Stormwater Management Strategy

5483 & 5495 Princes Highway
Traralgon Victoria

Client
Stable Property Services

Issued
19/09/2025

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Client:	Stable Property Services
Issued:	19/09/2025
Version:	E
Prepared by:	[redacted]
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Project Number:	2101947

Surveying
Asset Recording
Civil Engineering
Infrastructure Engineering
Traffic & Transport Engineering
Environmental Consulting
Water Resource Engineering
Strata Certification (NSW)
Town Planning
Urban Design
Landscape Architecture
Project Management

Revision Table

REV	DESCRIPTION	DATE	AUTHORISED
A	Drainage Strategy	25/03/2022	[redacted]
B	Drainage Strategy Updated ISP	13/12/2022	[redacted]
C	Drainage Strategy Updated ISP (Commercial Lot)	18/05/2023	[redacted]
D	Drainage Strategy (Removed ISP)	20/03/2025	[redacted]
E	Drainage Strategy (Response to WGCMA)	19/09/2025	[redacted]

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1. INTRODUCTION

Beveridge Williams has been commissioned by Stable Property Services to prepare a Stormwater Management Strategy (SWMS) for a proposed residential development site located at 5483 & 5495 Princes Highway, Traralgon, Victoria. The total site area is approximately 58.13 ha, and it is proposed to develop the land into residential lots and a neighbourhood activity centre (commercial area). The development is also proposed to include open space and drainage reserves.

This SWMS is intended to provide sufficient evidence that the stormwater discharges from the proposed development can meet stormwater Best Practice Environmental Management Guidelines (BPEMG) and shall be to the satisfaction of West Gippsland Catchment Management Authority (WGCMA), Latrobe City Council, and other relevant authorities.

1.1. Site Overview

The subject site is located approximately 4.5 km southwest of the Traralgon town centre and is bounded by Princes Highway to the south, Bradford Drive to the southeast, Regan Road to the northeast, and existing rural residential developments to the west and north. Additionally, within the site boundary there is an existing dwelling, farm buildings, and dams as shown in **Figure 1**.

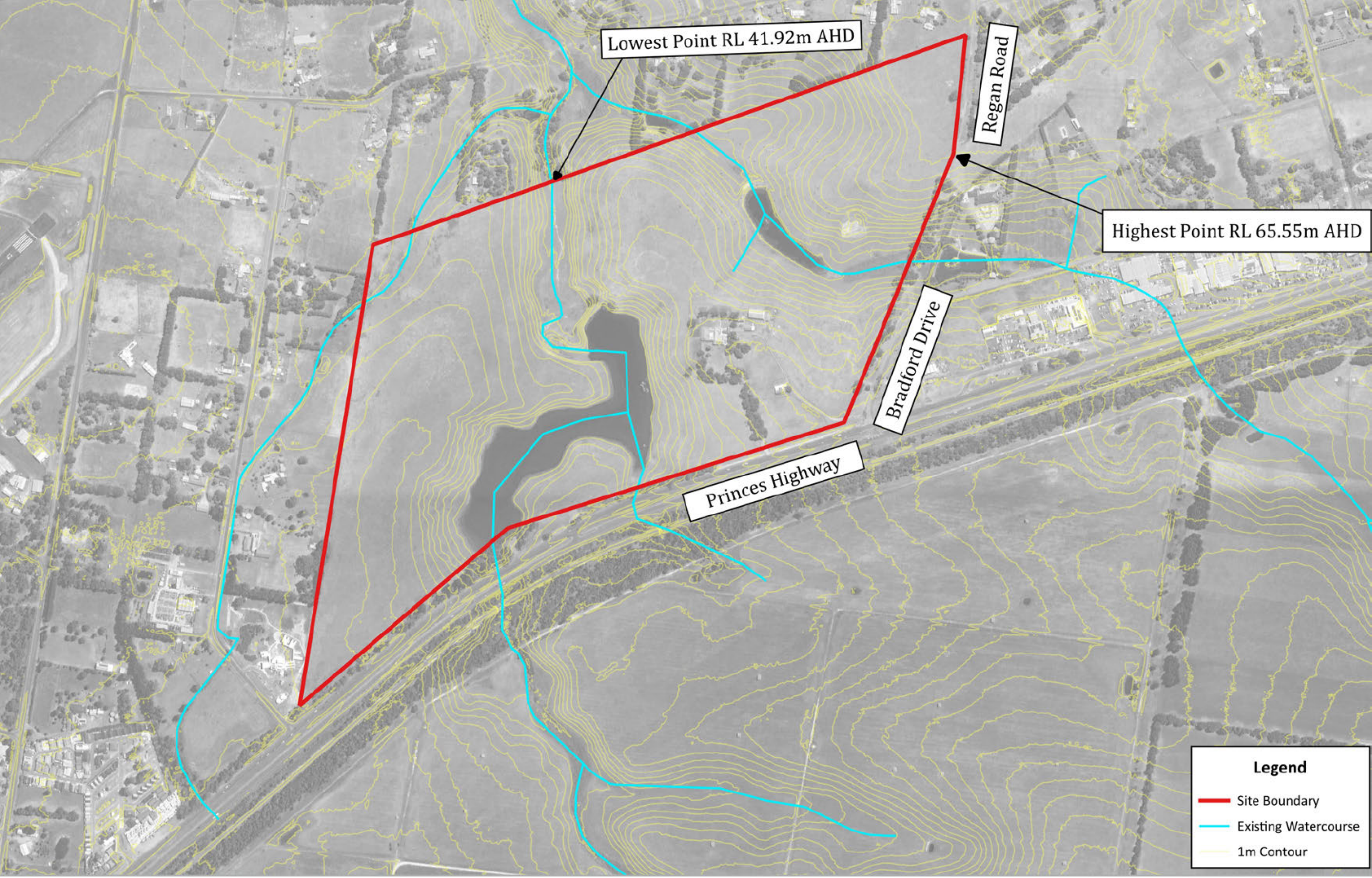
1.2. Project objectives

This study aims to provide a conceptual Stormwater Management Strategy (SWMS) to support the rezoning of land from Farming Zone to General Residential 3 Zone and Commercial 1 Zone.

The investigations undertaken for this report has identified on-site stormwater management solutions based upon a proposed development typology, and has identified a concept drainage strategy for the site which will:

- Ensure the management of stormwater quantity by attenuating developed peak 1% AEP runoff to existing levels if required
- Achieve best practice stormwater quality management targets
- Ensure the site has the capacity to provide the required stormwater quality and quantity management assets

The SWMS for the site is founded on best practice principles and achieves compliance with the requirements of the Water Act 1989, ARR 19, and Best-Practice Environmental Management Guidelines (CSIRO, 1999) and WSUD Engineering Procedures.



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Plan Name: Figure 1: Site and Topography Plan (Aerial)
Address: 5483 & 5495 Princes Highway, Traralgon, Victoria
Client: Stable Property Services

2. EXISTING CONDITIONS

2.1. Topography

The site generally slopes in two directions, from south to north and from east to north. A small portion of the area on the west slopes towards the north direction. The highest point of the site is located on the east (RL 65.55 m AHD) and the lowest point is located at the north (RL 41.92 m AHD). The average slope of the site is approximately 1 in 30.

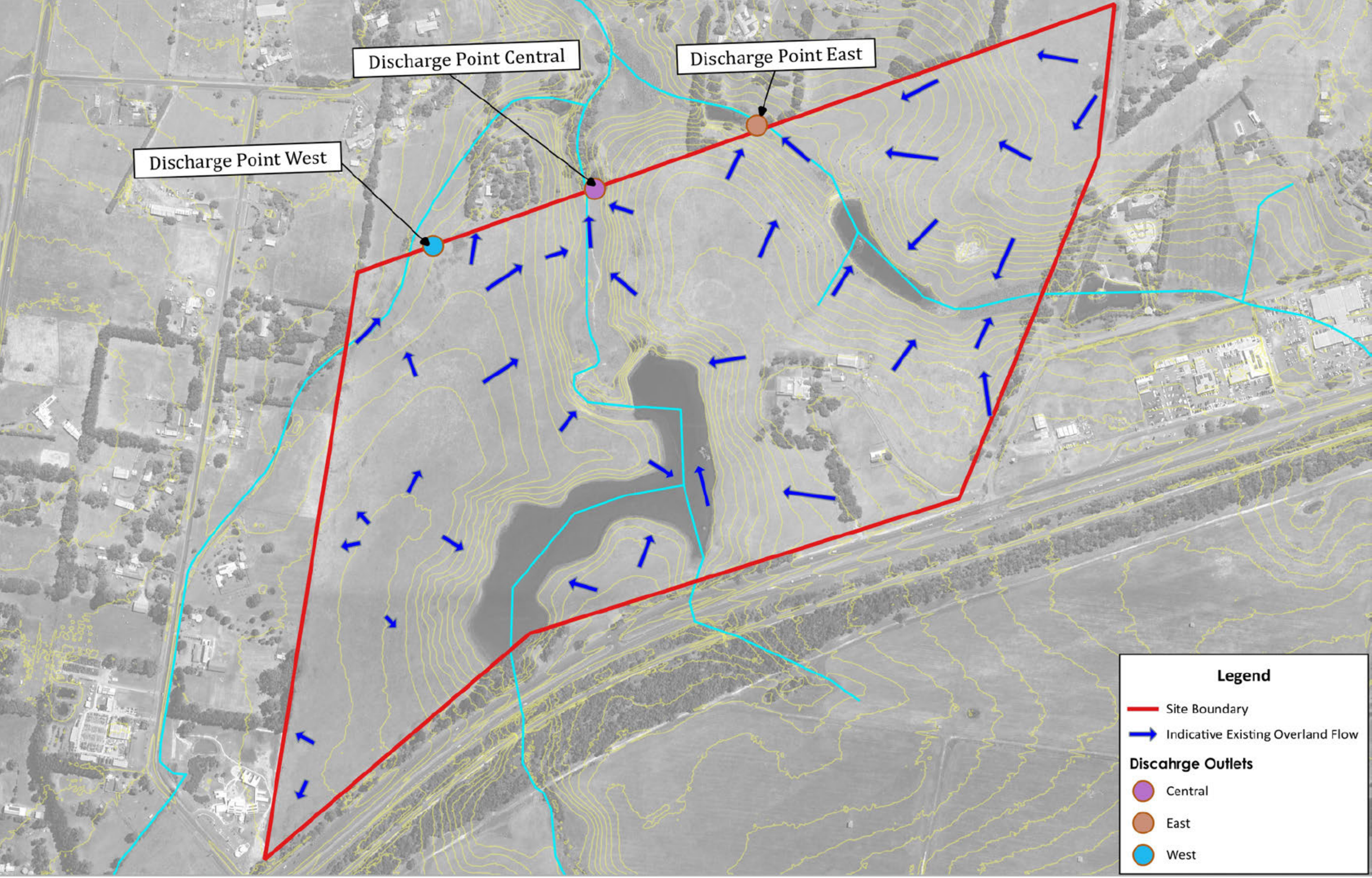
A plan showing the site topography is shown in **Figure 1.**

2.2. Surface Water and Drainage

In existing conditions, surface water flows from the high point on the east and west towards to north. These flow paths are shown in **Figure 2**.

Surface water from external catchment of approximately 1,732 ha from the south and east of the site currently drains into the site. Outside the southern boundary of the site, there is a designated farmland area while towards the eastern boundary there are mixed use land such as residential, vacant land and commercial areas.

The existing topography as shown in **Figure 2** shows the three existing discharge points in the proposed development site (west, central and east). There is an isolated catchment towards the west which naturally drains north. Flows from all discharge points follow an existing overland flow path downstream and converge into the existing Boyds Creek approximately 100 metres north of the site.



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Issued: 18.09.2025

Plan Name: Figure 2: Indicative Existing Overland Flow
Address: 5483 & 5495 Princes Highway, Traralgon, Victoria
Client: Stable Property Services

0 30 60 90 m

N

3. DESIGN INTENT

3.1. Proposed Development

The proposed subdivision includes a residential area of approximately 58.13 ha/520 residential lots, open space areas, and includes a commercial space of approximately 2.14 hectares. The internal road network for the proposed subdivision will be designed in accordance with their function and have a cross section that are of sufficient width to facilitate the provision of on street parking and pedestrian paths.

3.2. Design Criteria

This report is intended to investigate the feasibility of managing stormwater within the proposed development site. The proposed development will require further investigation after a development layout has been provided. Provided that the overall concept is not significantly altered, the development layout is unlikely to impact the water quantity and quality management strategy presented in this report. It shall be noted however, that the increase in impervious areas within the proposed development are likely to impact the outcomes and calculations undertaken in this report.

It is appropriate for details of the drainage concept design to be reviewed and optimised at the detailed design stage. This is typical practice for development, with detailed design occurring once a planning permit has been granted. Should there be any concerns regarding details of the proposed works, these can be addressed through appropriate conditions within a planning permit.

3.3. Proposed Stormwater Management Strategy

This stormwater management strategy has been proposed to follow the existing natural features of the site for both stormwater quantity and quality management. The aim of this SWMS is to assess surface water impact for downstream property owners and users as result of this development.

Stormwater quality management is proposed to be provided by using Rainwater tanks on individual lots, Gross Pollutant Traps (GPT), and Wetlands, while for stormwater quantity management, it has been determined that flow restriction do not need to be implemented due to the low difference in flow due to the proposed development.

