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Proposed Residential Village 27 Eagle Point Road, Eagle Point

Town Planning Report -Stormwater Management Strategy



Prepared for: Spring LP OpCo Pty Ltd

Prepared by: Crossco Consulting Pty Ltd PO Box 858 Bairnsdale Vic 3875

ENDINEERING & ENVIRONMENTAL CONSULTANT

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Document revision

Version	Date	Prepared by	Comments			
DRAFT	24/09/2024	Crossco	Distributed for Peer Review			
Rev A	15/10/2024	Crossco	Distributed to C&S and Client			

Notice:

This Stormwater Management Strategy:

- 1. Has been prepared by Crossco Consulting Pty Ltd for Spring LP OpCo Pty Ltd.
- 2. Is for the use of LP OpCo Pty Ltd in seeking planning approval for the proposed residential village development at 27 Eagle Point Road, Eagle Point.
- 3. Is for the use of East Gippsland Shire in assessing a planning permit application for a residential village development at 27 Eagle Point Road, Eagle Point.
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Abbreviations, Descriptions and Definitions

The following table lists some common abbreviations and drainage system descriptions and their definitions which may be referred to in this report.

Abbreviation / Descriptions	Definition					
AHD - Australian	Common base for all survey levels in Australia. Height in metres above mean sea					
Height Datum	level.					
ARI - Average	The average length of time in years between two floods of a given size or larger. A					
Recurrence Interval.	100 Year ARI event has a 1 in 100 chances of occurring in any one year.					
AEP – Annual	The chance of a storm (flow) of that magnitude (or larger) occurring in a given year.					
Exceedance	$AER = 1 - \frac{1}{12} = 10.420(AER = 5)(4.5)$					
Probability	AEF - 1 - C ARI . 1.0. 10.13% AEF = 3 Tedi AKI					
BPEMG	Best Practice Environmental Management Guidelines. See CSIRO (1999)					
EY – Exceedances per	The amount of times a storm (flow) of that magnitude is expected to be exceeded					
year	per year. i.e. 4 EY = 3 Month ARI					
m³/s -cubic	Unit of discharge usually referring to a design flood flow along a stormwater					
metre/second	conveyance system					
	Hydrologic computer program used to calculate stormwater pollutant generation in					
MUSIC	a catchment and the amount of treatment which can be attributed to the WSUD					
	elements placed in that catchment					
MWC / MW	Melbourne Water Corporation					
Retarding basin	A flood storage dam which is normally empty. May contain a lake or wetland in its					
	base					
NWL - Normal Water	Water level of a wetland or pond defined by the lowest invert level of the outlet					
Level	structure					
NSL – Natural Surface Level	The surface level of the natural (existing) surface before works.					
	Hydrologic computer program used to calculate the design flood flow (in m ³ /s)					
RORB	along a stormwater conveyance system (e.g. waterway)					
Sedimentation basin	A pond that is used to remove coarse sediments from inflowing water mainly by					
(Sediment pond)	settlement processes.					
TED	The top level of water stored for treatment within a wetland before bypass occurs					
TSS	Total Suspended Solids – a term for a particular stormwater pollutant parameter					
ТР	Total Phosphorus – a term for a particular stormwater pollutant parameter					
TN	Total Nitrogen – a term for a particular stormwater pollutant parameter					
	Term used to describe the design of drainage systems used to:					
WSUD - Water	 Convey stormwater safely 					
Sensitive Urban	 Retain stormwater pollutants 					
Design	 Enhance local ecology 					
	 Enhance the local landscape and social amenity of built areas 					
	WSUD element which is used to collect TSS, TP and TN. Usually incorporated at					
Wetland	normal water level (NWL) below which the system is designed as shallow marsh,					
	marsh, deep marsh and open water areas.					

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1. Background

Crossco Consulting Pty Ltd has been engaged by Spring LP OpCo Pty Ltd to prepare a Stormwater Management Strategy (SWMS) which will form part of the supporting documentation submitted with a planning permit application to East Gippsland Shire Council (EGSC) for a residential village development at 27 Eagle Point Road, Eagle Point (the site).

