CURVE NUMBER
- DRAINAGE AREA (ha)

DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

DRAWING REFERENCES

TOPOGRAPHIC FEATURES, CONTOURS AND LEGAL BOUNDARIES SHOWN ON THIS PLAN BASED ON SURVEY COMPLETED BY IBW SURVEYORS LTD., COMPLETED ON SEPTEMBER 10, 2019 AND H.F.GRANDER Co. LTD., COMPLETED AND APRIL 6, 2023.

SUPPLEMENTARY SURVEY DATA GENERATED FROM LSRCA DIGITAL TERRAIN MODEL. REFER TO NATURAL HAZARD ASSESSMENT PREPARED BY TATHAM ENGINEERING LIMITED FOR DETAILS.

DRAFT PLAN INFORMATION SHOWN ON THIS PLAN BASED ON PLAN PROVIDED BY IPS, DATED MARCH 11, 2024.

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR DRAFT PLAN APPROVAL	APR. 17/24
2.	RE-ISSUED FOR DRAFT PLAN APPROVAL	AUG. 19/25

ENGINEER STAMP

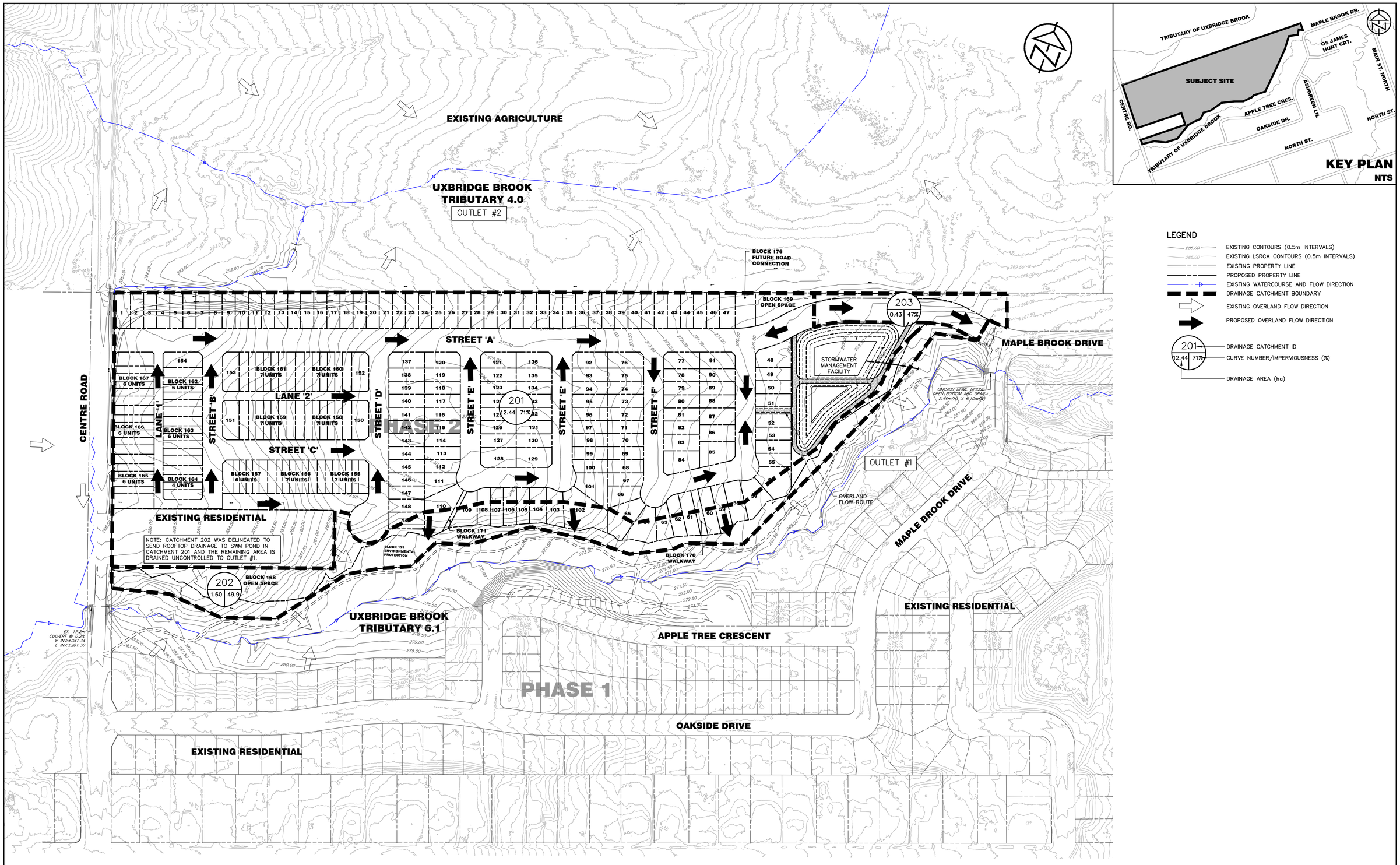
MAPLE BRIDGE RESIDENTIAL DEVELOPMENT - PHASE 2
TOWNSHIP OF UXBRIDGE
REGIONAL MUNICIPALITY OF DURHAM
MASON HOMES LIMITED