It is a Victorian government requirement that the quality of stormwater runoff from proposed developments meets the Urban Stormwater Best Practice Environmental Management Guidelines (BPEMG) which are required under clause 56 of the Victorian Planning Provisions (VPP). The water quality treatment will be designed to meet Best Practice Environmental Management Guidelines (BPEMG).

4. STORMWATER QUANTITY MANAGEMENT

Details of the stormwater quantity management for the proposed site is discussed in the following sections.

4.1. Hydrology

The hydrologic analysis of the 1% AEP flows for the proposed development site was undertaken using RORB modelling to determine the pre-developed and post-developed flows. The external and pre-development catchment plan is presented in **Figures 3** and **4** respectively.

The internal catchments for the pre-development conditions have been delineated using survey data, contour information and aerial imaging. The internal post-development conditions catchments were delineated assuming a typical development with 70% impervious areas. The post-developed catchment is shown in **Figure 5**.

4.2. RORB Hydrologic Modelling

Hydrological analysis for the proposed development was undertaken using RORB Runoff Routing Program Modelling in accordance with the Australia Rainfall and Runoff 2019 guidelines to determine the design flows for the pre-developed and post-developed scenarios. Hydrological model inputs were obtained from the ARR Data Hub using coordinates Latitude -38.204 and Longitude 146.491.

4.2.1. Temporal Patterns

As the total area of the modelled catchment is approximately 17.9 km^2, temporal patterns were used to simulate the storm duration for input into the hydraulic model.

4.2.2. Areal Reduction Factors

The Areal Reduction Factors (ARFs) were calculated based on the Australian Rainfall and Runoff (ARR) (Book 2, Chapter 4.3) considering the catchment size of 17.9 km^2.

4.2.3. Rainfall Temporal Pattern

The design rainfall inputs were based on the ARR Data hub temporal patterns stratified by the rainfall events. The IFD depths for catchment centroid were obtained from the Bureau of Meteorology (BOM) website.

4.2.4. Loss Approach

The initial loss and continuous loss values were extracted from the ARR data hub for the catchment (22 mm and 43 mm/hr respectively) and used for the initial hydrologic model setup. The storm losses values that were adopted as final are given in **Table 1**.

4.2.5. Routing Parameters

The m value was left unchanged as the default of 0.8.

A k_c value was initially selected from the RORB Default Equation for the model setup. This value was then calibrated to the 1% AEP discharge obtained from the Regional Flood Frequency Estimation Model (RFFE). Values obtained from the RFFE were then compared to the Vic (MAR > 800 mm) Equation (7.6.15) ARR(BkVII), RORB Default Equation and Victoria Data (Pearse et al, 2002). Values obtained from each method are given in **Table 2.**

The k_c value adopted for the pre-developed scenario was obtained using the Victoria Data (Pearse et al, 2002) due to its closeness to the RFFE 1% AEP flows result (Refer to **Table 2**). The final k_c value adopted was then obtained by adjusting the initial and continuous loss obtained from the ARR Data Hub (see **Table 2**).

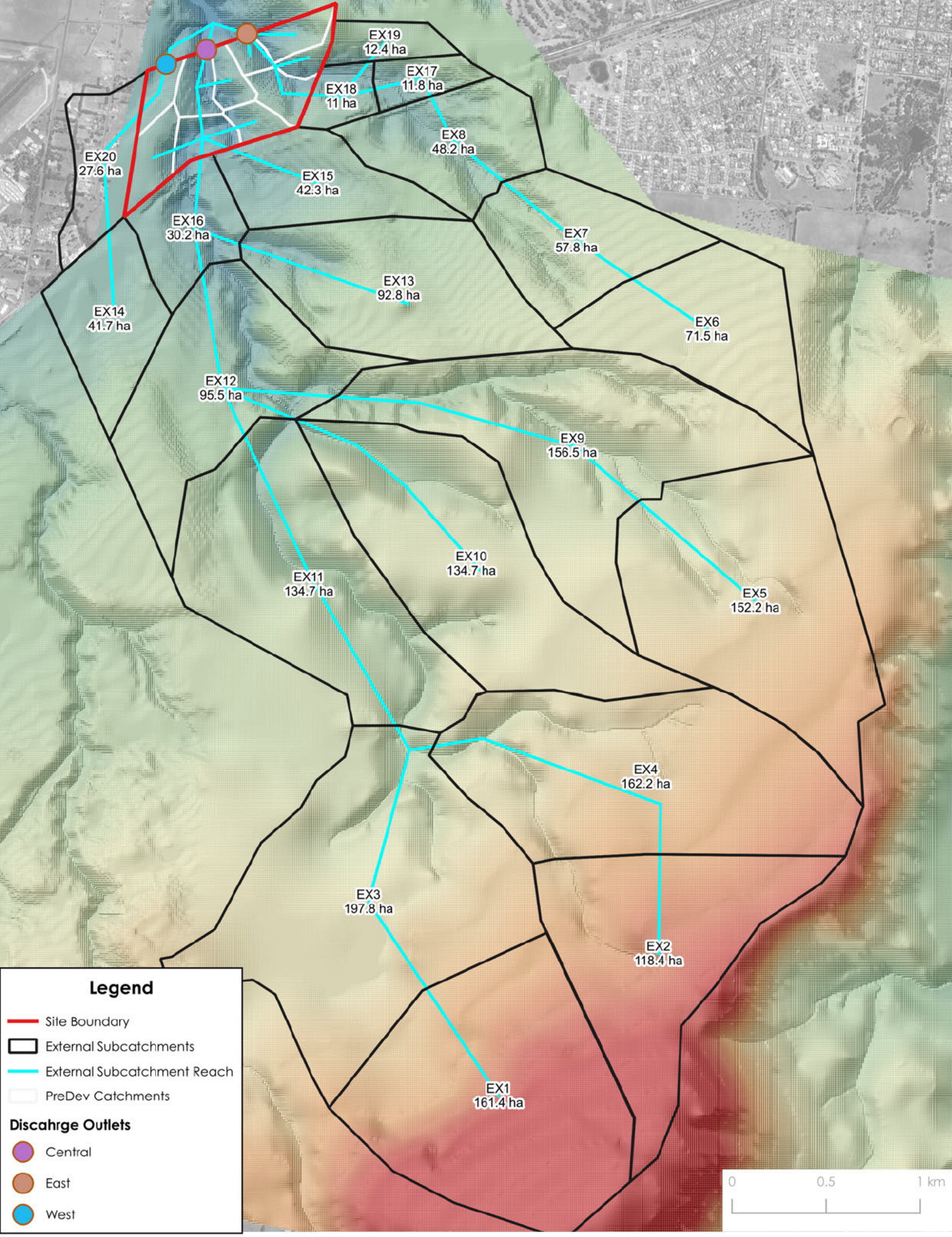
In the post-developed scenario, the k_c value was determined using the k_c to d_{av} ratio from the obtained pre-development parameters. Details of the RORB routing parameters used for the pre-development and post development scenarios are given in **Table 2**.

4.2.6. 75% Preburst Depths

Additionally, the 75th percentile pre-burst depths were obtained from the Data Hub for each available storm duration. The extract obtained from the Data Hub is shown in **Appendix A**. These values are then used to determine the loss factor for each storm duration. The loss factors were then calculated for each storm duration using the equation below.

$$Loss\ factor = \frac{Intial\ loss - 75\ ^{th}Percentile\ Pre\ Burst}{Intial\ loss}$$

Using the above equation, loss factors were obtained for the following storm durations. The loss factors are then included in the RORB modelling and the results are analysed to provide the flow results in **Appendix B**. The modelling includes associated external sub-catchments areas to the south and east of the site (Refer to **Figure 3**).



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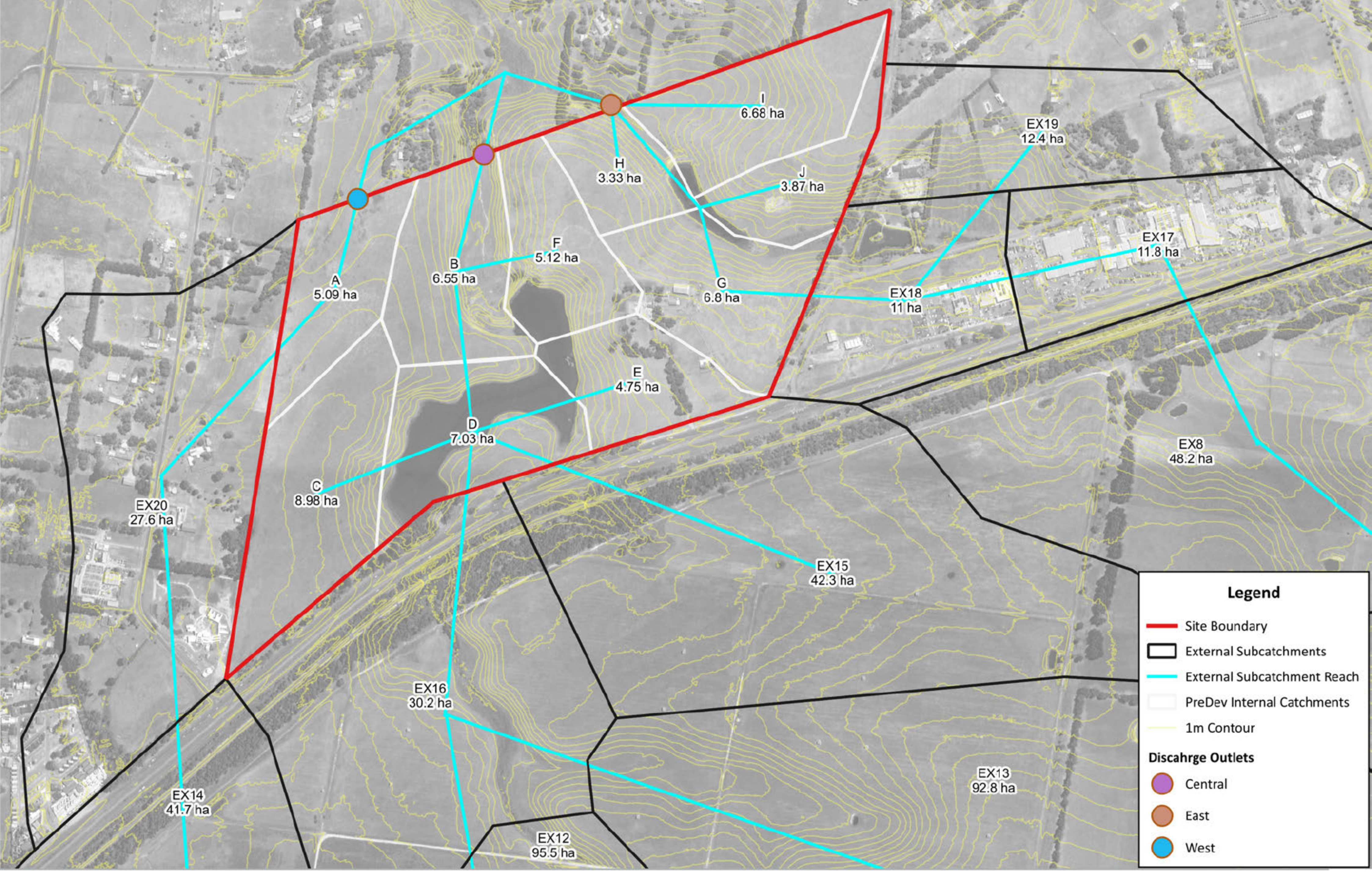
Plan Name: Figure 3: External Catchment Plan (Not to Scale)
Address: 5483 & 5495 Princes Highway, Traralgon, Victoria
Client: Stable Property Services



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Checked by:
Issued: 17.09.2025

Plan Name: Figure 4: Pre-Development Catchment Plan- Site Only (Not to Scale)
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0 100 200 m

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Issued: 17.09.2025

Plan Name: Figure 5: Post-Development Catchment Plan- subject site only (Not to Scale)
Address: 5483 & 5495 Princes Highway, Traralgon, Victoria
Client: Stable Property Services

0 30 60 90 m

N

Table 1: Hydrological Parameters and Considerations (RORB Model)

DESIGN PARAMETER	REQUIREMENT/ASSUMPTION	COMMENT
Software package	RORB	
Rainfall Estimation Procedures	ARR 2019	
IFD Data	ARR 2016 Design Rainfall	Bureau of Meteorology
Losses	Initial Losses (IL) = 22 mm Continuous Losses (CL) = 4.3 mm/h m = 0.8	Australian Rainfall & Runoff Data Hub-Results
Catchments	Existing Catchments mapped from 1m gridded ALS LiDAR and detailed survey. Proposed Catchments adjusted to account for post development earthworks grading	Geoscience Australia, Beveridge Williams Based on Civil Design
Catchment Area	17.9 km^2	Development site and External Catchments
RFFE Result	Discharge = 45 m^3/s	1% AEP Discharge
Kc Parameters for Pre-Developed Scenario	RORB Default Equation = 9.31 Vic (Mar > 800 mm) = 9.41 Victoria Data (Pearse et al, 2002) = 5.23	Corresponding Kc results of for each calibration method
1% AEP Pre-Development Calibration Methods	RORB Default Equation = 27.44 m^3/s Vic (Mar > 800 mm) = 27.15 m^3/s Victoria Data (Pearse et al, 2002) = 50.64 m^3/s	Pre-Developed flow calibration flow results for the different methods used.
Regional equation	$K_c = 1.25 \times d_{av}$	Victoria data [Pearse et al. (2002)]
Calibrated 1% AEP Pre-Development Flow	Victoria Data (Pearse et al, 2002) = 48.43 m^3/s	RORB Results
Calibrated Storm Losses	Initial Losses (IL) = 25 mm Continuous Losses (CL) = 5.7 mm/h	RORB Results
k_c Values	4.81 4.87 (Ex South). 1.94 (Ex East) and 0.87 (Site)	Pre-developed Post-developed
Average Distance (d_{av})	3.86 km 3.9 km	Pre-developed Post-developed
Design Events	1% AEP	Standard frequencies to and including the 1% AEP
Post-Developed Impervious %	70 %	

4.3. Modelled Events and Hydrology Results

4.3.1. 1% AEP Peak Flow Rates

The results of 1% AEP pre-development and post-development peak flows from the critical locations from the RORB modelling are shown in **Table 2**. Locations of external inflows and discharge points are considered as critical locations, as shown in **Figure 4**. The Ensemble method was used in RORB to determine the critical durations.