This report and attached Crossco Drawings (Appendix 3) are based on the following information provided to Crossco:

- Site Feature survey provided by Client at Appendix 1. •
- Site layout and staging plan (Hamilton Landscape Architects Pty ltd included at Appendix • 2)

The site is subject to the East Gippsland Shire Planning Scheme and is zoned GRZ1(General Residential Zone – Schedule 1) and one overlay applies being DDO11 (Design Development Overlay – Schedule 11 Residential Development in Coastal Settlements). The site is mapped as being in a Designed Bushfire Prone area. An unnamed designed waterway crosses the south-east corner of the site.



Figure 1: Planning Scheme Mapping¹

A planning permit (476/2021/P) was issued during 2022 for a multi-lot residential subdivision at the site.

A separate Access & Servicing Strategy has been prepared.

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¹ Source: https://mapshare.vic.gov.au/mapsharevic/

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2. Purpose

This SMWS is prepared to meet the expected requirements of the in respect of Water Sensitive Urban Design (WSUD) and drainage infrastructure.

As such this SWMS provides:

- Discussion in respect of flood retardation requirements of development of the subject site,
- The concept design of major pipe alignments, overland flow paths, swales, sediment ponds,
- Bioretention systems and/or wetlands to meet current Best Practice Environmental Guidelines,
- MUSIC modelling of Water Sensitive Urban Design initiatives,
- Development of a SWMS plan (concept design plans) to clearly show:
 - o Encumbered space,
 - How the drainage system concept designs can be realistically incorporated into the site proposals,
 - Preparation of initial site plan showing building/fill levels, setbacks, expected 1% Annual Exceedance Probability (AEP) flood levels, and
 - o development setbacks.

This SWMS has been prepared understanding that diligent site assessment is required at the SWMS/concept design stage to ensure any proposed assets can physically work. The SWMS/concept design stage of a project is the most important stage of a project, because, done well, it can avoid inappropriate incorporation of assets in the future, while ensuring all EGSC and EGCMA requirements (Works On Waterway) are met going forward.

3. Proposal

27 Eagle Point Road, Eagle Point (the site) is proposed to be developed for residential village (RV) purposes. The proposed RV (refer to Appendix 2) creates 209 sites, open space, and shared facilities, delivered in 4 stages.

In addition to stormwater management infrastructure, the proposed development includes the provision of the following services which will all be constructed underground:

- Sewer Gravity
- Watermain
- Electricity
- Communications

Refer to the separate Access & Servicing Strategy report for further details.

No subdivision is proposed.

All internal services assets will remain in the ownership of the property owner including stormwater management and drainage assets.

The Crossco drawings at Appendix 3 indicatively show the layout of utility services. These are included to demonstrate that the stormwater management strategy considers the provision of services.

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4. Site Overview

4.1 Property Details



Figure 2: Site Parcels

27 Eagle Point Road (the site) comprises 3 parcels as shown on Figure 2.

Additionally, the Hoskin Street reserve abutting the site is occupied under a Crown License by the owner of the site.

4.2 Site Location

The site is within the Eagle Point township as shown in Figure 3, which provides an overview of the location of the site in relation to surrounding towns, arterial road network and waterways.



Figure 3: Locality Plan

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used for any purpose which may breach any copyright. Figure 4 and Figure 5 show the site in the context of the development and road infrastructure.



Figure 4: Aerial Overview



Figure 5: Site Aerial

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used for any purpose which may breach any copyright. As shown at Figure 6, the site and surrounding land is zoned GRZ1, with land to the south-west zoned LDRZ. Surrounding land is generally developed for residential purposes with the exception of a public hall and primary school to the north-west and Supported Residential Services facility (formerly Eagle Manor Aged Care) to the east of the primary school.



4.3 Description

At the time the site was inspected during August 2024, the site had good grass cover with no apparent soil instability. Figure 7 shows typical cover on the site.

