ADVERTISED
PLAN

spiire

MORWELL PEAKING GENERATION FACILITY STORMWATER MANAGEMENT STRATEGY

14 AUGUST 2026

PREPARED FOR MORWELL FLEXGEN PTY LTD

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

This report has been prepared by the office of Spiire
Level 6, 414 La Trobe Street PO Box 16084 **Melbourne** Victoria 8007

Issue Date	Rev No	Authors	Checked	Approved
01/08/2025	1	G. Gallucci	T. Cousland	T. Cousland
10/09/2025	2	G. Gallucci	T. Cousland	T. Cousland
23/09/2025	3	G. Gallucci	T. Cousland	T. Cousland
05/05/2026	4	G. Gallucci	T. Cousland	T. Cousland
14/08/2026	5	G. Gallucci	T. Cousland	T. Cousland

Spiire Job Number: 322820

Citation: Spiire 2026, MORWELL PEAKING GENERATION FACILITY STORMWATER MANAGEMENT STRATEGY, Memo for MORWELL FLEXGEN PTY LTD.
Authors: G. Gallucci Spiire Australia Limited. Project Number 322820

File Name:
\\spiire.com.au\meldata\Data\32\322820\000\Water\Documents\Calculations\Reports\322820_001_UDv8_SWMS_REPORT_v3.docx

© Spiire

The information contained in this document is intended solely for the use of the client named for the purpose for which it has been prepared and no representation is made or is to be implied as being made to any third party. Other than for the exclusive use of the named client, no part of this report may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Spiire.

ADVERTISED
PLAN

TABLE OF CONTENTS

1. INTRODUCTION 3

1.1 STORMWATER MANAGEMENT OBJECTIVES 3

2. SITE CONTEXT 4

2.1 FACILITY LAYOUT 5

2.2 EXISTING TOPOGRAPHY AND LEVELS 6

2.3 CATCHMENT CONTEXT 7

2.4 1% AEP STORMWATER FLOW RATES 7

3. STORMWATER MANAGEMENT STRATEGY 8

3.1 STRATEGY OVERVIEW 8

3.2 OBJECTIVE 1: STORMWATER DETENTION AND FLOW RESTRICTION 9

3.2.1 FLOW CONTAINMENT POINT 10

3.3 OBJECTIVE 2: STORMWATER TREATMENT 10

3.4 OBJECTIVE 3: CRITICAL INFRASTRUCTURE FREEBOARD REQUIREMENTS 12

4. ONGOING ASSET MANAGEMENT 13

5. CONCLUSION 13

APPENDIX A KEY ADVICE FROM WGCMA (JULY 2025) 14

APPENDIX B ONSITE STORAGE CALCULATIONS (SWINBURNE METHOD) 17

ADVERTISED
PLAN

1. INTRODUCTION

This stormwater management strategy has been prepared for the Morwell Peaking Generation Facility. The site for the facility is located within the boundary of 454 Commercial Road, Morwell. This report presents:

- the objectives for the strategy
- the site and catchment layout
- the stormwater management strategy
- systems for the ongoing management of the proposed assets

This stormwater management strategy has been prepared to support the planning permit application process for the development of this facility.

1.1 STORMWATER MANAGEMENT OBJECTIVES

The key objectives of this strategy are consistent with the stormwater management requirements established by the *Infrastructure Design Manual* and adopted by the City of Latrobe. The objectives include:

- **Objective 1:** Limit the impact of increased stormwater runoff (restrict 1% AEP outflows to pre-development flow rates).
- **Objective 2:** Remove pollutants from stormwater flows (to meet the water quality objectives established by the *Urban Stormwater Best Practice Environmental Guidelines [BPEM]*). The BPEM treatment standard objectives are to reduce:
  - Gross pollutants (GP) by 70%
  - Total suspended solids (TSS) by 80%
  - Total phosphorus (TP) by 45%
  - Total nitrogen (TN) by 45%
- **Objective 3:** Provide sufficient freeboard for critical infrastructure.

ADVERTISED
PLAN

2. SITE CONTEXT

Figure 1 shows the proposed site for the facility, located within the boundary of 454 Commercial Road. The site is undeveloped, rural, and vegetated, with a flat topography. The site is accessible via a private access road from Commercial Road. Spiire understands that the developer of the site also owns the property.