Details of the RORB results for the pre-development and post development scenarios are given in **Appendix C.**

Table 2: 1% AEP Flow Results at Critical Locations

Location	1% AEP Pre Dev	1% AEP Post Dev	1% AEP Difference
External South	35.04 m^3/s at 3 hr	-	-
Discharge Point West	4.24 m^3/s at 1 hr	5.54 m^3/s at 1 hr	+1.30
Discharge Point Central	34.78 m^3/s at 3 hr	38.53 m^3/s at 3 hr	+3.75
External East	9.19 m^3/s at 3 hr	-	-
Discharge Point East	9.70 m^3/s at 3 hr	10.95 m^3/s at 3 hr	+1.25
Overall Outlet	**44.39 m^3/s at 3 hr**	**49.36 m^3/s at 3 hr**	**+4.97**

Table 2 indicates flow attenuation differences pre and post development are minimal.

It is suggested that flow attenuation measures are not required for the development due to the difference between pre and post developed flows being only 4.97 m3/s out of 49.36 m3/s which is a difference of only 8%. In the overall scheme of events and based on today's climatic conditions, there is a case for flow attenuation to be disregarded.

4.4. Sub-surface Drainage (20% AEP)

The subsurface drainage will be sized to convey the 20% AEP storm event flows. These flows will be conveyed via the subsurface drainage network system and will be discharged from the site at two points of discharge as shown in **Figure 4**. The subsurface drainage network can be detailed in the later stages of design once a development plan has been provided.

4.5. Subject Site Overland Flow

Overland flows from the subject site will be conveyed through road networks and drainage reserves to the legal points of discharge. The internal roads for the development, and associated lot finished surface levels, will be designed to ensure that the Q_{gap} flows are conveyed through the site within the safe hydraulic capacity of road floodway.

5. STORMWATER QUALITY MANAGEMENT

The stormwater quality analysis for this study was undertaken using MUSIC 6 software to demonstrate that the stormwater management system proposed for the development will meet the stormwater treatment requirements in accordance with Water Sensitive Urban Design Guidelines prior to discharge downstream. The treatment requirements in the guideline provides target pollutant removal rates of 80% Total Suspended Solids (TSS), 45% Total Nitrogen (TN), 45% Total Phosphorus (TP) and 90% Gross Pollutants (GP).

5.1. MUSIC Model Development

A MUSIC model was prepared to reflect the proposed development as shown on **Figure 6** below. The model considers 2 kL rainwater tanks (RWT) on each residential lot with most of the catchments within the site ultimately discharging into three Wetlands around the site via Gross Pollutant Traps (GPT).

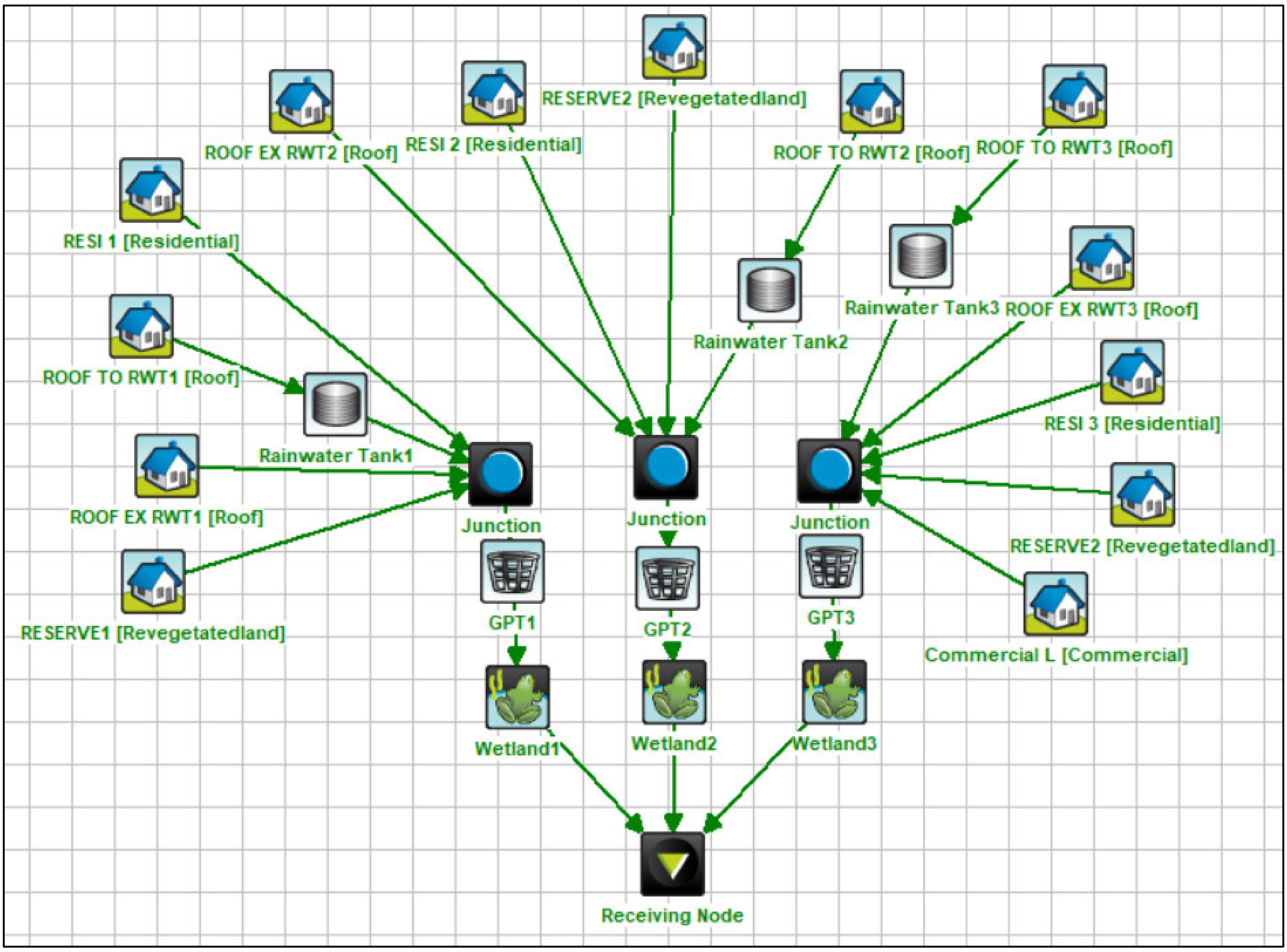

Figure 6: Music Layout

5.2. Modelling Parameters and Assumptions

The following inputs were implemented in the MUSIC model:

- 6-minute rainfall data from Traralgon L.v.w.& S.b. 085170 was adopted
- The following source node parameters were provided for various catchment areas:

Table 3: MUSIC Soil Parameters

PARAMETER	VALUE
Rainfall Threshold (mm)	1
Soil Storage Capacity (mm)	120
Initial Storage (%)	25
Field Capacity (mm)	50
Infiltration Capacity Coefficient A	200
Infiltration Capacity Exponent B	1
Initial Depth (mm)	10
Daily Recharge Rate (%)	25
Daily Baseflow Rate (%)	5
Daily Deep Seepage Rate (%)	0

Table 4: MUSIC Pollutant Generation Parameters

PARAMETER	VALUE
TSS Baseflow Mean (Log mg/L)	1.1
TSS Baseflow Std Dev (Log mg/L)	0.17
TSS Stormflow Mean (Log mg/L)	2.2
TSS Stormflow Std Dev (Log mg/L)	0.32
TP Baseflow Mean (Log mg/L)	-0.82
TP Baseflow Std Dev (Log mg/L)	0.19
TP Stormflow Mean (Log mg/L)	-0.45
TP Stormflow Std Dev (Log mg/L)	0.25
TN Baseflow Mean (Log mg/L)	0.32
TN Baseflow Std Dev (Log mg/L)	0.12
TN Stormflow Mean (Log mg/L)	0.42
TN Stormflow Std Dev (Log mg/L)	0.19

Table 5: Rainwater Tank Parameters (per tank)

PARAMETER	VALUE
Low Flow By-pass (m^3/s)	0.00
High Flow By-pass (m^3/s)	0.17
Volume below overflow pipe(kL)	2.00
Depth above overflow (m)	0.20
Surface Area (m^2)	1.4
Initial Volume (kL)	2.00
Overflow pipe diameter (mm)	90
Re-Use	
Daily Demand Properties (kL/day)	0.22

Table 6: Gross Pollutant Trap

PARAMETER	VALUE
Low Flow By-pass (m^3/s)	0.00
High Flow By-pass (m^3/s)	0.009
Concentration Based Capture Efficiency	
Input	**Output**
0.00	0.00
15.00	0.00
Flow Based Capture Efficiency	
Input	**Output**
0.00	0.00
1.00	100.00

Table 7: Wetland Input Parameters

PARAMETER	VALUE
Low Flow By-pass (m^3/s)	0.00
High Flow By-pass (m^3/s)	100.00
Wetland 1	
Surface Area (m^2)	5,000
Extended Detention Depth (m)	0.35
Permanent Pool Volume (m^3)	16,000
Initial Pool Volume (m^3)	16,000
Exfiltration Rate (mm/hr)	0.00
Evaporative Loss as% of PET	125
Equivalent Pipe Diameter (mm)	70
Overflow Weir Width (m)	3.0
Notional Detention Time (hrs)	72
Wetland 2	
Surface Area (m^2)	4,000

Extended Detention Depth (m)	0.35
Permanent Pool Volume (m³)	1,300
Initial Pool Volume (m³)	1,300
Exfiltration Rate (mm/hr)	0.00
Evaporative Loss as% of PET	125
Equivalent Pipe Diameter (mm)	60
Overflow Weir Width (m)	3.0
Notional Detention Time (hrs)	78
Wetland 3	
Surface Area (m²)	6,000
Extended Detention Depth (m)	0.35
Permanent Pool Volume (m³)	2,000
Initial Pool Volume (m³)	2,000
Exfiltration Rate (mm/hr)	0.00
Evaporative Loss as% of PET	125
Equivalent Pipe Diameter (mm)	76
Overflow Weir Width (m)	3
Notional Detention Time (hrs)	73

5.3. MUSIC Model Results

Model results are presented in **Table 8** and demonstrate that all pollutant load reduction targets have been achieved though the proposed treatment system.

Table 8: MUSIC Result Summary

	Best Practice Reduction Targets (%)	Achieved Reduction Results (%)
Total Suspended Solids (kg/yr)	80	80.0
Total Phosphorus (kg/yr)	45	64.9
Total Nitrogen (kg/yr)	45	52.6
Gross Pollutant (kg/yr)	70	100

As shown above in **Table 8**, the proposed MUSIC layout meets the best practice BPEMG standard for the proposed development.

6. CONCLUSION

Beveridge Williams have developed a Concept Stormwater Management Strategy in support of the rezoning of land from Farming Zone to General Residential 3 Zone and Commercial 1 Zone. Investigations undertaken have determined the following requirements for the development.

- As the difference between pre and post developed flows are only 4.97 m^3/s out of 49.36 m^3/s which is a difference of 8% in the overall scheme of events, there is a case for no flow attenuation to be implemented.
- Three Wetland systems with surface area ranging from 4000 m^2 to 6000 m^2 with upstream GPT's, and Rainwater Tanks provided on each residential lot will provide stormwater quality management for the proposed development to ensure pollutant removal targets are met prior to discharge from the site.

In summary, the study shows that stormwater management requirements can be achieved within the site effectively through flow attenuation and water quality systems for a residential development to be feasible. The hydrologic modelling determined that flow attenuation is not required for the proposed development.

It is recommended that further investigations to be undertaken in the detail design phase to design the proposed drainage assets incorporating the effects of climate change.