Figure 6: Surrounding Land Zones



Figure 7: Grass Cover

The maximum elevation at the site is approximately 29m AHD to the north-west falling to:

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 9m AHD at the north-east corner adjacent to Riley Street, and
- 14m AHD at the designated waterway to the south-east corner.

Slopes across the site vary as indicated in Figure 8, and surface water sheds to the north and south to Riley Street (north-east catchment) and the designated waterway (south catchment).

The site is located adjacent to the main activity centre of Eagle Point with existing residential development surrounding, as well as the community hall and primary school.

The site has a maximum elevation of 28.5 m AHD at the north-west extent of the site and a minimum elevation of 9 m AHD at the north-east (refer to feature survey at Appendix 1 - Site Survey & Contours).

The site grades generally to the north-east and south-south, from a natural highpoint, the location of which is is indicated at Figure 8: Surface .

The site grades are classified as being "gentle slope"² and vary across the site as follows:

- from west to east at the west portion of the site of 2.5% (1V:40H).
- 10% (1V:10H) at the north-east corner of the site and 8% (1V:12.5H) at the south-east corner of the site.



Figure 8: Surface Slope & watershed

As can be observed in the aerial photographs at Figure 4 and Figure 5 there are a number of trees at the site, with the majority of the native vegetation on the to the south east, in proximity to the designated waterway.

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² VRO classification – Land degradation hazard region East Gippsland

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5. Existing Stormwater & Drainage Infrastructure

Figure 9 shows the general location of existing drainage of the site an infrastructure in proximity to the site. Further detail is provided at Appendix 3.



Figure 9: Existing Stormwater Infrastructure

5.1 On-site

There is no constructed drainage infrastructure on the site, with surface flow generally to the north-east and south east (refer to Figure 9: Existing).

A designated waterway is located at the south of the site. The constructed wetland to the west of Eagle Point Road (Eagle Bay Rise), and sediment basin & raingarden to the south (Eagle Point Landings) outfall to this waterway, which passes though the residential allotment at 4 Tait Street.

The proposed development will not impact the existing drainage infrastructure.

The south catchment of the site will continue to drain to this designated waterway.

5.2 Off-site

5.2.1 Eagle Point Road / South catchment

There is existing municipal drainage infrastructure adjacent to the site (within existing road reserves) as follows:

- Roadside table drain at Eagle Point Road (see Figure 10).

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used for any purpose which may breach any copyright. The proposed development will not impact the existing drainage infrastructure in Eagle Point Road.



Figure 10: Eagle Point Road Table Drain

5.2.2 Riley Street

Piped drain at Riley Street (refer to Figure 11), with most of Riley Street having kerb & channel. The Riley Street frontage to the site has partial kerb & channel, with the remainder having no infrastructure (Riley Street unmade) or a table drain (refer to Figure 12).

The north-east site catchment is proposed to outfall to the existing municipal infrastructure in Riley Street.



Figure 11: Riley Street drainage infrastructure

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Figure 12: West end of Riley Street - site frontage

5.2.3 Treatment and Detention

Figure 9 indicates the location of a number of off-site WSUD that are municipal drainage assets. These assets all outfall to the designated waterway to the south of the site. These assets are all considered in the proposed stormwater management solution for the proposed RV development.

<u>WLRB</u> – this WLRB was designed as part of the "D'Abaco" / "Eagle Bay Rise" residential development.



Figure 13: WLRB – D'Abaco / Eagle Bay Rise

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EPR flood storage & culvert

As outlined in the RORB model summary at Appendix 4, additional flood storage is provided downstream of the WLRB adjacent to Eagle Point Road, prior to outfalling to the east via a twin culvert as shown at



Figure 14: External catchment toward Boyd Court



Figure 15: EPR twin culvert

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Raingarden & Sediment Basin (Eagle Point Landings)

Stormwater from the external catchment to the west of Eagle Point Road discharges to a raingarden (Figure 16) and then via a swale to a sediment basin (Figure 17), and eventually to the designated waterway to the south of the site.