PRE-DEVELOPMENT DRAINAGE PLAN

TATHAM ENGINEERING

DESIGN: LJC	FILE: 422492	DWG:	DP-1
DRAWN: NB/LQ	DATE: OCT 2024		
CHECK: LC	SCALE: 1:1500		

Drawing Name: 422492-DP01.dwg, Plotted: Aug 18, 2025



LEGEND

- 285.00 — EXISTING CONTOURS (0.5m INTERVALS)
- 285.00 — EXISTING LSRCA CONTOURS (0.5m INTERVALS)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING WATERCOURSE AND FLOW DIRECTION
- DRAINAGE CATCHMENT BOUNDARY
- EXISTING OVERLAND FLOW DIRECTION
- PROPOSED OVERLAND FLOW DIRECTION
- 201 / 12.44 71% — DRAINAGE CATCHMENT ID / CURVE NUMBER/IMPERVIOUSNESS (%) / DRAINAGE AREA (ha)

DISCLAIMER AND COPYRIGHT

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ENGINEER STAMP

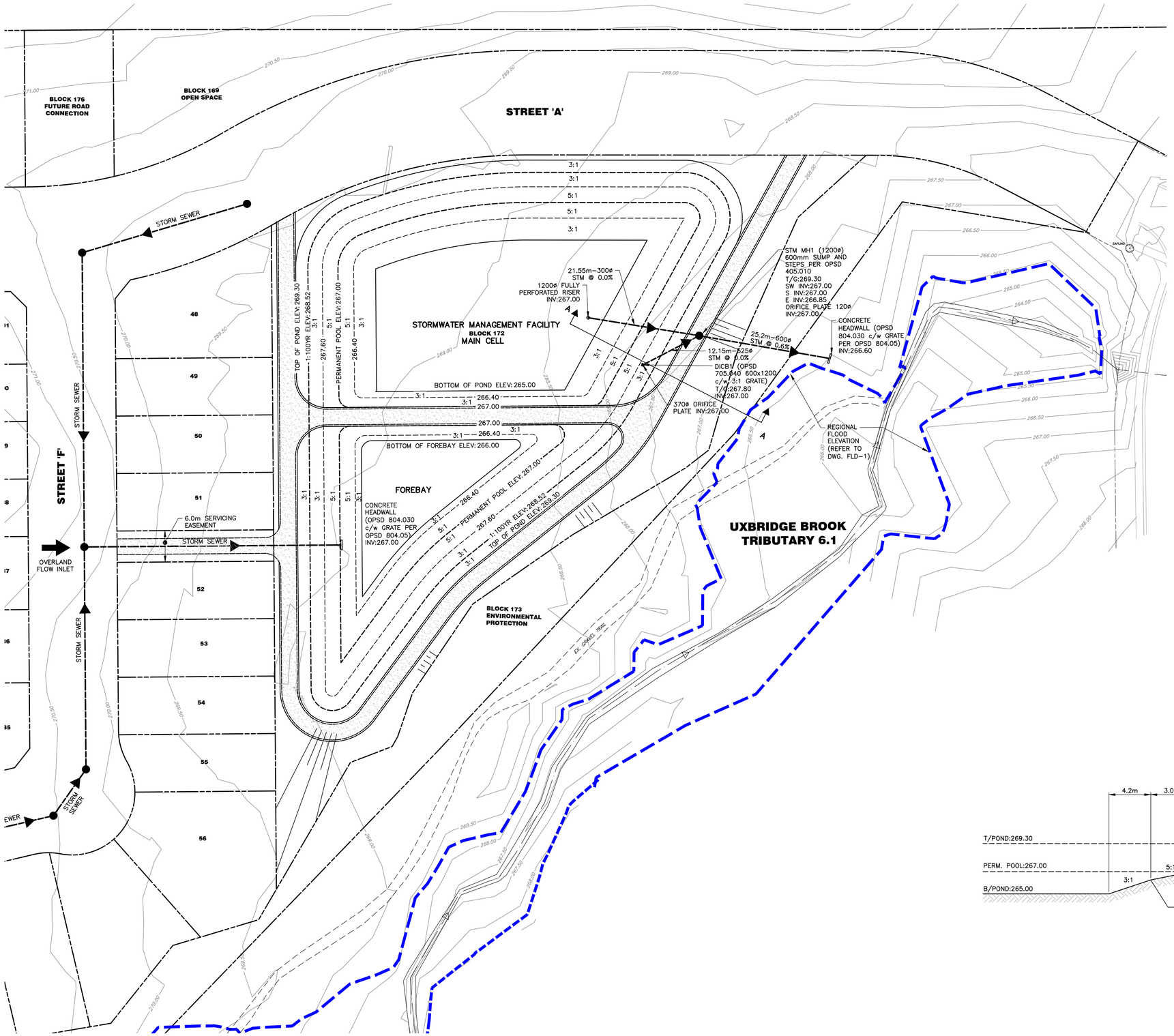
MAPLE BRIDGE RESIDENTIAL DEVELOPMENT - PHASE 2
TOWNSHIP OF UXBRIDGE
REGIONAL MUNICIPALITY OF DURHAM
MASON HOMES LIMITED