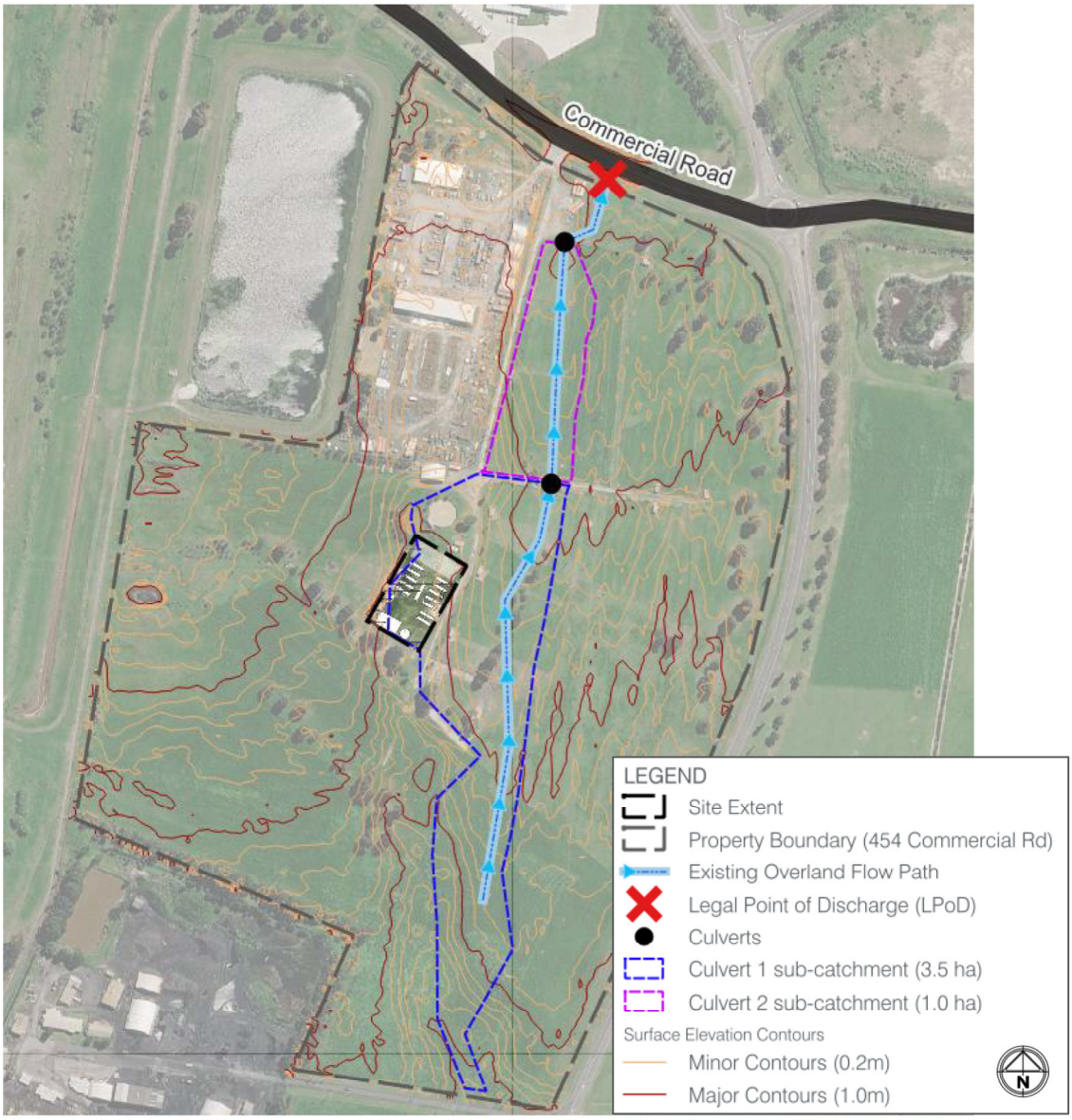


Figure 1: The layout of the proposed site, key catchments, and stormwater management features.

ADVERTISED
PLAN

2.1 FACILITY LAYOUT

Figure 2 presents the proposed layout of the facility. The facility features a series of disconnected hardstand areas, primarily being the footings of the packaged generator units, MV Switchroom, HV Transformer, fuel storage, an amenities maintenance store and minor ancillary areas. Vehicle access, parking and turning areas and minor areas onsite will have crushed rock surface treatment (or will remain as per current conditions).

The remaining extent of the site (unoccupied areas) will be maintained in its current state, as a grassed surface. The total site area – including the fenced compound area, the loading zone, and the turning circle – is 0.46 ha.