Figure 16: Raingarden / Culvert outfall



Figure 17: Sediment Basin (Eagle Point Landings)

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Designated Waterway

The designated waterway passes through the south-east corner of the site, and outfalls to a property at Bay Road via a series of pipes and overland flow as indicated at Figure 18.

The mapping of the designated waterway is indicated in Figure 8 and Figure 9.



Figure 18: Designated Waterway outfall – site east boundary

6. Reference Materials

6.1 Background Reports, Information and Designs

The formulation of the stormwater management design described in this report has utilised information from the following sources relating to designs, studies and/or current works in the catchments/sites surrounding the Subject Site. Information obtained from each source below is described in more detail in subsequent parts of this report where required.

- Site survey information (refer to Appendix 1)
- Proposed site layout (refer to Appendix 2)
- Local Government Infrastructure Design Association Infrastructure Design Manual, Version 5.4, September 2022.
- Melbourne Water "MUSIC" (Model for Urban Stormwater Improvement Conceptualisation) Guideline, May 2022 (WMC MUSIC Guidelines).
- East Gippsland Planning Scheme

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The Clearwater / DELWP online navigator tool (<u>https://clearwatervic.com.au/resource-library/toolkits/stormwater-planning/</u>) has been used to determine the relevant clauses of the planning scheme. No subdivision is proposed therefore the applicable <u>stormwater</u> provisions are:

Buildings & Works:

- Cl 53.18-5 Stormwater management objectives for buildings and works and associated standards
- Cl 53.18-6 Site Management objectives and associated standards

These clauses and how the proposal responds to each requirement are addressed further below, along with consideration of other documents that inform the long-term planning of the precinct.

6.2 Other Planning Documents

The following planning documents are expected to be considered by Council in accordance with Cl 65.01.

6.2.1 Urban Design Framework 2007 – Eagle Point

The UDF 2007 (Amendment C68) recognises the importance of stormwater management with the following key strategies being adopted:

Objective 3: To protect and enhance the natural environment of the area, including the Lakes System. Strategies: 3.1 Improve stormwater drainage systems to minimise adverse impacts on lake water quality. 3.2 Ensure all new subdivisions and development incorporate satisfactory waste disposal and storm water management with the utilisation of water sensitive urban design techniques.

The strategies are consistent with all other provisions of the planning scheme and the IDM.

The UDF is referenced in the DDO11 ordinance of the East Gippsland Planning Scheme.

6.2.2 Eagle Point Draft Structure Plan Volume 1 (August 2018-A)

The subject site is within the Eagle Point Draft Structure Plan study area.

The Eagle Point Structure Plan (EPSP) was adopted by EGSC in August 2019 (Agenda Item 5.2.1). While the Structure Plan has not been incorporated into the East Gippsland Planning Scheme and no amendment is on the public record as having been prepared, the position of Council planning staff in respect of the status of the Structure Plan is confirmed below:

Whilst the EPSP has not yet been incorporated into the East Gippsland Planning Scheme, Section 60 of the Planning and Environment Act 1987 requires decision makers to '..consider any other strategic plan, policy statement, code or guideline which has been adopted by a Minister, government department, public authority or municipal council;' The EPSP represents Council's view to protect and enhance the neighbourhood character in this part of Eagle Point and introduce connectivity within this precinct. The plan resulted from significant consultation and has been adopted by Council. It is

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used for any purpose which may breach any copyright. considered appropriate and entirely reasonable to consider the strategic intent provided within the adopted EPSP.³

Drainage and stormwater management proposed in the Structure Plan at the subject site is illustrated at Figure 19.



Figure 19: Eagle Point Structure Plan⁴

6.2.3 Surface Water Management Strategy, August 2011

This report was prepared by "Waterway Management Consultants" (Neil Craigie) for the development of 24 Eagle Point Road and proposed the development of a wetland retarding basins (WLRB) and provided for future development to the south. The concepts proposed in this strategy have been adopted for the subject proposal.