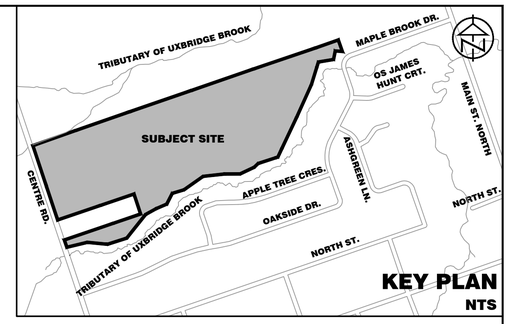
TATHAM ENGINEERING

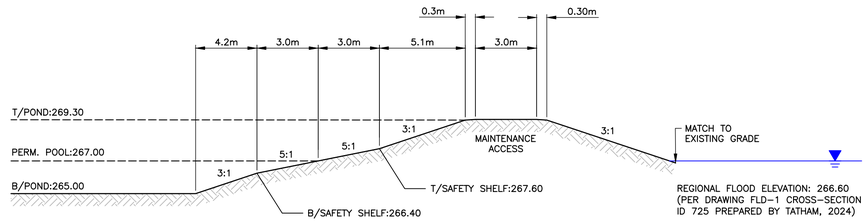
POST-DEVELOPMENT DRAINAGE PLAN

DESIGN: LJC	FILE: 422492	DWG:	
DRAWN: NB/LQ	DATE: OCT 2024	DP-2	
CHECK: LC	SCALE: 1:1500		

Drawing Name: 422492-DP02.dwg, Plotted: Aug 18, 2025







POND SECTION A–A'
N.T.S.

DRAWING REFERENCES

TOPOGRAPHIC FEATURES, CONTOURS AND LEGAL BOUNDARIES SHOWN ON THIS PLAN BASED ON SURVEY COMPLETED BY IBW SURVEYORS LTD., COMPLETED ON SEPTEMBER 10, 2019 AND H.F.GRANDER Co. LTD., COMPLETED AND APRIL 6, 2023.