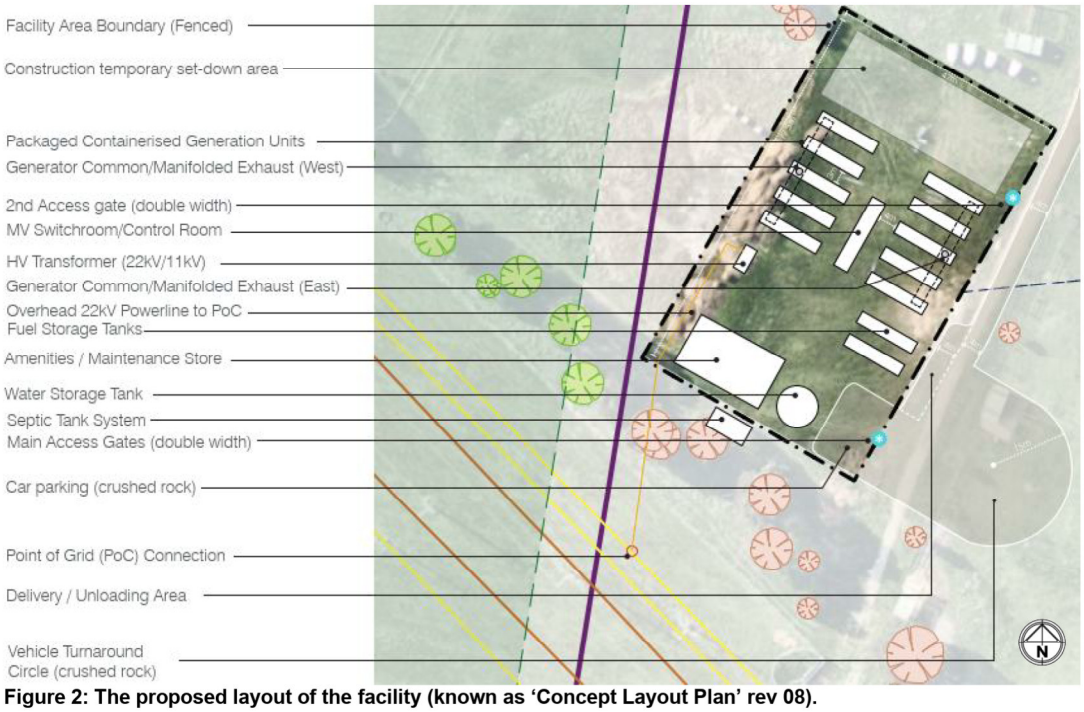


Figure 2: The proposed layout of the facility (known as 'Concept Layout Plan' rev 08).

Table 2 summarises the impervious areas of the facility. Table 2 summarises the land-use breakdown of the facility.

Table 1: The impervious areas of the facility.

Asset	Units	Area (m^2)	FI (%)	Imp. Area (m^2)
Packaged Gensets	10	50.4	100	504
Fuel Storage	2	30.5	100	61
Switchroom / Control Room	1	69	100	69
Transformer	1	26	100	26
Water Tank	1	50.3	100	50
Amenities / Maintenance Store	1	200	100	200
Parking, loading, and turning areas (crushed rock surface)	n/a	1200	50	600
Total Impervious Area	*n/a*	*n/a*	*n/a*	*1510*

ADVERTISED PLAN

Table 2: The land-use breakdown of the facility

Land-use / Surface type	Area (m^2)	FI (%)
Hardstand areas	910	100
Unoccupied areas	2510	0
Trafficable / crushed rock areas	1200	50
Total	*4620*	*33*

2.2 EXISTING TOPOGRAPHY AND LEVELS

Figure 3 presents the existing topography of the site and adjoining areas. Most of the site is relatively flat or grades to the east. The area proposed for the 'vehicle turnaround bay' features the most significant grade, 1 in 40, directing runoff away from the site to the east.

Level constraints apply to the site and stormwater management strategy, with only ~1,260mm of level change between the low-point of the site and the invert level of the Culvert 1 inlet (refer to Section 2.3). This constraint has been a key consideration in developing the stormwater management strategy.



Figure 3: The topography of the site and the downstream adjoining areas to the east.

ADVERTISED PLAN

2.3 CATCHMENT CONTEXT

Figure 1 shows the stormwater catchment within which the site is located and the existing stormwater management assets that facilitate drainage of the catchment. East of the site there is a natural overland flow path that conveys sheet flows across the adjoining horse paddocks to the legal point of discharge (LPoD) at Commercial Road. The flow path features two culverts, as shown in Figure 1, that transfer flows beneath the unsealed tracks. Table 3 summarises the key features of the culverts.

Table 3: The key features of the culverts.

	Culvert 1 (PVC 225mm)	Culvert 2 (PVC 225mm)
Length (m)	5.3	15.1
Upstream IL (m AHD)	68.54	67.72
Downstream IL (m AHD)	68.48	67.68
Weir crest elevation (m AHD)	68.85	68.30

2.4 1% AEP STORMWATER FLOW RATES

Table 4 summarises the 1% AEP stormwater flow rates modelled for the site. The post-development flow rates have been modelled to account for the impacts of climate change. As directed by the West Gippsland Catchment Management Authority (WGCMA), the SSP3 (2100) climate change projections have been used.

To account for the projected impacts of climate change, a factor has been applied to the modelled rainfall intensity (which is based on historical data sets) to represent the projected increase in rainfall intensity for the SSP3 (2100) climate change scenario. The climate change factors were obtained from the ARR Data Hub.

Note that the stormwater strategy restricts post-development outflows to the pre-development flow rate. This flow restriction requires 57m^3 of onsite detention (OSD) storage capacity, calculation using the Swinburne Method (refer to Appendix B). Refer to Section 3.2 for more details.

Table 4: The 1% AEP stormwater flow rates.

1% AEP Stormwater Event	Flow rates (m^3)
Pre-development flow rate (post-development restricted flow rate)	0.040
Post-development flow rate (SSP3 2100 scenario)	0.139

ADVERTISED PLAN

3. STORMWATER MANAGEMENT STRATEGY

3.1 STRATEGY OVERVIEW

The proposed strategy detains and treats site runoff before releasing restricted outflows to the existing overland flow path, to be conveyed to the LPoD at Commercial Rd. The detention requirements (objective 1) are achieved by the proposed stormwater detention basin. The treatment requirements (objective 2) are achieved by the proposed outlet swale. Figure 4 shows the layout of the proposed strategy and its stormwater management assets. Table 5 presents a summary of the proposed assets.