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Prepared by

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Water Resources Engineer

Reviewed by

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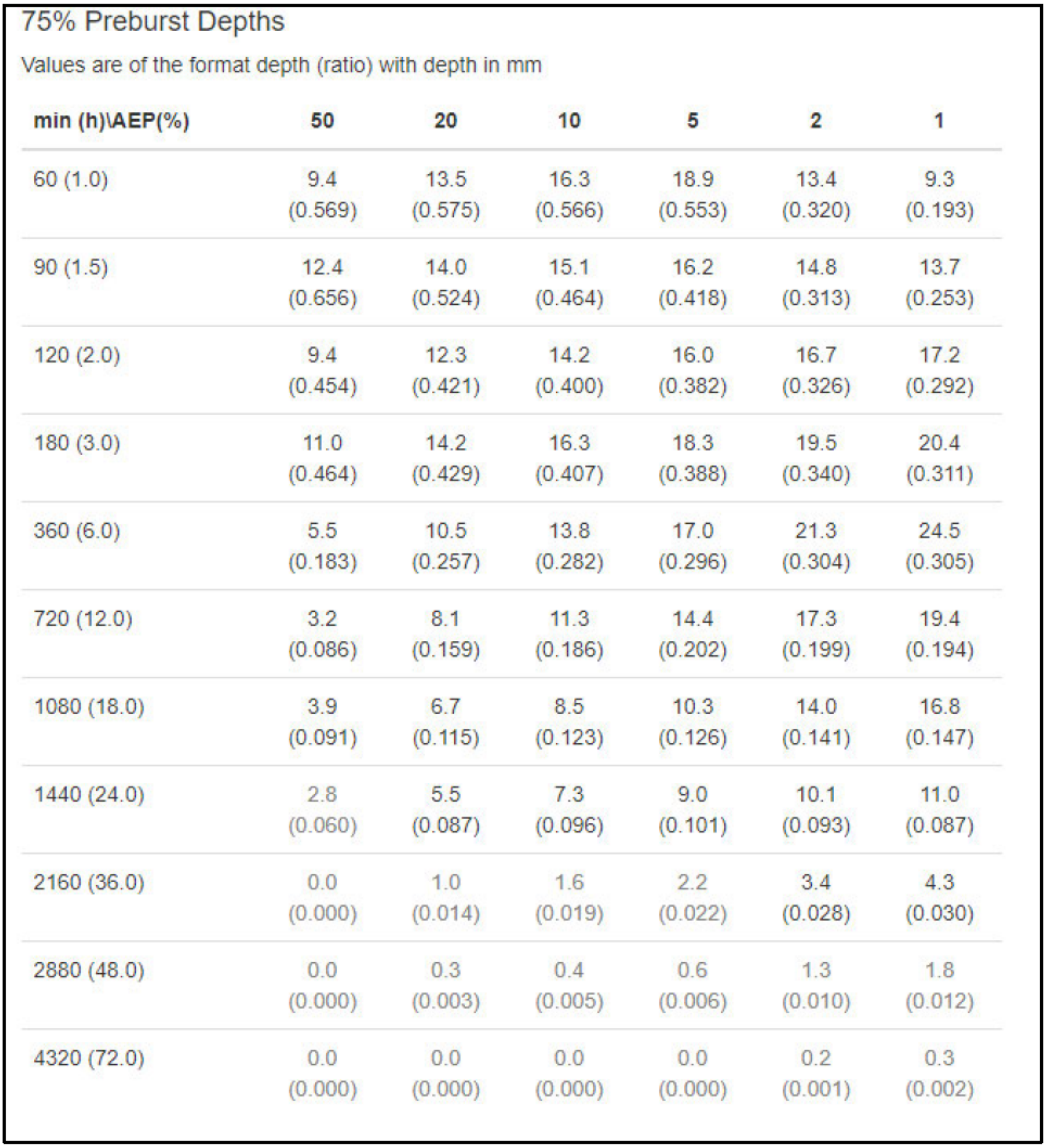
Senior Water Resources Engineer

Approved for issue by

[redacted]

Principal Town Planner

APPENDIX A: ARR DATAHUB 75TH PREBURST DEPTH INFORMATION



75% Preburst Depths

Values are of the format depth (ratio) with depth in mm

min (h)\AEP(%)	50	20	10	5	2	1
60 (1.0)	9.4 (0.569)	13.5 (0.575)	16.3 (0.566)	18.9 (0.553)	13.4 (0.320)	9.3 (0.193)
90 (1.5)	12.4 (0.656)	14.0 (0.524)	15.1 (0.464)	16.2 (0.418)	14.8 (0.313)	13.7 (0.253)
120 (2.0)	9.4 (0.454)	12.3 (0.421)	14.2 (0.400)	16.0 (0.382)	16.7 (0.326)	17.2 (0.292)
180 (3.0)	11.0 (0.464)	14.2 (0.429)	16.3 (0.407)	18.3 (0.388)	19.5 (0.340)	20.4 (0.311)
360 (6.0)	5.5 (0.183)	10.5 (0.257)	13.8 (0.282)	17.0 (0.296)	21.3 (0.304)	24.5 (0.305)
720 (12.0)	3.2 (0.086)	8.1 (0.159)	11.3 (0.186)	14.4 (0.202)	17.3 (0.199)	19.4 (0.194)
1080 (18.0)	3.9 (0.091)	6.7 (0.115)	8.5 (0.123)	10.3 (0.126)	14.0 (0.141)	16.8 (0.147)
1440 (24.0)	2.8 (0.060)	5.5 (0.087)	7.3 (0.096)	9.0 (0.101)	10.1 (0.093)	11.0 (0.087)
2160 (36.0)	0.0 (0.000)	1.0 (0.014)	1.6 (0.019)	2.2 (0.022)	3.4 (0.028)	4.3 (0.030)
2880 (48.0)	0.0 (0.000)	0.3 (0.003)	0.4 (0.005)	0.6 (0.006)	1.3 (0.010)	1.8 (0.012)
4320 (72.0)	0.0 (0.000)	0.0 (0.000)	0.0 (0.000)	0.0 (0.000)	0.2 (0.001)	0.3 (0.002)

1% AEP Loss Factor

STORM DURATION (h)	75TH PERCENTILE PRE-BURST DEPTH (mm)	INITIAL LOSS (mm)	INITIAL LOSS – 75TH PRE-BURST (mm)	LOSS FACTOR
1	9.3	22	12.7	0.58
1.5	13.7		8.3	0.38
2	17.2		4.8	0.22
3	20.4		1.6	0.07
6	24.5		-2.5	-0.11
12	19.4		2.6	0.12
18	16.8		5.2	0.24
24	11.0		11.0	0.50
36	4.3		17.7	0.80
48	1.8		20.2	0.92
72	0.3		21.7	0.99

APPENDIX B: RORB RESULTS

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RORBWin  Batch  Run  Summary
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Program  version  6.52 (last  updated  1st  June  2023)
Copyright  Monash  University and  Hydrology and  Risk  Consulting

Date  run  18 Sep  2025  16 54

Catchmen file  Q \mel\jotdata\2 01 -  5495 Princes  Highway  Traralgon' Dev\No  RB\210 94 -  Rev  E.catg
Rainfall  location  User  defined
Temporal  pattern  ARR2016  point  temporal  patterns
Spatial  pattern  Uniform
Areal  Red.  Fact.  Based  on  ARR  2016 (Book  2 Chapter  )
Loss  factors  Vary  with  ARI  -  ARI(yr)  1%
         InitLoss  factors  1
         ContLoss  factors  1
         Vary  with  Duration  -  Duration  0 min  15 min  20 min  25 min  30 min  45 min  1 hour  1.5 hour  2 hour  3 hour  4 5 hour  6 hour  9 hour  12 hour  8 hour  24 hour  30 hour  36 hour  48 hour  72 hour
96 hour  120 hour
         InitLoss  factors  0.58  0.58  0.58  0.58  0.58  0.58  0.58  0.58  0.58  0.07  0.04  0  0.06  0.12  0.24  0.5  0.65  0.8  0.92  0.99
€?  1

Model  parame erKc  m  Initial  loss  (mm)  Cont.  loss  (mm/h)
In erstatio area  above
External  Sou h  4.87  0.8  22  4.3
External  East  1.94  0.8  22  4.3
Catchmen outlet  0.87  0.8  22  4.3

Peak  Description
   1 Calc.  hyd.  for  ungauged interstatio site  at  External  South
   2 Calculatechydrograp Discharge Point  Central
   3 Calc.  hyd.  for  ungauged interstatio site  at  External  East
   4 Calculatechydrograp Discharge Point  East
   5 Calculatechydrograp Discharge Point  West
   6 Calculatechydrograp Outlet  overall