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ENGINEER STAMP

MAPLE BRIDGE RESIDENTIAL DEVELOPMENT - PHASE 2
TOWNSHIP OF UXBRIDGE
REGIONAL MUNICIPALITY OF DURHAM
MASON HOMES LIMITED

STORMWATER MANAGEMENT FACILITY

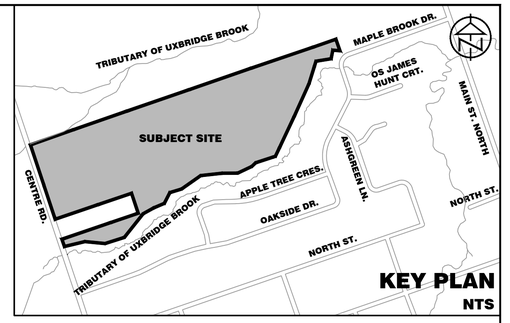
TATHAM ENGINEERING

DESIGN: LG/LJC	FILE: 422492	DWG: PND-1
DRAWN: LG	DATE: OCT 2024	
CHECK: LC	SCALE: 1:400	

Drawing Name: 422492-PND01.dwg, Plotted: Aug 18, 2025

LEGEND

- EXISTING CONTOUR
- EXISTING PROPERTY LINE
- REGIONAL FLOOD HAZARD LIMIT
- PROPOSED PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- TRIBUTARY OF UXBRIDGE BROOK
- SAN MH — EXISTING SANITARY MAINTENANCE HOLE
- STM MH — EXISTING STORM MAINTENANCE HOLE
- PROPOSED SANITARY MAINTENANCE HOLE
- PROPOSED STORM MAINTENANCE HOLE
- PROPOSED OVERLAND FLOW DIRECTION
- 275.08 — PROPOSED ELEVATION



KEY PLAN
NTS

UXBRIDGE BROOK TRIBUTARY 4.0

CENTRE ROAD

EXTERNAL 1.5m CONC. SIDEWALK

BUS PAD

PR. 300ø WATERMAIN

REAR TO FRONT DRAINAGE

STREET 'A'

BLOCK 176 FUTURE ROAD CONNECTION

BLOCK 169 OPEN SPACE

BLOCK 172 SWM POND REFER TO DWG. PND-1

STM INV: 266.50

STM INV: 267.00

STM INV: 268.21

CONNECT TO EX. 200ø WATERMAIN

REGIONAL FLOODLINE

OAKSIDE DRIVE

EXISTING RESIDENTIAL

BLOCK 167 6 UNITS

BLOCK 166 6 UNITS

BLOCK 165 6 UNITS

BLOCK 162 6 UNITS

BLOCK 163 6 UNITS

BLOCK 164 4 UNITS

LANE '1'

STREET 'B'

BLOCK 161 7 UNITS

BLOCK 160 7 UNITS

LANE '2'

BLOCK 159 7 UNITS

BLOCK 158 7 UNITS

STREET 'C'

BLOCK 157 6 UNITS

BLOCK 156 7 UNITS

BLOCK 155 7 UNITS

STREET 'D'

STREET 'E'

STREET 'E'

STREET 'F'

SPLIT LOT DRAINAGE

SPLIT LOT DRAINAGE

BLOCK 171 WALKWAY

BLOCK 170 WALKWAY

BLOCK 173 ENVIRONMENTAL PROTECTION

BLOCK 168 OPEN SPACE

UXBRIDGE BROOK TRIBUTARY 6.1

EX. CONC. BOX CULVERT

EX. STM HEADWALL

EX. TRAIL GRANULAR

APPLE TREE CRESCENT

CONNECT TO EX. 250ø SANITARY

EX. 250ø SAN STUB INV. 267.29

CONNECT TO EX. 300ø WATERMAIN

PHASE 2

PHASE 1

SAN INV: 282.99
STM INV: 285.79

SAN INV: 281.63
STM INV: 282.63

SAN INV: 274.67
STM INV: 275.67

SAN INV: 272.53
STM INV: 273.53

SAN INV: 271.11
STM INV: 272.11

SAN INV: 269.70
STM INV: 270.70

SAN INV: 268.57
STM INV: 269.57

SAN INV: 283.24

SAN INV: 282.13
STM INV: 283.13

SAN INV: 282.40

STM INV: 283.97

SAN INV: 283.99

SAN INV: 275.60
STM INV: 276.60

SAN INV: 276.05
STM INV: 278.00

SAN INV: 274.24
STM INV: 275.24

STM INV: 269.34

SAN INV: 268.07

SAN INV: 267.63

SAN INV: 267.50
CREEK INV: 270.03

DRAWING REFERENCES

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2.	RE-ISSUED FOR DRAFT PLAN APPROVAL	AUG. 19/25

ENGINEER STAMP

MAPLE BRIDGE RESIDENTIAL DEVELOPMENT - PHASE 2
TOWNSHIP OF UXBRIDGE
REGIONAL MUNICIPALITY OF DURHAM
MASON HOMES LIMITED

TATHAM ENGINEERING

CONCEPT DEVELOPMENT PLAN

DESIGN: LC/JLM	FILE: 422492	DWG: CDP-1
DRAWN: LQ/NB	DATE: JUNE 2023	
CHECK: NM	SCALE: 1:1,000	

Drawing Name: 422492-CDP01.dwg, Plotted: Aug 18, 2025