Figure 4: Layout of the proposed stormwater management strategy

ADVERTISED PLAN

ADVERTISED
PLAN

Table 5: Key features of the proposed stormwater management strategy.

Feature	Comments
Detention Basin	Provides the required onsite detention (OSD) capacity (57m^3). Indicative extent shown (based on 1 in 5 batter grades). The detention basin is entirely in cut. Base invert level is 69.3m AHD, with the proposed 1% AEP flood level 69.44 m AHD. The indicative design is subject to changes at the detailed design stage. Refer to Section 3.2 for more details.
Outlet Swale	Provides the required stormwater treatment. Refer to Section 3.3 for more details.
Catch Drain and basin inlet	Receives site runoff (including from the vehicle areas) and conveys stormwater flows to the detention basin. Note that the basin inlet culvert needs to be trafficable for the vehicles expected to use the access road. To be designed at later design stages.
Basin Outlet Culvert	Restricts outflows from the basin to the pre-development flow rate. The culvert is to be designed at later design stages.

Site runoff will be conveyed to a catch drain, located between the site and the access road. The catch drain will outlet to the detention basin, sized to store the 1% AEP stormwater flows (modelled based on the 2100 SSP3 climate change projections). Outflows from the detention basin are restricted to the pre-development 1% AEP flow rate and discharged to the outlet swale via the culvert.

Note that the site itself requires minor regrading to ensure that all site runoff is conveyed to the catch drain. This minor regrade will require up to ~100mm of fill and cut in various locations.

The access road and vehicle turnaround bay will also require fill and regrading to convey runoff to the catch drain. This regrade will likely require up to ~800-1000mm of fill in some sections.

Note that this stormwater management strategy has been developed in consultation with West Gippsland Catchment Management Authority (WGCMA). The advice from WGCMA informed the analysis of local flood conditions and the required infrastructure freeboard – refer to Section 3.4.

3.2 OBJECTIVE 1: STORMWATER DETENTION AND FLOW RESTRICTION

The strategy restricts outflows to the pre-development flow rate, ensuring that increased runoff from the site doesn't impact downstream environments and assets. The flow restriction occurs at the outlet of the detention basin.

Table 6 summarises the key parameters of the indicative design presented in this report. Note that the design may be subject to change at the detailed design stage.

Table 6: The key parameters of the indicative design for the detention basin

Design feature	Parameter	Comments
Invert Level	96.30 m AHD	Invert is constrained due to lack of fall to LPoD
1% AEP water level	96.44 m AHD	Based on the modelled stormwater flow rates in Table 4 and the OSD modelling presented in Appendix B. Terrain design of Basin performed in 12d terrain modelling software.
Batter grade	1 in 5	Batter grade selected to enable maintenance using a ride-on mower.
Total Excavation	160 m^3	Basin is entirely in cut with no fill proposed. Basin cut depth relatively shallow (approx. 250mm average) given lack of fall to the LPoD/Culvert 1

Groundwater conditions will be investigated for the detailed design stage to confirm any potential impacts due to groundwater. However, given the site is at a local high-point, it is considered unlikely that groundwater conditions will impact the strategy.

3.2.1 FLOW CONTAINMENT POINT

At a later design stage, a *Firewater Containment Plan* will be produced to ensure the site complies with applicable EPA and CFA requirements. To enable firewater containment within the property, it is possible to install a flow control device at the detention basin outlet. This containment strategy will be one of the design options investigated when the *Firewater Containment Plan* is developed. Advice from a fire risk assessment specialist indicates that a firewater containment volume of 36 kL ($36m^3$) is sufficient and subject to final FRV review and endorsement.

If firewater containment is to occur in the detention basin, excavation and suitable disposal of the upper soil strata of the detention basin (and the catch drain) would be required following a firewater event.

3.3 OBJECTIVE 2: STORMWATER TREATMENT

The proposed swale achieves the required stormwater treatment. The alignment of the swale follows the north-south access road and east-west access road, discharging flows at Culvert 1 – as shown in Figure 4. Table 7 summarises the key parameters of the indicative design presented in this report. Note that the design may be subject to change at the detailed design stage.

Table 7: The key parameters of the indicative design for the outlet swale.

Design feature	Parameter	Comments
Length	120 m	Refer to alignment in Figure
Base Width	0.8 m	The control factor is stormwater treatment, not flow capacity.
Top Width	2.8 m	The control factor is the batter grade.
Batter Grade	1 in 5	Batter grade selected to enable maintenance using a ride-on mower.
Bed Slope	1 in 250	The maximum slope feasible given the downstream and upstream level constraints.

The treatment efficacy was modelled using stormwater management software, MUSIC, developed by eWater. The model uses the historical rainfall data set for East Sale provided by eWater, which represents comparable rainfall conditions to Morwell.