Run  Duration  AEP  TPat  Rain(mm) ARF  Peak0001 Peak0002 Peak0003 Peak0004 Peak0005 Peak0006
   1     0 min   1%  21   23.1  0.76   3.3916     3.99    1.969   3.9031   2.3055  10.1986
   1     0 min   1%  22   23.1  0.76   3.3916   4.0302   1.9357   3.9581   2.3916  10.3799
   1     0 min   1%  23   23.1  0.76   3.3916    3.959    1.989   3.8641   2.3617  10.0663
   1     0 min   1%  24   23.1  0.76   3.3916   3.8587    2.054   3.8733   2.7324  10.4643
   1     0 min   1%  25   23.1  0.76   3.3916   4.0021   1.9602   3.9177   2.3308  10.2507
   1     0 min   1%  26   23.1  0.76   3.3916   3.8926   2.0322   3.7962   2.5757    9.883
   1     0 min   1%  27   23.1  0.76   3.3916   4.0 53   1.9451   3.9296   2.3585  10.3034
   1     0 min   1%  28   23.1  0.76   3.3916    3.842   2.0492    3.821    2.698  10.3259
   1     0 min   1%  29   23.1  0.76   3.3916   4.1835   2.0834   4.2083   2.9535  11.3453
   1     0 min   1%  30   23.1  0.76   3.3916   3.9015   2.0579   3.9169   2.7602  10.5787
   2     5 min   1%  21   28.5   0.8   6.8976   6.8925   3.3901   4.3292   3.0064  11.6151
   2     5 min   1%  22   28.5   0.8   7.1732   7.1671   3.4811   4.6754   3.2415  12.5604
   2     5 min   1%  23   28.5   0.8   7.1702   7.1647   3.4661   4.4814   3.0374  11.97 5
   2     5 min   1%  24   28.5   0.8   7.1708   7.1653   3.5306   5. 961   3.5545  13.9375
   2     5 min   1%  25   28.5   0.8   7.1785   7.1739   3.5128   4.8279   3.1967   12.852
   2     5 min   1%  26   28.5   0.8   7.1708   7.1652   3.5502   5.7695   3.9417  15.4599
   2     5 min   1%  27   28.5   0.8   7.1708   7.1652   3.51 6   4.9105   3.3475  13.1569
   2     5 min   1%  28   28.5   0.8   7.1725   7.1671   3.5284   5. 014   3.4764  13.6691
   2     5 min   1%  29   28.5   0.8   7.4756   7.4705   3.6094   5.2386   3.7866  13.9947
   2     5 min   1%  30   28.5   0.8   7.4756   7.4705   3.6953    5.634   4.0943  15.22 9
   3    20 min   1%  21   32.4  0.82  10.2049   0.1967   4.7289    5.149   3.6141   13.851
   3    20 min   1%  22   32.4  0.82  10.2118   0.2038   4.7165   4.9485   3.3405  13.0505
   3    20 min   1%  23   32.4  0.82  10.2053   0.1972   4.7507   5.1742   3.6339  13.9117
   3    20 min   1%  24   32.4  0.82  10.2216   0.2 55   4.7302   5.5862   4.0739  14.9631
   3    20 min   1%  25   32.4  0.82  10.2173   0.2092   4.7788   5.8385    4.141  15.74 9
   3    20 min   1%  26   32.4  0.82   10.219   0.2086   4.7767   5.7436   4.1598    5.583
   3    20 min   1%  27   32.4  0.82  10.2171   10.209   4.7739   5.8197   4.1178    5.676
   3    20 min   1%  28   32.4  0.82   10.233   0.2248   4.7578   6.0142   4.2149  16.0637
   3    20 min   1%  29   32.4  0.82  10.5128   0.5052   4.8935    6.124    4.204  16.4194
   3    20 min   1%  30   32.4  0.82  10.5128   0.5052   4.8874   6.3223   4.2901  16.8548
   4    25 min   1%  21   35.5  0.83   12.713  12.7049   5.7386    6.161     4.27  16.4339
   4    25 min   1%  22   35.5  0.83  12.7124  12.6999   5.6828   5.8374   3.8082  15.5963
   4    25 min   1%  23   35.5  0.83  13.0243  13.0 51   5.8198    5.955   4.1962  16.1652
   4    25 min   1%  24   35.5  0.83  12.7093  12.7008   5.6565   5.9526   3.8962  15.8654
   4    25 min   1%  25   35.5  0.83  12.7054   12.698   5.6924   5.9879    4.022  15.8332
   4    25 min   1%  26   35.5  0.83  12.7155  12.7079   5.7398   5.9843   4.1559  16.0613
   4    25 min   1%  27   35.5  0.83   12.723  12.7122   5.7501   5.8176   4.2113  15.8191
   4    25 min   1%  28   35.5  0.83  12.7117  12.7046   5.7339   6. 045   4.2977  16.3198
   4    25 min   1%  29   35.5  0.83  13.3548  13.3418   6.0807    7.592    5.374  20.45 5
   4    25 min   1%  30   35.5  0.83  13.0274  13.0144   5.8846   6.5179   4.5052  17.3414
   5    30 min   1%  21   37.9  0.84  15.0033  14.9942   6.5813   6.6154   4.4889  18.3876
   5    30 min   1%  22   37.9  0.84  14.6926  14.6784   6.4642    6.626   4.0995  18.0106
   5    30 min   1%  23   37.9  0.84  14.6861  14.6732   6.4455   6.6167   4.0 57  18.0073
   5    30 min   1%  24   37.9  0.84  14.6924   14.678   6.47 5   6.5344   4.1954  18.0109
   5    30 min   1%  25   37.9  0.84   15.006  14.9957   6.6337    6.659   4.5 62  18.3994
   5    30 min   1%  26   37.9  0.84  15.0024  14.9935   6.6392   6.8003   4.6938    18.39
   5    30 min   1%  27   37.9  0.84  14.6901  14.6774   6.45 9   6.5296   4.2517  18.0074
   5    30 min   1%  28   37.9  0.84  15.0143   14.999    6.6 8   6.6435   4.3941  18.3917
   5    30 min   1%  29   37.9  0.84  15.3322    15.32   6.8313   6.9282   4.9803  18.8031
   5    30 min   1%  30   37.9  0.84  15.1485   5.1332   6.7407   6.9327   4.8937  18.61 9
   6     5 min   1%  21   43.4  0.86  19.8202   9.8094   8.4135    8.349   5.3403  24.2821
   6     5 min   1%  22   43.4  0.86  19.8343   19.816    8.438   8.6421   5.1647  24.3006
   6     5 min   1%  23   43.4  0.86  20.1155  20.0979   8.1671   8.6928   4.9086   24.684
   6     5 min   1%  24   43.4  0.86  19.4365   9.4178   7.8811   8.5234   5.2571  23.8595
   6     5 min   1%  25   43.4  0.86   19.427   9.4 66   7.8889   8. 999   4.7379  23.8452
   6     5 min   1%  26   43.4  0.86  19.4814   9.4675   8.1479   8.3707   5.4306  23.87 9
   6     5 min   1%  27   43.4  0.86  19.5928   9.5732   8.1539    8.498   4.9371  24.0213
   6     5 min   1%  28   43.4  0.86  19.4706   19. 53   8.1266   8.4313   5.0773  23.8707
   6     5 min   1%  29   43.4  0.86    20.17   20. 56   8.6407   8.5387    5.584  24.7056
   6     5 min   1%  30   43.4  0.86  19.8279   9.8078   8.4038   8.6288   5.8779  24.2842
   7    1 hour   1%  21   47.3  0.87  23.5006  23.4798   9.8752   9.7883   6.4763  28.79 5
   7    1 hour   1%  22   47.3  0.87  22.3422  22.3284    8.292   9.0575   4.4071  27.4861
   7    1 hour   1%  23   47.3  0.87  22.7728  22.7504    8.992    9.616   5.5848  27.9333
   7    1 hour   1%  24   47.3  0.87  22.3468  22.3258   8.6784   9.1446   4.9 69  27.4855
   7    1 hour   1%  25   47.3  0.87  21.9436  21.9298   8.5057   8.7991   4.9859  27.0398
   7    1 hour   1%  26   47.3  0.87  22.2059  22.1911   8.4084   9.1402   5.4565  27.4294
   7    1 hour   1%  27   47.3  0.87  22.7542   22.737   8.9436   9.5094   5.2667  27.93 5
   7    1 hour   1%  28   47.3  0.87  22.7629  22.7495   9.1879   9.5969   5.7301  27.9301
   7    1 hour   1%  29   47.3  0.87  22.7433  22.7224   9.0931   9.5883    5.511  27.9163
   7    1 hour   1%  30   47.3  0.87  23.8459   23.825  10.0211  10.0243   6.4007  29.2128
   8  1 5 hour   1%  21   52.9  0.88  26.5437  26.5263    8.869   9.8712   4.6933  32.7749
   8  1 5 hour   1%  22   52.9  0.88  27.3681  27.3444  10.3667  10.9298   5.9015  33.6969
   8  1 5 hour   1%  23   52.9  0.88  26.1742  26.1543   8.9298   9.5936   4.9115   32.533
   8  1 5 hour   1%  24   52.9  0.88  25.8794  25.8621   9.2606   9.7368   5.3219  32.2203
   8  1 5 hour   1%  25   52.9  0.88  25.6145  25.5977   7.5272   8.3783   4.7775  31.8299
   8  1 5 hour   1%  26   52.9  0.88  27.3921  27.3771    0.057  10.7874   5.5441  33.7221
   8  1 5 hour   1%  27   52.9  0.88   26.973  26.9565   9.9574  10.5688   5.4078  33.2552
   8  1 5 hour   1%  28   52.9  0.88  26.9385  26.9 82   9.8936  10.3663    5.695  33.2443
   8  1 5 hour   1%  29   52.9  0.88  27.2894  27.2668   9.6796   10.752    5.607  33.6829
   8  1 5 hour   1%  30   52.9  0.88  26.6693  26.6538  10.6823  10.7954    6.317  32.77 6
   9    2 hour   1%  21   57.1  0.89  28.7882  28.7603    8.756   9.7082   4.6449  36.0154
   9    2 hour   1%  22   57.1  0.89  28.9884  28.9703   9.4981   10.322   5.0651  36.2044
   9    2 hour   1%  23   57.1  0.89  28.5809  28.5628   8.1214   8.9247   4.9126  36.2414
   9    2 hour   1%  24   57.1  0.89  29.0942  29.0715   8.9808  10.1338   5.3656  36.6348
   9    2 hour   1%  25   57.1  0.89  29.2727  29.2567  10.2597  11.0149   5.5777  36.4257
   9    2 hour   1%  26   57.1  0.89  28.2406  28.2142   8.4673    9.286   4.2 64  35.6223
   9    2 hour   1%  27   57.1  0.89   29.153  29.1287  10.0047  10.8586   5.1977  36.2282
   9    2 hour   1%  28   57.1  0.89  29.9104  29.8928   9.1648  10.1134     5.25  37.1537
   9    2 hour   1%  29   57.1  0.89  29.7918  29.7703  10.4087  11.2946   5.5574  36.78 9
   9    2 hour   1%  30   57.1  0.89  29.5225  29.5029  11.0873  11.7551    6. 97  36.3626
  10    3 hour   1%  21   63.6  0.89  38.3532  38.2755   11.805  12.4341   6.1433  49.1866
  10    3 hour   1%  22   63.6  0.89  36.4911  36.9058  10.0496  10.9465   4.6233  45.2373
  10    3 hour   1%  23   63.6  0.89  35.4831  35.5091   7.6881   8.5683   3.8609  45.7743
  10    3 hour   1%  24   63.6  0.89   36.324   36.582   9.0914  10.0831   4.3056    45.32
  10    3 hour   1%  25   63.6  0.89  39.5373  39.7717   9.1517  10.1104     4.19  50.3852
  10    3 hour   1%  26   63.6  0.89  40.0292   39.979  10.2493  11.5836   5.1488  50.2157
  10    3 hour   1%  27   63.6  0.89  38.4314  38.5275    9.027     9.89   4.0617  49.5047
  10    3 hour   1%  28   63.6  0.89  39.1329  38.9808   9.9181  10.9885   4.5994  49.3641
  10    3 hour   1%  29   63.6  0.89  37.7094  37.6364   8.6951   9.6369   4.1138  48.4201
  10    3 hour   1%  30   63.6  0.89  41.5726  41.5427  12.1278    13.33   5.9032  52.2808
  11  4 5 hour   1%  21   71.1  0.91  30.5906  31.2519   6.2397   6.9433   3.0327  39.0433
  11  4 5 hour   1%  22   71.1  0.91  40.1443  40.5619   8.6143   9.5398   3.8561  51.1975
  11  4 5 hour   1%  23   71.1  0.91  31.9068  32.6121   7.1829   7.7654     3.79   40.425
  11  4 5 hour   1%  24   71.1  0.91  32.5732  33.1075   9.5028  10.2826   4.7528  39.9565
  11  4 5 hour   1%  25   71.1  0.91  34.3938  34.9872    6.403   7.2086    2.842  43.1975
  11  4 5 hour   1%  26   71.1  0.91  38.7677  38.9717   8.1331   8.9688    3.988  48.8895
  11  4 5 hour   1%  27   71.1  0.91   35.378  35.3867   8.5407   9.3276    3.889  47.3414
  11  4 5 hour   1%  28   71.1  0.91   36.541  36.7534   7.5411   8.2082   3.5092  46.5869
  11  4 5 hour   1%  29   71.1  0.91  41.0731  41.0713  11.17 6  12.0644    5.138  53.0052
  11  4 5 hour   1%  30   71.1  0.91  41. 579  41.4897  10.04 5  11.3076   4.6619  52.9564
  12    6 hour   1%  21   77.3  0.94  41.6441  41.5883  11.5589  12.5412   5.7293  54.4093
  12    6 hour   1%  22   77.3  0.94  32. 598  33.0423   8.2427   8.8135    3.908  40.4531
  12    6 hour   1%  23   77.3  0.94  30. 622  30.1429   7.3181    8.038    3.864  40.8741
  12    6 hour   1%  24   77.3  0.94  29.5657  30.4009   8.2443   9.0102   3.7938  36.7414
  12    6 hour   1%  25   77.3  0.94   30.709  30.9485   8.0053   8.9339   3.5466  38.6734
  12    6 hour   1%  26   77.3  0.94  30.6287  31.1627  10.1801  10.8707   5.4892  38.0378
  12    6 hour   1%  27   77.3  0.94  30.6088  31.1142   5.4426   6.1122   2.2815  38.8321
  12    6 hour   1%  28   77.3  0.94   33.129  33.3389   7.2598   8. 961   3.2652  41.9646
  12    6 hour   1%  29   77.3  0.94  30.0652  30.4609   6.0537   6.7892    2.566  38.1246
  12    6 hour   1%  30   77.3  0.94  39.5666   39.781    8.32 8   9.2753   3.7833  49.8417
  13    9 hour   1%  21   87.4  0.96  22.8382  23.4257   3.8747   4.4151   1.8018  29.4778
  13    9 hour   1%  22   87.4  0.96  22.7819  23.2581   4.8722   5. 526   2.2757  28.4995
  13    9 hour   1%  23   87.4  0.96  33.3819   33.644   9.7097  10.4704   4.7865  41.3681
  13    9 hour   1%  24   87.4  0.96  30.4008  30.6762   6.1137   6.7762    2.715  38.5609
  13    9 hour   1%  25   87.4  0.96  30.9003  31.3143   9.1012    9.702   4.8226  38.4151
  13    9 hour   1%  26   87.4  0.96     9.88   9.9351   4.1052   4.7143   1.7961  25.4714
  13    9 hour   1%  27   87.4  0.96  25.5235  25.6315   6.1768   6.8719   2.9793  33.5578
  13    9 hour   1%  28   87.4  0.96  29.4273  29.6421   6.1901   6.8347   2.6476  37.6551
  13    9 hour   1%  29   87.4  0.96  35.5506   35. 55   7.4325   8.4027   3.3055  45.0771
  13    9 hour   1%  30   87.4  0.96  38.1708  38.1618     9.83  10.4877   4.8387  49.8281
  14   12 hour   1%  21   95.8  0.96  31.7102   31.661   7.5353   8.3116   3.4337  39.7003
  14   12 hour   1%  22   95.8  0.96  25.8197  26.0655   5.9059   6.4112   2.6081  34.0281
  14   12 hour   1%  23   95.8  0.96  22.1176  22.4907   4.6628   5.2022   2.1556  27.6853
  14   12 hour   1%  24   95.8  0.96  27.3438  27.6059   5.5353    6.139   2.4 58  34.6486
  14   12 hour   1%  25   95.8  0.96  36.5478  36.5626   9.1926   9.9289   4.6955   47.681
  14   12 hour   1%  26   95.8  0.96  21.6888  22.1354   3.92 5    4.417   1.6246  27.8625
  14   12 hour   1%  27   95.8  0.96  25.4266  25.6146   5.5683   6.2369   2.4 97  32.6759
  14   12 hour   1%  28   95.8  0.96  35.2368  35.5997   8.0806   9.0051   3.7493  43.7584
  14   12 hour   1%  29   95.8  0.96  23.9331  24.4088   4.36 5   4.8925   1.8956  30.5934
  14   12 hour   1%  30   95.8  0.96  22. 949  22.3684   5.6686   6. 927   2.8272   29.711
  15    8 hour   1%  21     09  0.97  10.8968  11.1853   2.3509   2.7026    1.074  13.7868
  15    8 hour   1%  22     09  0.97  16.0988   6.4652   3.1334   3.5722   1.3898   20.263
  15    8 hour   1%  23     09  0.97  15.4259   5.8771   3.0526   3. 588   1.3917  19.5372
  15    8 hour   1%  24     09  0.97  22.8523  23.1055   4.8349   5.4291   2.0642  28.8922
  15    8 hour   1%  25     09  0.97  21.4498  21.4829   4.8056   5.3715   2.2804  28.1078
  15    8 hour   1%  26     09  0.97  13.3087   13.598   2.8551    3.236   1.2926  16.8937
  15    8 hour   1%  27     09  0.97  25.0062   25.422   4.9444   5.5728   2.0722  31.0087
  15    8 hour   1%  28     09  0.97  18. 099   8.4806    4.995   5.4178   2.4088  23.6777
  15    8 hour   1%  29     09  0.97  15.5172   5.8938   3.1039   3.4647    1.531  19.7286
  15    8 hour   1%  30     09  0.97  15.3038   5.7 69   3.0398   3.4716   1.3293  19.9827
  16   24 hour   1%  21    120  0.99   17.672   8.1365   3.3958   3.8677   1.4373  22.5339
  16   24 hour   1%  22    120  0.99    9.958   10.245   2.0208   2.3384   0.8892  13.0624
  16   24 hour   1%  23    120  0.99  16.0154   6.1563   4.0696   4.5027   1.7406  20.3611
  16   24 hour   1%  24    120  0.99  13.8814  13.9588   3.4897   3.9095   1.6436  17.6174
  16   24 hour   1%  25    120  0.99  15.9052   6.0845   4.3668   4.7592   1.9435  20.0639
  16   24 hour   1%  26    120  0.99  16.8749   17.273   3.6853   4.0907   1.6477  21.1333
  16   24 hour   1%  27    120  0.99  18.4332   8.8298   4.0009   4.4128   1.8689   23.065
  16   24 hour   1%  28    120  0.99    8.812   9.1121   1.9904   2.2467   0.9463  11.5954
  16   24 hour   1%  29    120  0.99  16.6327    16.54   3.6983   3.9777   1.6585   21.952
  16   24 hour   1%  30    120  0.99  17.3785  17.9043   3.7347    4.242   1.9494  22.2431
  17   30 hour   1%  21    129  0.99   8.6441   8.9692   1.9669   2.2739   0.8467  11.1193
  17   30 hour   1%  22    129  0.99  20.9763  21.1703    3.909   4.4131   1.7745  27.0322
  17   30 hour   1%  23    129  0.99  11.2559   11. 56   2.2924   2.5443   1.1821  14.4198
  17   30 hour   1%  24    129  0.99  11.4718   11.6 88   2.3978    2.745   1.0764  15.3129
  17   30 hour   1%  25    129  0.99  22.8361   22.954   4.7201   5.3533   2.2543  27.6525
  17   30 hour   1%  26    129  0.99   7.9007   8.2309   1.6431   1.8804   0.7942  10.3011
  17   30 hour   1%  27    129  0.99   5. 007   5.2922    1.239   1.4655   0.6031   6.9354
  17   30 hour   1%  28    129  0.99   6.3307   6.6096    1.222   1.4711   0.6 94   8.3098
  17   30 hour   1%  29    129  0.99   14.378   14.745   2.7682   3. 602   1.1894    8.195
  17   30 hour   1%  30    129  0.99   7.0133   7.2599   1.3696    1.631   0.6635   9.3343
  18   36 hour   1%  21    136  0.99   5.6908   5.9852   1.2708   1.5104   0.5705   7.6334
  18   36 hour   1%  22    136  0.99   7.7651   8.0494   1.7511   2.0308   0.7779   9.9108
  18   36 hour   1%  23    136  0.99  11.3423  11.7244   2.7679   3.1152   1.1947  14.2527
  18   36 hour   1%  24    136  0.99  21.2215  21.8072   4.6432   5. 871   1.9566  25.6239
  18   36 hour   1%  25    136  0.99  10.0157   0.3996   2.3308   2.6577    0.981  13.3643
  18   36 hour   1%  26    136  0.99   8. 579   8.7064   1.9492   2.2246   0.9446  10.8875
  18   36 hour   1%  27    136  0.99   4. 921   4.4549   1.0556   1.2662   0.5 88   5.8963
  18   36 hour   1%  28    136  0.99   5.0666   5.2316    0.994   1.2086   0.5305   6.8009
  18   36 hour   1%  29    136  0.99  32.3156  32.7642   5.9093   6.6036   2.7 95  40.4058
  18   36 hour   1%  30    136  0.99  13.5962  13.8589   2.4873   2.8588   1.1329  17.6825
  19   48 hour   1%  21    148  0.99   4.5007   4.7543   1.0742    1.298   0.5392   6.2289
  19   48 hour   1%  22    148  0.99  12.3643   12.615    2.685   3.0475   1.2487    5.4 6
  19   48 hour   1%  23    148  0.99  18.5059   8.5285   4.3724   4.8681   1.7403  25.0227
  19   48 hour   1%  24    148  0.99   8.7549    9.084   2.2546   2.5619   0.9909  11.4166
  19   48 hour   1%  25    148  0.99   26.218  26.5793   5.5587   6.1714    2.486  31.4281
  19   48 hour   1%  26    148  0.99   8.0188   8.2551   1.8706   2.1476   0.9136  10.3299
  19   48 hour   1%  27    148  0.99   5.8263   5.9261   1.3922   1.6455   0.6972   7.5761
  19   48 hour   1%  28    148  0.99    6.518   6.7 59     1.37   1.6274   0.6 56   8.9588
  19   48 hour   1%  29    148  0.99   5.8342   6.1289   1.3846    1.642   0.6961   7.69 5
  19   48 hour   1%  30    148  0.99  10.9515   0.7258    2.663   2.8666   1.0926  14.5838
  20   72 hour   1%  21     63  0.99   1.5855   1.7642   0.4529   0.6095   0.2819   2.5754
  20   72 hour   1%  22     63  0.99  10.0395   0.3971   2.1014   2.4374   0.9758  12.5386
  20   72 hour   1%  23     63  0.99  10.3964   10.541   2.1093   2.4121   0.8789  13.7707
  20   72 hour   1%  24     63  0.99   4.3067   4.3955   0.9895   1. 821   0.5055   5.9648
  20   72 hour   1%  25     63  0.99   1.9162   1.9778   0.5199   0.6416   0.2785    2.84 8
  20   72 hour   1%  26     63  0.99   2.3841   2.5632   0.50 5   0.7062   0.2876   3.4755
  20   72 hour   1%  27     63  0.99   5.3571   5.5989   1.0173   1.2396   0.4628    7.29 5
  20   72 hour   1%  28     63  0.99  16.4114   16.605   2.7667   3.2024   1.4236    20.49
  20   72 hour   1%  29     63  0.99  10.9228  11.0897   2.0579   2.3997   1.0071  13.4413
  20   72 hour   1%  30     63  0.99   6.7682   7.1326   1.4104   1.6547   0.6136   8.7933
  21   96 hour   1%  21    171  0.99   6.6175   6.5857   1.3425   1.4744   0.6326   8.5327
  21   96 hour   1%  22    171  0.99  21.4112   21.9 83   3.7273   4.2291   1.7262  26.7039
  21   96 hour   1%  23    171  0.99    3.157   3.2734   0.8317   1.0229   0.3917   4.6879
  21   96 hour   1%  24    171  0.99  10.0934   0.4418   2.0713   2.4044   0.9669  12.6605
  21   96 hour   1%  25    171  0.99   6.8796   6.8513   1.3587   1.4784   0.6774   8.8031
  21   96 hour   1%  26    171  0.99   1.3654   1.5417   0.4633    0.638   0.2538   2.4334
  21   96 hour   1%  27    171  0.99   5.3544   5.4251   1.0881   1.2383   0.5082    7.069
  21   96 hour   1%  28    171  0.99   5.3036   5.6324   1.1617   1.3784   0.5131   6.9582
  21   96 hour   1%  29    171  0.99   3.7625   3.8465   0.8563   1.0846   0.4755   4.8447
  21   96 hour   1%  30    171  0.99  21.8176  22.5921   4.7608   5.3257   1.9987  28.5043
  22  120 hour   1%  21    175  0.99   1.5928   1.6061   0.4286   0.6098   0.2813   2.1748
  22  120 hour   1%  22    175  0.99  12.5163  12.5255   2.56 5   2.9217   1.0637  16.0473
  22  120 hour   1%  23    175  0.99  16. 824   6.4655   2.9648   3.3869   1.1709  21.0022
  22  120 hour   1%  24    175  0.99  14. 541   14.9 51   2.7807   3.1708   1.1611    8.009
  22  120 hour   1%  25    175  0.99   2.4094   2.3765   0.5875   0.6603   0.3 07    3.26 9
  22  120 hour   1%  26    175  0.99   3.6662   3.6853   0.8233   0.9462   0.4662   4.9298
  22  120 hour   1%  27    175  0.99  10.3611   0.7238   2.1588   2.5006   0.9992  12.9225
  22  120 hour   1%  28    175  0.99   3.6687   3.6697    0.806   0.9021   0.4076   4.8758
  22  120 hour   1%  29    175  0.99    1.023   1.0214    0.31 8   0.4059   0.1989   1.5181
  22  120 hour   1%  30    175  0.99   7.3078   7.4055   1.7787   2.0704   0.7794  10.2553
Run  Represent hydrograph
   1 dur10min_aep1tp28.out
Run  Represent hydrograph
   2 dur15min_aep1tp28.out
Run  Represent hydrograph
   3 dur20min_aep1tp27.out
Run  Represent hydrograph
   4 dur25min_aep1tp23.out
Run  Represent hydrograph
   5 dur30min_aep1tp26.out
Run  Represent hydrograph
   6 dur45min_aep1tp21.out
Run  Represent hydrograph
   7 dur1hour_aep  tp28.out
Run  Represent hydrograph
   8 dur1_5hour_aep  tp28.out
Run  Represent hydrograph
   9 dur2hour_aep  tp30.out
Run  Represent hydrograph
  10 dur3hour_aep  tp28.out
Run  Represent hydrograph
  11 dur4_5hour_aep  tp27.out
Run  Represent hydrograph
  12 dur6hour_aep  tp22.out
Run  Represent hydrograph
  13 dur9hour_aep  tp25.out
Run  Represent hydrograph
  14 dur12hour_aep1tp22.out
Run  Represent hydrograph
  15 dur18hour_aep1tp22.out
Run  Represent hydrograph
  16 dur2  hour_aep1tp26.out
Run  Represent hydrograph
  17 dur30hour_aep1tp23.out
Run  Represent hydrograph
  18 dur36hour_aep1tp25.out
Run  Represent hydrograph
  19 dur48hour_aep1tp24.out
Run  Represent hydrograph
  20 dur72hour_aep1tp30.out
Run  Represent hydrograph
  21 dur96hour_aep1tp21.out
Run  Represent hydrograph
  22 dur120hour_aep1tp30.out