Figure 5 presents the configuration of the model network. Figure 6 presents the model parameters of the swale. Table 4 presents the results of the MUSIC model, demonstrating that the strategy achieves BPEM treatment standards.

ADVERTISED
PLAN

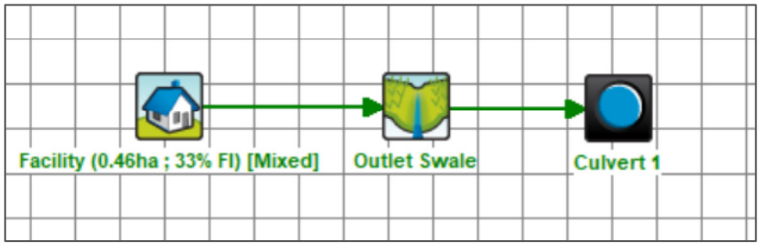


Figure 5: The configuration of the model network.

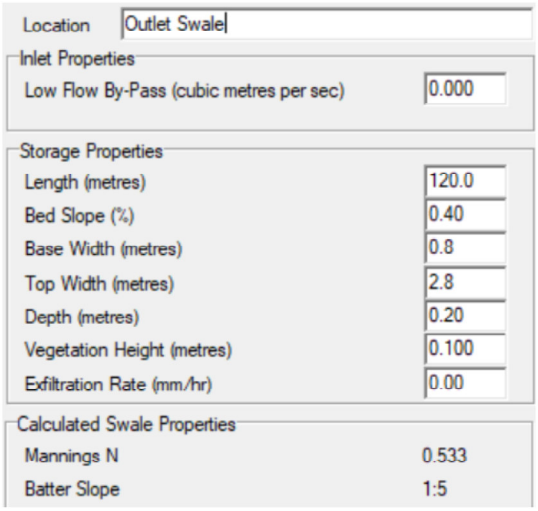


Figure 6: The model parameters of the outlet swale.

Table 8: The MUSIC modelling results.

Pollutant	Sources	Residual Load	Reduction (%)	BPEM Requirement	BPEM Achieved
Gross pollutants (kg/yr)	35.3	0.0	100	>70%	Yes
TSS (kg/yr)	146	10.7	92.7	>80%	Yes
TP (kg/yr)	0.30	0.01	67.1	>45%	Yes
TN (kg/yr)	2.14	1.17	45.5	>45%	Yes

ADVERTISED PLAN

3.4 OBJECTIVE 3: CRITICAL INFRASTRUCTURE FREEBOARD REQUIREMENTS

Figure 7 shows the 1% AEP flood modelling results obtained from the West Gippsland Catchment Management Authority (WGCMA). The proposed site is located beyond the 1% AEP flood footprint. The local 1% AEP flood level is 69.1 m AHD, as confirmed by WGCMA (refer to Appendix A)

WGCMA have advised that this stormwater strategy needs to address the projected impacts of climate change, as per clause 13.01-1S of Planning Policy Framework. At the time this strategy was developed, the CMA was yet to complete the updated flood modelling for their nominated climate change scenario (2100 SSP3).

For this application, the CMA has agreed to waive the standard requirement for the applicant to conduct their own climate change flood modelling to inform the strategy. Instead, the CMA has advised that we can address the impacts of climate change by increasing the (1% AEP) freeboard for critical infrastructure from 300mm to 600mm. Refer to Appendix A for the email correspondence records with WGCMA.

The 1% AEP flood level applicable to the site form the upstream catchments is 69.1 m AHD. The conceptual design flood level within the proposed detention basin is set at 69.44 m AHD (SSP3 2100). Accordingly, the level of all critical infrastructure must be at least 69.7 m AHD to satisfy CMA requirements, and 69.74 m AHD to obtain 300mm freeboard above the detention basin. No raised pads are required for any critical infrastructure on the site, since the site elevation exceeds 69.74 m AHD.

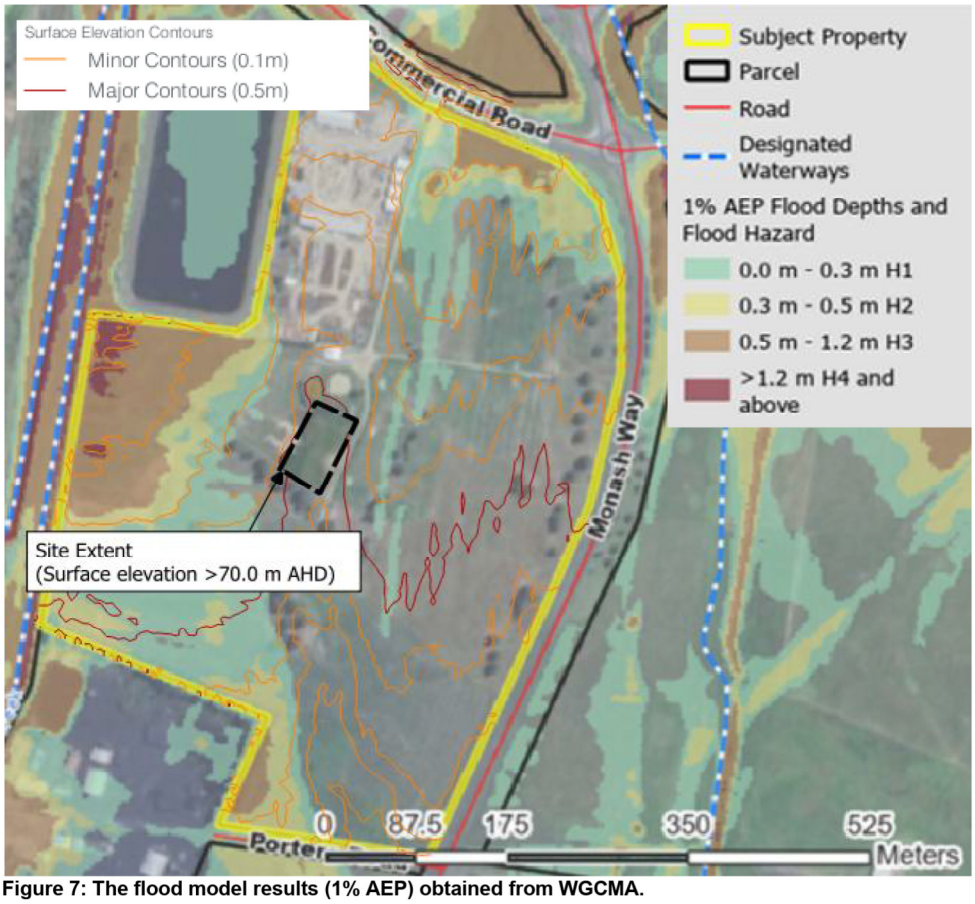


Figure 7: The flood model results (1% AEP) obtained from WGCMA.

ADVERTISED
PLAN

ADVERTISED
PLAN

4. ONGOING ASSET MANAGEMENT

To ensure the stormwater management strategy services the facility indefinitely, the proposed assets will be formalised in the property title, protecting the assets from design alterations and impacts that compromise the stormwater management strategy. The exact method by which the assets will be formalised in the property title will be confirmed as the project commences further through the application and permit processes.

The proposed assets will also be managed as per a maintenance plan, to be executed by the operators of the facility. Table 9 presents high-level maintenance guidance for the maintenance plan, which will be further detailed at the detailed design stage.

Table 9: High level guidance for the maintenance requirements.

Asset	Freq.	Maintenance Works
Detention Basin	3 months	- Inspection of civil components. Conduct required actions. Ensure free draining outlet. - Mow the grassed surface and remove clippings (to prevent downstream build-up and blockages)
Basin Outlet Culvert	3 months	Inspection of civil components. Conduct required actions. Ensure free draining outlet.
Outlet Swale	3 months	- Mow the grassed surface and remove clippings (to prevent downstream build-up and blockages)
Catch Drain	3 months	- Mow the grassed surface and remove clippings (to prevent downstream build-up and blockages)

5. CONCLUSION

This stormwater management strategy has been developed to support the planning permit application process for this facility. The strategy is consistent with the stormwater management requirements established by the *Infrastructure Design Manual*, achieving the following key objectives:

- **Objective 1:** Limit the impact of increased stormwater runoff (restrict 1% AEP outflows to pre-development flow rates).
- **Objective 2:** Remove pollutants from stormwater flows (to meet the water quality objectives established by the *Urban Stormwater Best Practice Environmental Guidelines [BPEM]*).
- **Objective 3:** Provide sufficient freeboard for critical infrastructure during 1% AEP stormwater events.

The maintenance plan for the proposed assets will be further developed as part of the detailed design stage, and execution of the maintenance plan will the responsibility of the facility operators.

To ensure ongoing viability of the strategy and the management of the proposed assets, the assets will be formalised in the property title.

Finally, it is understood that any liquids (e.g. fuel, coolant, engine oil) stored onsite will be appropriately separated from stormwater and managed as per the requirements of the *EPA Victoria Liquid Storage and Handling Guidelines* and CFA Victoria. It is understood the requisite management plans will be detailed in other site management plans (for instance, Site Environmental Management Plans).

ADVERTISED
PLAN

APPENDIX A

KEY ADVICE FROM WGCMA (JULY 2025)

From: [redacted]
Sent: Wednesday, 9 July 2025 3:45 PM
To: CMA Planning <planning@wgcma.vic.gov.au>; [redacted]
Cc: [redacted]
Subject: WGCMA-F-2024-00847 454 COMMERCIAL ROAD MORWELL VIC 3840

OFFICIAL

Thanks for the meeting, [redacted]

My notes from the meeting are as follows. Let me know if there is anything I have got wrong or missed.