Elapsed  Run  Time  (hh mm s =  0 00 13
```

```
RORBWin   Batch     Run       Summary
*************************

Program   version        6.52 (last     updated    st       June     2023)
Copyright Monash    University and      Hydrology  and      Risk     Consulting

Date      run              18 Sep          2025      6.54

Catchmen  file                O.\mel\jo data\2_01 -            5495  Princes  Highway  Traralgon Dev\No   RB\2_0194 -         Rev      E.catg
Rainfall  location  User      defined
Temporal  pattern             ARR20_6   point     temporal  patterns
Spatial   pattern             Un form
Areal     Red       Fact                Based     on        ARR           2016 (Book            2 Chapter  4)
Loss      factors             Vary      with      ARI       -         ARI(yr)        1%
          InitLoss  factors         1
          ContLoss  factors         1
          Vary      with      Duration  -         Duration        10 min            5 min           20 min           25 min           30 min           45 min            1 hour         1.5 hour           2 hour           3 hour         4.5 hour           6 hour           9 hour          12 hour          18 hour          24 hour          30 hour          36 hour          48 hour          72 hour
96  hour               120    hour
          InitLoss  factors      0.58      0.58      0.58      0.58      0.58      0.58      0.58      0.58      0.58      0.07      0.04         0      0.06      0.12      0.24       0.5      0.65       0.8      0.92      0.99
€?                  1

Model     paramete  Kc        m         Initial   loss      (mm)      Cont      loss      (mm/h)
Interstatic area    above
External  South          4.87       0.8        22       4.3
External  East           1.94       0.8        22       4.3
Catchmen  outlet         0.87       0.8        22       4.3

Peak      Description
        1 Calc.     hyd.      for       ungauged  interstatic site      at        External  South
        2 Calculate hydrograp Discharge Point     Central
        3 Calc.     hyd.      for       ungauged  interstatic site      at        External  East
        4 Calculate hydrograp Discharge Point     East
        5 Calculate hydrograp Discharge Point     West
        6 Calculate hydrograp Outlet    overall