- [redacted] has a copy of the Waterhole Creek Flood Study results from earlier this year from Latrobe City. These results are slightly more conservative, (but generally within 0.1 metres of) the latest draft results for this area. So, [redacted] fine to continue using the results he has in his maps. The applicable flood level for the development site is 69.1 metres AHD (not including freeboard).
- From the plans I have seen, the proposed development site is elevated well above the flood level and generally above the Nominal Flood Protection Level (discussed further down).
- Since the last correspondence earlier this year, the West Gippsland Catchment Management Authority is required by clause 13.01-1S of the Planning Policy Framework to assess development proposals while considering the future impacts of climate change. Climate change is expected to increase rainfall intensity which will likely increase the frequency and severity of flood events. In April this year, a position was agreed upon by all CMA's at a CEO level to asses development against year 2100 SSP3 climate change.
- The only flood mapping available in this area is for current climate 1 in 100 year. Generally, the Authority would require the applicant to provide their own flood study for climate change. However, given the proposed location of the development, the Authority is willing waive this requirement, instead requiring an additional 0.3 metre freeboard as an additional safety margin. This brings to the total freeboard up to 0.6 metres and level to **set all critical infrastructure above is 69.7 m AHD (referred to as the Nominal Flood Protection Level).**
- I mentioned potentially waiving the floor level requirement for storage sheds, provided they are not too big, don't store anything sensitive and aren't within the current flood extent.
- Amendment VC154 to the Victoria Planning Provisions (VPP) extends the previous stormwater management requirements for residential subdivision and apartment developments to include all commercial and **industrial** subdivisions and developments, all public use developments and all residential multi-dwelling developments, as outlined in the VC154 advisory note.
- The applicant must demonstrate (e.g. concept design using Model for Urban Stormwater Improvement Conceptualisation (MUSIC)) that the stormwater discharge is treated to meet the objectives set out in the Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO, 1999). These objectives are as follows:
    - 80 per cent retention of the typical urban annual load for suspended solids (SS).
    - 45 per cent retention of the typical urban annual load for total phosphorus (TP).
    - 45 per cent retention of the typical urban annual load for total nitrogen (TN).
    - 70 per cent retention of the typical urban annual load for litter.
    - Maintain flow discharges for the 1.5-year Average Recurrence Interval (ARI) at pre-development levels.
- This could be achieved by a vegetated swale or proprietary stormwater system. Given the small impervious footprint proposed and the large area within the site availible, this should be easily achieved.
- [redacted] will likely be in touch at some point with preliminary stormwater treatment concepts for us to comment on.
- WGCMA will receive referral from EPA and DTP at some point in the next 3-5 months. Probably separate referrals.

ADVERTISED
PLAN

Kind regards,

[redacted]
Statutory Floodplain and Data Management Engineer – West Gippsland Catchment Management Authority

PO Box 1374 Traralgon VIC 3844
T: [redacted]

West Gippsland
Catchment Management Authority

Sign up to our Catchment Snapshot Newsletter



We acknowledge and pay our respects to the Traditional Owners of the region, the Gunaikurnai, the Bunurong, the Boonwurrung and the Wurundjeri Peoples and pay respects to Elders, past, present and emerging

ADVERTISED PLAN

APPENDIX B

ONSITE STORAGE CALCULATIONS (SWINBURNE METHOD)

ADVERTISED
PLAN

spiire

On-Site Storage Calculations

Calculation in accordance with Swinburne Institute of Technology 1987

Project No.:	322820.00
Designed:	G. Gallucci
Date:	30/07/2026

BOM Webesite: http://www.bom.gov.au/water/designRainfalls/revised-ifd/

Rainfall Data Coordingates & Information

Latitude	-38.24982
Longitude	146.42324

Input data from calcs/external source
Calculated data

Annual Exceedance Probability (%)

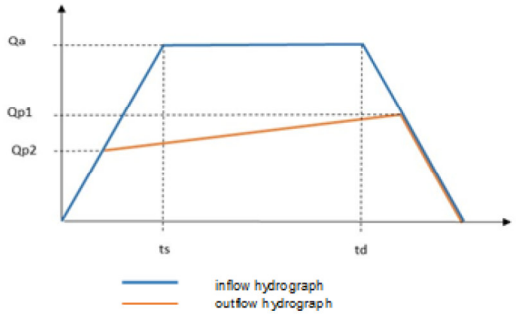
AEP Coefficients	63%	50%	20%	10%	5%	2%	1%
C0	0.30980644	0.44407862	0.79540938	0.9927942	1.1640431	1.3661895	1.5063937
C1	0.72443974	0.71621519	0.6986081	0.6899208	0.68248445	0.64267021	0.60392731
C2	0.08511776	0.09224257	0.10630956	0.1127015	0.11801026	0.16217987	0.20679405
C3	-0.07261583	-0.07409015	-0.07613919	-0.076655	-0.0769631	-0.09417965	-0.11254282
C4	0.01518002	0.0151077	0.01459685	0.014185	0.01378889	0.01677343	0.02020578
C5	-0.00134388	-0.00130768	-0.00118215	-0.001097	-0.0010174	-0.00125238	-0.00154967
C6	4.36E-05	4.15E-05	3.46E-05	3.01E-05	2.58E-05	3.26E-05	4.23E-05

Urban Frequency Factor

AEP %	ARI (years)	F_y	Cx
63%	1	0.8	$C_{63\%}$
50%	2	0.85	$C_{50\%}$
20%	4.48	0.95	$C_{20\%}$
10%	10	1	$C_{10\%}$
5%	20	1.05	$C_{5\%}$
2%	50	1.15	$C_{2\%}$
1%	100	1.2	$C_{1\%}$

Frequency Factor

AEP (%)	C0	C1	C2	C3	C4	C5	C6	F_y
1%	1.506394	0.60392731	0.20679405	-0.11254282	0.0202058	-0.0015497	4.2299E-05	1.2



Qa Peak inflow for design storm. (m3/s) (Calculated for a given ts)
Qp1 Peak permitted controlled outflow to drainage system (m3/s)
Qp2 Effectively starting outflow before pressure builds up in the detention (ie the capacity of the outfall drain running full without head) (m3/s)
Could use Colebrook-white for preffered pipe size as a starting point
ts Site time of concentration (usually 6 mins for a small sub-division - adopt urban tc otherwise)
td Duration of storm (mins) before assumed hydrograph begins to recede
Vs Volume of on site storage needed (cubic metres)
A Area of catchment (ha)
NOTE: Volume calculation has been developed and recommended for catchments up to 8 ha; Use with caution above this area.
C1% Coefficient of runoff (e.g. for 1% AEP)
I Intensity (design year (AEP) corresponding to td)

I_{AEP}	Fraction Impervious (f)	C1%	A (ha)	Ae (ha)	Qa (m^3/s)	Qp1 (m^3/s)	Qp2 (m^3/s)	ts (min)	td (min)	Vs (m^3)	Check
269.196	0.33	0.463	0.46	0.213	0.159	0.040	0.020	15.00	6.00	24.0	
254.524	0.33	0.463	0.46	0.213	0.150	0.040	0.020	15.00	7.000	28.4	More Storage
241.570	0.33	0.463	0.46	0.213	0.143	0.040	0.020	15.00	8.000	32.2	More Storage
230.022	0.33	0.463	0.46	0.213	0.136	0.040	0.020	15.00	9.000	35.5	More Storage

ADVERTISED PLAN

219.647	0.33	0.463	0.46	0.213	0.130	0.040	0.020	15.00	10.000	38.4	More Storage
210.267	0.33	0.463	0.46	0.213	0.124	0.040	0.020	15.00	11.000	41.0	More Storage
201.738	0.33	0.463	0.46	0.213	0.119	0.040	0.020	15.00	12.000	43.3	More Storage
193.946	0.33	0.463	0.46	0.213	0.115	0.040	0.020	15.00	13.000	45.3	More Storage
186.796	0.33	0.463	0.46	0.213	0.110	0.040	0.020	15.00	14.000	47.1	More Storage
180.209	0.33	0.463	0.46	0.213	0.107	0.040	0.020	15.00	15.000	48.6	More Storage
174.120	0.33	0.463	0.46	0.213	0.103	0.040	0.020	15.00	16.000	50.0	More Storage
168.472	0.33	0.463	0.46	0.213	0.100	0.040	0.020	15.00	17.000	51.2	More Storage
163.219	0.33	0.463	0.46	0.213	0.096	0.040	0.020	15.00	18.000	52.3	More Storage
158.318	0.33	0.463	0.46	0.213	0.094	0.040	0.020	15.00	19.000	53.2	More Storage
153.734	0.33	0.463	0.46	0.213	0.091	0.040	0.020	15.00	20.000	54.0	More Storage
149.438	0.33	0.463	0.46	0.213	0.088	0.040	0.020	15.00	21.000	54.7	More Storage
145.402	0.33	0.463	0.46	0.213	0.086	0.040	0.020	15.00	22.000	55.2	More Storage
141.602	0.33	0.463	0.46	0.213	0.084	0.040	0.020	15.00	23.000	55.7	More Storage
138.018	0.33	0.463	0.46	0.213	0.082	0.040	0.020	15.00	24.000	56.1	More Storage
134.631	0.33	0.463	0.46	0.213	0.080	0.040	0.020	15.00	25.000	56.4	More Storage
131.426	0.33	0.463	0.46	0.213	0.078	0.040	0.020	15.00	26.000	56.7	More Storage
128.387	0.33	0.463	0.46	0.213	0.076	0.040	0.020	15.00	27.000	56.8	More Storage
125.502	0.33	0.463	0.46	0.213	0.074	0.040	0.020	15.00	28.000	56.9	More Storage
122.759	0.33	0.463	0.46	0.213	0.073	0.040	0.020	15.00	29.000	57.0	More Storage
120.147	0.33	0.463	0.46	0.213	0.071	0.040	0.020	15.00	30.000	57.0	Okay
117.658	0.33	0.463	0.46	0.213	0.070	0.040	0.020	15.00	31.000	56.9	Okay
115.282	0.33	0.463	0.46	0.213	0.068	0.040	0.020	15.00	32.000	56.8	Okay
113.012	0.33	0.463	0.46	0.213	0.067	0.040	0.020	15.00	33.000	56.6	Okay

ADVERTISED
PLAN