Run       Dura ion  AEP       TPat      Rain(mm)  ARF       Peak0001  Peak0002  Peak0003  Peak0004  Peak0005  Peak0006
        1         0 min            1%        21      23.1      0.76    3.3916      3.99     1.969    3.9031    2.3055   10.1986
        1         0 min            1%        22      23.1      0.76    3.3916    4.0302    1.9357    3.9581    2.3916   10.3799
        1         0 min            1%        23      23.1      0.76    3.3916     3.959     1.989    3.8641    2.3617   10.0663
        1         0 min            1%        24      23.1      0.76    3.3916    3.8587     2.054    3.8733    2.7324   10.4643
        1         0 min            1%        25      23.1      0.76    3.3916    4.0021    1.9602    3.9177    2.3308   10.2507
        1         0 min            1%        26      23.1      0.76    3.3916    3.8926    2.0322    3.7962    2.5757     9.883
        1         0 min            1%        27      23.1      0.76    3.3916    4.0153    1.9451    3.9296    2.3585   10.3034
        1         0 min            1%        28      23.1      0.76    3.3916     3.842    2.0492     3.821     2.698   10.3259
        1         0 min            1%        29      23.1      0.76    3.3916    4.1835    2.0834    4.2083    2.9535   11.3453
        1         0 min            1%        30      23.1      0.76    3.3916    3.90 5    2.0579    3.9169    2.7602   10.5787
        2         5 min            1%        21      28.5       0.8    6.8976    6.8925    3.3901    4.3292    3.0064   11.6151
        2         5 min            1%        22      28.5       0.8    7.1732    7.1671    3.4811    4.6754    3.2415   12.5604
        2         5 min            1%        23      28.5       0.8    7.1702    7.1647    3.4661    4.4814    3.0374   11.97 5
        2         5 min            1%        24      28.5       0.8    7.1708    7.1653    3.5306    5.1961    3.5545   13.9375
        2         5 min            1%        25      28.5       0.8    7.1785    7.1739    3.5128    4.8279    3.1967    12.852
        2         5 min            1%        26      28.5       0.8    7.1708    7.1652    3.5502    5.7695    3.9417   15.4599
        2         5 min            1%        27      28.5       0.8    7.1708    7.1652    3.5116    4.9105    3.3475   13.1569
        2         5 min            1%        28      28.5       0.8    7.1725    7.1671    3.5284    5.1014    3.4764   13.6691
        2         5 min            1%        29      28.5       0.8    7.4756    7.4705    3.6094    5.2386    3.7866   13.9947
        2         5 min            1%        30      28.5       0.8    7.4756    7.4705    3.6953     5.634    4.0943   15.22 9
        3        20 min            1%        21      32.4      0.82   10.2049   10.1967    4.7289     5.149    3.6141    13.851
        3        20 min            1%        22      32.4      0.82   10.2118   10.2038    4.7165    4.9485    3.3405   13.0505
        3        20 min            1%        23      32.4      0.82   10.2053   10.1972    4.7507    5.1742    3.6339   13.9117
        3        20 min            1%        24      32.4      0.82   10.2216   10.2155    4.7302    5.5862    4.0739   14.9631
        3        20 min            1%        25      32.4      0.82   10.2173   10.2092    4.7788    5.8385     4.141   15.74 9
        3        20 min            1%        26      32.4      0.82    10.219   10.2086    4.7767    5.7436    4.1598     5.583
        3        20 min            1%        27      32.4      0.82   10.2171     0.209    4.7739    5.8197    4.1178     5.676
        3        20 min            1%        28      32.4      0.82    10.233   10.2248    4.7578    6.0142    4.2149   16.0637
        3        20 min            1%        29      32.4      0.82   10.5128   10.5052    4.8935     6.124     4.204   16.4194
        3        20 min            1%        30      32.4      0.82   10.5128   10.5052    4.8874    6.3223    4.2901   16.8548
        4        25 min            1%        21      35.5      0.83    12.713   12.7049    5.7386     6.161      4.27   16.4339
        4        25 min            1%        22      35.5      0.83   12.7124   12.6999    5.6828    5.8374    3.8082   15.5963
        4        25 min            1%        23      35.5      0.83   13.0243   13.0151    5.8198     5.955    4.1962   16.1652
        4        25 min            1%        24      35.5      0.83   12.7093   12.7008    5.6565    5.9526    3.8962   15.8654
        4        25 min            1%        25      35.5      0.83   12.7054    12.698    5.6924    5.9879     4.022   15.8332
        4        25 min            1%        26      35.5      0.83   12.7155   12.7079    5.7398    5.9843    4.1559   16.0613
        4        25 min            1%        27      35.5      0.83    12.723   12.7122    5.7501    5.8176    4.2113   15.8191
        4        25 min            1%        28      35.5      0.83   12.7117   12.7046    5.7339    6.10 5    4.2977   16.3198
        4        25 min            1%        29      35.5      0.83   13.3548   13.34 8    6.0807     7.592     5.374   20.45 5
        4        25 min            1%        30      35.5      0.83   13.0274   13.0144    5.8846    6.5179    4.5052   17.3414
        5        30 min            1%        21      37.9      0.84   15.0033   14.9942    6.5813    6.6154    4.4889   18.3876
        5        30 min            1%        22      37.9      0.84   14.6926   14.6784    6.4642     6.626    4.0995   18.0106
        5        30 min            1%        23      37.9      0.84   14.6861   14.6732    6.4455    6.6167    4.0 57   18.0073
        5        30 min            1%        24      37.9      0.84   14.6924    14.678    6.4715    6.5344    4.1954   18.0109
        5        30 min            1%        25      37.9      0.84    15.006   14.9957    6.6337     6.659    4.5 62   18.3994
        5        30 min            1%        26      37.9      0.84   15.0024   14.9935    6.6392    6.8003    4.6938     18.39
        5        30 min            1%        27      37.9      0.84   14.6901   14.6774    6. 519    6.5296    4.2517   18.0074
        5        30 min            1%        28      37.9      0.84   15.0143    14.999     6.618    6.6435    4.3941   18.3917
        5        30 min            1%        29      37.9      0.84   15.3322     15.32    6.8313    6.9282    4.9803   18.8031
        5        30 min            1%        30      37.9      0.84   15.1485   15.1332    6.7407    6.9327    4.8937   18.61 9
        6         5 min            1%        21      43.4      0.86   19.8202   19.8094    8.4135     8.349    5.3403   24.2821
        6         5 min            1%        22      43.4      0.86   19.8343    9.8 6      8.438    8.6421    5.1647   24.3006
        6         5 min            1%        23      43.4      0.86   20.1155   20.0979    8. 671    8.6928    4.9086    24.684
        6         5 min            1%        24      43.4      0.86   19.4365   19.4178    7.8811    8.5234    5.2571   23.8595
        6         5 min            1%        25      43.4      0.86    19.427   19.4166    7.8889    8.1999    4.7379   23.8452
        6         5 min            1%        26      43.4      0.86   19.4814   19.4675    8.1479    8.3707    5.4306   23.87 9
        6         5 min            1%        27      43.4      0.86   19.5928   19.5732    8. 539     8.498    4.9371   24.0213
        6         5 min            1%        28      43.4      0.86   19.4706     9.453    8.1266    8.4313    5.0773   23.8707
        6         5 min            1%        29      43.4      0.86     20.17    20.156    8.6407    8.5387     5.584   24.7056
        6         5 min            1%        30      43.4      0.86   19.8279   19.8078    8.4038    8.6288    5.8779   24.2842
        7         1 hour           1%        21      47.3      0.87   23.5006   23.4798    9.8752    9.7883    6.4763   28.79 5
        7         1 hour           1%        22      47.3      0.87   22.3422   22.3284     8.292    9.0575    4.4071   27.4861
        7         1 hour           1%        23      47.3      0.87   22.7728   22.7504     8.992     9.6 6    5.5848   27.9333
        7         1 hour           1%        24      47.3      0.87   22.3468   22.3258    8.6784    9.1446    4.9 69   27.4855
        7         1 hour           1%        25      47.3      0.87   21.9436   21.9298    8.5057    8.7991    4.9859   27.0398
        7         1 hour           1%        26      47.3      0.87   22.2059   22.1911    8.4084    9.1402    5.4565   27.4294
        7         1 hour           1%        27      47.3      0.87   22.7542    22.737    8.9436    9.5094    5.2667   27.93 5
        7         1 hour           1%        28      47.3      0.87   22.7629   22.7495    9. 879    9.5969    5.7301   27.9301
        7         1 hour           1%        29      47.3      0.87   22.7433   22.7224    9.0931    9.5883     5.511   27.9163
        7         1 hour           1%        30      47.3      0.87   23.8459    23.825   10.0211   10.0243    6.4007   29.2128
        8       1.5 hour           1%        21      52.9      0.88   26.5437   26.5263     8.869    9.8712    4.6933   32.7749
        8       1.5 hour           1%        22      52.9      0.88   27.3681   27.3444   10.3667   10.9298    5.9015   33.6969
        8       1.5 hour           1%        23      52.9      0.88   26.1742   26.1543    8.9298    9.5936    4.9115    32.533
        8       1.5 hour           1%        24      52.9      0.88   25.8794   25.8621    9.2606    9.7368    5.3219   32.2203
        8       1.5 hour           1%        25      52.9      0.88   25.6145   25.5977    7.5272    8.3783    4.7775   31.8299
        8       1.5 hour           1%        26      52.9      0.88   27.3921   27.3771    10.057   10.7874    5.5441   33.7221
        8       1.5 hour           1%        27      52.9      0.88    26.973   26.9565    9.9574   10.5688    5.4078   33.2552
        8       1.5 hour           1%        28      52.9      0.88   26.9385   26.9182    9.8936   10.3663     5.695   33.2443
        8       1.5 hour           1%        29      52.9      0.88   27.2894   27.2668    9.6796     0.752     5.607   33.6829
        8       1.5 hour           1%        30      52.9      0.88   26.6693   26.6538   10.6823   10.7954     6.317   32.77 6
        9         2 hour           1%        21      57.1      0.89   28.7882   28.7603     8.756    9.7082    4.6449   36.0154
        9         2 hour           1%        22      57.1      0.89   28.9884   28.9703    9.4981     0.322    5.0651   36.2044
        9         2 hour           1%        23      57.1      0.89   28.5809   28.5628    8.1214    8.9247    4.9126   36.2414
        9         2 hour           1%        24      57.1      0.89   29.0942   29.07 5    8.9808   10.1338    5.3656   36.6348
        9         2 hour           1%        25      57.1      0.89   29.2727   29.2567   10.2597   11.0149    5.5777   36.4257
        9         2 hour           1%        26      57.1      0.89   28.2406   28.2142    8.4673     9.286    4.2 64   35.6223
        9         2 hour           1%        27      57.1      0.89    29.153   29.1287   10.0047   10.8586    5.1977   36.2282
        9         2 hour           1%        28      57.1      0.89   29.9104   29.8928    9. 648   10.1134      5.25   37.1537
        9         2 hour           1%        29      57.1      0.89   29.7918   29.7703   10.4087   11.2946    5.5574   36.78 9
        9         2 hour           1%        30      57.1      0.89   29.5225   29.5029   11.0873   11.7551     6. 97   36.3626
       10         3 hour           1%        21      63.6      0.89   38.3532   38.2755    11.805   12.4341    6.1433   49.1866
       10         3 hour           1%        22      63.6      0.89   36.4911   36.9058   10.0496   10.9465    4.6233   45.2373
       10         3 hour           1%        23      63.6      0.89   35.4831   35.5091    7.6881    8.5683    3.8609   45.7743
       10         3 hour           1%        24      63.6      0.89    36.324    36.582    9.0914   10.0831    4.3056     45.32
       10         3 hour           1%        25      63.6      0.89   39.5373   39.7717    9. 517   10.1104      4.19   50.3852
       10         3 hour           1%        26      63.6      0.89   40.0292    39.979   10.2493   11.5836    5.1488   50.2157
       10         3 hour           1%        27      63.6      0.89   38.4314   38.5275     9.027      9.89    4.0617   49.5047
       10         3 hour           1%        28      63.6      0.89   39.1329   38.9808    9.9181   10.9885    4.5994   49.3641
       10         3 hour           1%        29      63.6      0.89   37.7094   37.6364    8.6951    9.6369    4.1138   48.4201
       10         3 hour           1%        30      63.6      0.89   41.5726   41.5427   12.1278     13.33    5.9032   52.2808
       11       4.5 hour           1%        21      71.1      0.91   30.5906   31.25 9    6.2397    6.9433    3.0327   39.0433
       11       4.5 hour           1%        22      71.1      0.91   40.1443   40.56 9    8.6143    9.5398    3.8561   51.1975
       11       4.5 hour           1%        23      71.1      0.91   31.9068   32.6121    7. 829    7.7654      3.79    40.425
       11       4.5 hour           1%        24      71.1      0.91   32.5732   33.1075    9.5028   10.2826    4.7528   39.9565
       11       4.5 hour           1%        25      71.1      0.91   34.3938   34.9872     6.403    7.2086     2.842   43.1975
       11       4.5 hour           1%        26      71.1      0.91   38.7677   38.9717    8.1331    8.9688     3.988   48.8895
       11       4.5 hour           1%        27      71.1      0.91    35.378   35.3867    8.5407    9.3276     3.889   47.3414
       11       4.5 hour           1%        28      71.1      0.91    36.541   36.7534    7.5411    8.2082    3.5092   46.5869
       11       4.5 hour           1%        29      71.1      0.91   41.0731   41.0713   11.1716   12.0644     5.138   53.0052
       11       4.5 hour           1%        30      71.1      0.91   41. 579   41.4897   10.0415   11.3076    4.6619   52.9564
       12         6 hour           1%        21      77.3      0.94   41.6441   41.5883   11.5589   12.5412    5.7293   54.4093
       12         6 hour           1%        22      77.3      0.94   32. 598   33.0423    8.2427    8.8135     3.908   40.4531
       12         6 hour           1%        23      77.3      0.94   30. 622   30.1429    7.3181     8.038     3.864   40.8741
       12         6 hour           1%        24      77.3      0.94   29.5657   30.4009    8.2443    9.0102    3.7938   36.7414
       12         6 hour           1%        25      77.3      0.94    30.709   30.9485    8.0053    8.9339    3.5466   38.6734
       12         6 hour           1%        26      77.3      0.94   30.6287   31.1627   10. 801   10.8707    5.4892   38.0378
       12         6 hour           1%        27      77.3      0.94   30.6088   31.1142    5.4426    6.1122    2.2815   38.8321
       12         6 hour           1%        28      77.3      0.94    33.129   33.3389    7.2598    8.1961    3.2652   41.9646
       12         6 hour           1%        29      77.3      0.94   30.0652   30.4609    6.0537    6.7892     2.566   38.1246
       12         6 hour           1%        30      77.3      0.94   39.5666    39.781    8.3218    9.2753    3.7833   49.8417
       13         9 hour           1%        21      87.4      0.96   22.8382   23.4257    3.8747    4.4151    1.8018   29.4778
       13         9 hour           1%        22      87.4      0.96   22.7819   23.2581    4.8722    5.4526    2.2757   28.4995
       13         9 hour           1%        23      87.4      0.96   33.3819    33.644    9.7097   10.4704    4.7865   41.3681
       13         9 hour           1%        24      87.4      0.96   30.4008   30.6762    6.1137    6.7762     2.715   38.5609
       13         9 hour           1%        25      87.4      0.96   30.9003   31.3143    9. 012     9.702    4.8226   38.4151
       13         9 hour           1%        26      87.4      0.96      9.88   19.9351    4. 052    4.7143    1.7961   25.4714
       13         9 hour           1%        27      87.4      0.96   25.5235   25.63 5    6.1768    6.87 9    2.9793   33.5578
       13         9 hour           1%        28      87.4      0.96   29.4273   29.6421    6. 901    6.8347    2.6476   37.6551
       13         9 hour           1%        29      87.4      0.96   35.5506    35.455    7.4325    8.4027    3.3055   45.0771
       13         9 hour           1%        30      87.4      0.96   38.1708   38.16 8      9.83   10.4877    4.8387   49.8281
       14        12 hour           1%        21      95.8      0.96   31.7102    31.661    7.5353    8.31 6    3.4337   39.7003
       14        12 hour           1%        22      95.8      0.96   25.8197   26.0655    5.9059    6.4112    2.6081   34.0281
       14        12 hour           1%        23      95.8      0.96   22.1176   22.4907    4.6628    5.2022    2.1556   27.6853
       14        12 hour           1%        24      95.8      0.96   27.3438   27.6059    5.5353     6.139    2.4 58   34.6486
       14        12 hour           1%        25      95.8      0.96   36.5478   36.5626    9. 926    9.9289    4.6955    47.681
       14        12 hour           1%        26      95.8      0.96   21.6888   22.1354    3.9245     4.417    1.6246   27.8625
       14        12 hour           1%        27      95.8      0.96   25.4266   25.6146    5.5683    6.2369    2.4 97   32.6759
       14        12 hour           1%        28      95.8      0.96   35.2368   35.5997    8.0806    9.0051    3.7493   43.7584
       14        12 hour           1%        29      95.8      0.96   23.9331   24.4088    4.3645    4.8925    1.8956   30.5934
       14        12 hour           1%        30      95.8      0.96   22. 949   22.3684    5.6686    6.1927    2.8272    29.711
       15         8 hour           1%        21       109      0.97   10.8968   11.1853    2.3509    2.7026     1.074   13.7868
       15         8 hour           1%        22       109      0.97   16.0988   16.4652    3.1334    3.5722    1.3898    20.263
       15         8 hour           1%        23       109      0.97   15.4259   15.8771    3.0526    3.4588    1.3917   19.5372
       15         8 hour           1%        24       109      0.97   22.8523   23.1055    4.8349    5.4291    2.0642   28.8922
       15         8 hour           1%        25       109      0.97   21.4498   21.4829    4.8056    5.37 5    2.2804   28.1078
       15         8 hour           1%        26       109      0.97   13.3087    13.598    2.8551     3.236    1.2926   16.8937
       15         8 hour           1%        27       109      0.97   25.0062    25.422    4.9444    5.5728    2.0722   31.0087
       15         8 hour           1%        28       109      0.97   18. 099   18.4806     4.995    5.4178    2.4088   23.6777
       15         8 hour           1%        29       109      0.97   15.5172   15.8938    3. 039    3.4647     1.531   19.7286
       15         8 hour           1%        30       109      0.97   15.3038   15.7169    3.0398    3.47 6    1.3293   19.9827
       16        24 hour           1%        21       120      0.99    17.672   18.1365    3.3958    3.8677    1.4373   22.5339
       16        24 hour           1%        22       120      0.99     9.958     0.2 5    2.0208    2.3384    0.8892   13.0624
       16        24 hour           1%        23       120      0.99   16.0154   16.1563    4.0696    4.5027    1.7406   20.3611
       16        24 hour           1%        24       120      0.99   13.8814   13.9588    3.4897    3.9095    1.6436   17.6174
       16        24 hour           1%        25       120      0.99   15.9052   16.08 5    4.3668    4.7592    1.9435   20.0639
       16        24 hour           1%        26       120      0.99   16.8749    17.273    3.6853    4.0907    1.6477   21.1333
       16        24 hour           1%        27       120      0.99   18.4332   18.8298    4.0009    4.4128    1.8689    23.065
       16        24 hour           1%        28       120      0.99     8.812    9.1121    1.9904    2.2467    0.9463   11.5954
       16        24 hour           1%        29       120      0.99   16.6327     16.54    3.6983    3.9777    1.6585    21.952
       16        24 hour           1%        30       120      0.99   17.3785   17.9043    3.7347     4.242    1.9494   22.2431
       17        30 hour           1%        21       129      0.99    8.6441    8.9692    1.9669    2.2739    0.8467   11.1193
       17        30 hour           1%        22       129      0.99   20.9763   21.1703     3.909    4.4131    1.7745   27.0322
       17        30 hour           1%        23       129      0.99   11.2559    11.156    2.2924    2.5443    1.1821   14.4198
       17        30 hour           1%        24       129      0.99   11.4718   11.6188    2.3978     2.7 5    1.0764   15.3129
       17        30 hour           1%        25       129      0.99   22.8361    22.954    4.7201    5.3533    2.2543   27.6525
       17        30 hour           1%        26       129      0.99    7.9007    8.2309    1.6431    1.8804    0.7942   10.3011
       17        30 hour           1%        27       129      0.99    5. 007    5.2922     1.239    1.4655    0.6031    6.9354
       17        30 hour           1%        28       129      0.99    6.3307    6.6096     1.222    1.4711    0.6 94    8.3098
       17        30 hour           1%        29       129      0.99    14.378    14.7 5    2.7682    3.1602    1.1894     8.195
       17        30 hour           1%        30       129      0.99    7.0133    7.2599    1.3696     1.631    0.6635    9.3343
       18        36 hour           1%        21       136      0.99    5.6908    5.9852    1.2708    1.5104    0.5705    7.6334
       18        36 hour           1%        22       136      0.99    7.7651    8.0494    1.7511    2.0308    0.7779    9.9108
       18        36 hour           1%        23       136      0.99   11.3423   11.7244    2.7679    3.1152    1.1947   14.2527
       18        36 hour           1%        24       136      0.99   21.2215   21.8072    4.6432    5.1871    1.9566   25.6239
       18        36 hour           1%        25       136      0.99   10.0157   10.3996    2.3308    2.6577     0.981   13.3643
       18        36 hour           1%        26       136      0.99    8. 579    8.7064    1.9492    2.2246    0.9446   10.8875
       18        36 hour           1%        27       136      0.99    4. 921    4.4549    1.0556    1.2662    0.5 88    5.8983
       18        36 hour           1%        28       136      0.99    5.0666    5.23 6     0.994    1.2086    0.5305    6.8009
       18        36 hour           1%        29       136      0.99   32.3156   32.7642    5.9093    6.6036    2.7 95   40.4058
       18        36 hour           1%        30       136      0.99   13.5962   13.8589    2.4873    2.8588    1.1329   17.6825
       19        48 hour           1%        21       148      0.99    4.5007    4.7543    1.0742     1.298    0.5392    6.2289
       19        48 hour           1%        22       148      0.99   12.3643    12.6 5     2.685    3.0475    1.2487     5.4 6
       19        48 hour           1%        23       148      0.99   18.5059   18.5285    4.3724    4.8681    1.7403   25.0227
       19        48 hour           1%        24       148      0.99    8.7549     9.084    2.2546    2.56 9    0.9909   11.4166
       19        48 hour           1%        25       148      0.99    26.218   26.5793    5.5587    6.1714     2.486   31.4281
       19        48 hour           1%        26       148      0.99    8.0188    8.2551    1.8706    2.1476    0.9136   10.3299
       19        48 hour           1%        27       148      0.99    5.8263    5.9261    1.3922    1.6455    0.6972    7.5761
       19        48 hour           1%        28       148      0.99     6.518    6.7159      1.37    1.6274    0.6 56    8.9588
       19        48 hour           1%        29       148      0.99    5.8342    6.1289    1.3846     1.642    0.6961    7.69 5
       19        48 hour           1%        30       148      0.99   10.9515   10.7258     2.663    2.8666    1.0926   14.5838
       20        72 hour           1%        21       163      0.99    1.5855    1.7642    0. 529    0.6095    0.2819    2.5754
       20        72 hour           1%        22       163      0.99   10.0395   10.3971    2. 014    2.4374    0.9758   12.5386
       20        72 hour           1%        23       163      0.99   10.3964     0.541    2. 093    2.4121    0.8789   13.7707
       20        72 hour           1%        24       163      0.99    4.3067    4.3955    0.9895    1.1821    0.5055    5.9648
       20        72 hour           1%        25       163      0.99    1.9162    1.9778    0.5199    0.64 6    0.2785    2.84 8
       20        72 hour           1%        26       163      0.99    2.3841    2.5632    0.5045    0.7062    0.2876    3.4755
       20        72 hour           1%        27       163      0.99    5.3571    5.5989    1.0173    1.2396    0.4628    7.29 5
       20        72 hour           1%        28       163      0.99   16.4114     6.605    2.7667    3.2024    1.4236     20.49
       20        72 hour           1%        29       163      0.99   10.9228   11.0897    2.0579    2.3997    1.0071   13.4413
       20        72 hour           1%        30       163      0.99    6.7682    7.1326    1.4104    1.6547    0.6136    8.7933
       21        96 hour           1%        21       171      0.99    6.6175    6.5857    1.3425    1.4744    0.6326    8.5327
       21        96 hour           1%        22       171      0.99   21.4112   21.9183    3.7273    4.2291    1.7262   26.7039
       21        96 hour           1%        23       171      0.99     3.157    3.2734    0.8317    1.0229    0.3917    4.6879
       21        96 hour           1%        24       171      0.99   10.0934   10.44 8    2.0713    2.4044    0.9669   12.6605
       21        96 hour           1%        25       171      0.99    6.8796    6.8513    1.3587    1.4784    0.6774    8.8031
       21        96 hour           1%        26       171      0.99    1.3654    1.5417    0.4633     0.638    0.2538    2.4334
       21        96 hour           1%        27       171      0.99    5.3544    5.4251    1.0881    1.2383    0.5082     7.069
       21        96 hour           1%        28       171      0.99    5.3036    5.6324    1. 617    1.3784    0.5131    6.9582
       21        96 hour           1%        29       171      0.99    3.7625    3.8465    0.8563    1.0846    0.4755    4.8447
       21        96 hour           1%        30       171      0.99   21.8176   22.5921    4.7608    5.3257    1.9887   28.5043
       22       120 hour           1%        21       175      0.99    1.5928    1.6061    0.4286    0.6098    0.2813    2.1748
       22       120 hour           1%        22       175      0.99   12.5163   12.5255    2.5615    2.9217    1.0637   16.0473
       22       120 hour           1%        23       175      0.99   16. 824   16.4655    2.9648    3.3869    1.1709   21.0022
       22       120 hour           1%        24       175      0.99   14. 541   14.9451    2.7807    3.1708    1.1611     8.009
       22       120 hour           1%        25       175      0.99    2.4094    2.3765    0.5875    0.6603    0.3 07    3.26 9
       22       120 hour           1%        26       175      0.99    3.6662    3.6853    0.8233    0.9462    0.4662    4.9298
       22       120 hour           1%        27       175      0.99   10.3611   10.7238    2. 588    2.5006    0.9992   12.9225
       22       120 hour           1%        28       175      0.99    3.6687    3.6697     0.806    0.9021    0.4076    4.8758
       22       120 hour           1%        29       175      0.99     1.023    1.0214    0.3118    0.4059    0.1989    1.5181
       22       120 hour           1%        30       175      0.99    7.3078    7.4055    1.7787    2.0704    0.7794   10.2553
Run       Represent hydrograph
        1 dur10min  aep1tp28.out
Run       Represent hydrograph
        2 dur15min  aep1tp28.out
Run       Represent hydrograph
        3 dur20min  aep1tp27.out
Run       Represent hydrograph
        4 dur25min  aep1tp23.out
Run       Represent hydrograph
        5 dur30min  aep1tp26.out
Run       Represent hydrograph
        6 dur45min  aep1tp21.out
Run       Represent hydrograph
        7 dur1hour  aep1tp28.out
Run       Represent hydrograph
        8 dur1_5hour aep1tp28.out
Run       Represent hydrograph
        9 dur2hour  aep1tp30.out
Run       Represent hydrograph
       10 dur3hour  aep1tp28.out
Run       Represent hydrograph
       11 dur4_5hour aep1tp27.out
Run       Represent hydrograph
       12 dur6hour  aep1tp22.out
Run       Represent hydrograph
       13 dur9hour  aep1tp25.out
Run       Represent hydrograph
       14 dur12hour aep_tp22.out
Run       Represent hydrograph
       15 dur18hour aep_tp22.out
Run       Represent hydrograph
       16 dur24hour aep_tp26.out
Run       Represent hydrograph
       17 dur30hour aep_tp23.out
Run       Represent hydrograph
       18 dur36hour aep_tp25.out
Run       Represent hydrograph
       19 dur48hour aep_tp24.out
Run       Represent hydrograph
       20 dur72hour aep_tp30.out
Run       Represent hydrograph
       21 dur96hour aep_tp21.out
Run       Represent hydrograph
       22 dur120hour aep1tp30.out

Elapsed   Run       Time      (hh.mm.s  =          0.00.13
```