7. Project Objectives

7.1 Flood Storage Requirements

Commonly, to meet the requirements of the Local Government Infrastructure Design Association (LGIDA) Infrastructure Design Manual (IDM) flood retardation is required for new developments. Section 18.1 of the IDM states that:

To protect property and Infrastructure from flooding occurring from a nominated rainfall event by the provision of retarding basins.

Flood storage has been proposed in accordance with the IDM. It is noted that the site outfalls to the north-east (Riley Street) and south (designated waterway).

The RORB model output is provided at Appendix 5.

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³ East Gippsland Shire Council Meeting Agenda – 7 July 2020, Item 5.1.2

⁴ Eagle Point Draft Structure Plan Volume 1 (August 2018-A), Part Figure 5.

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<u>Key criteria</u> –

Flood storage is proposed to ensure no downstream impact.

7.2 Regional Flood Protection and Climate Change Implications

7.2.1 Overland Flow

Climate change implications for rainfall events have been considered consistent with ARR 2019. Due to the topography of the site it is not prone to flooding from overland flows, with the exception of the designated waterway to the south-east.

7.2.2 Lake Flooding

The declared 1% AEP flood level is 2.0 m AHD⁵.

The 2009 Climate Change Study recommended that the "Coasts Future Program to align with the Victorian Coastal Strategy 2008 (VCS) policy of planning for not less than 0.8 m sea level rise by 2100".

Given the elevation of the site there is no risk due to lake flooding including climate change and storm surge scenarios.

7.3 WSUD Objectives

Clause 53.18-5 (Standard W2) of the Victorian State Planning provisions states that urban stormwater management systems must be designed to meet current best practice management performance objectives for stormwater quality management as defined in the Best Practice Environmental Management Guidelines (**BPEMG**).

Total Suspended Solids (TSS)	80% retention of the typical urban annual load		
Total Phosphorus (TP)	45% retention of the typical urban annual load		
Total Nitrogen (TN)	45% retention of the typical urban annual load		
Litter	70% retention of typical urban annual load		
Flows	Maintain discharges for the 1.5-year Average		
	Recurrence Interval (ARI) event at pre-development		
	levels		

The BPEMG objectives for environmental management of stormwater are:

7.4 Maintenance Requirements

The design presented herein allow ensures all WSUD and drainage assets are accessible for maintenance and provides appropriate maintenance provisions, including but not limited to:

- Mowable grassed batters (maximum of 1V:5H or 20% or 11.3°)
- Provisions for low flow diversion in times of maintenance
- Space provision for appropriate maintenance access tracks

⁵ Source: EGCMA referral advice for unrelated Bay Road project, 20/09/2024.

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used for any purpose which may breach any copyright. Access is available (refer to drawings at Appendix 3) to maintain the proposed WSUD Assets, which are proposed to be privately owned and maintained.

<u>Key criteria</u> –

All stormwater assets are proposed to be privately owned and maintained.

8. Development SWMS Description

8.1 System Design Criteria

In accordance with the Infrastructure Design Manual (IDM), the proposed development is to be design based on:

- Design Storm Event
 - o Minor Systems 20% AEP
 - o Major Systems 1% AEP
- Runoff Coefficient
 - Residential Village sites site areas <300m² 0.8
 - This includes an allowance for access roads within the development.
- Provision of Stormwater Treatment
 - o 80% Retention of the typical Urban annual load for Total Suspend Solids (TSS)
 - o 45% Retention of the typical Urban annual load for Total Phosphorus (TP)
 - 45% Retention of the typical Urban annual load for Total Nitrogen (TN)
 - 70% Retention of the typical Urban annual load for Gross Pollutants

Additionally nuisance flooding from lake level rise has been considered, with all inlet levels well above the 1% AEP declared flood level of 1.8m AHD.

8.2 Assumptions & Design Development

8.2.1 Adopted Design

- Allows for no subdivision and no further development of the site.
- Modelling assumes the development to a standard residential density use (runoff coefficient 0.8 (MWC MUSIC Guidelines and Infrastructure Design Manual)
- Development should meet (where possible) the requirements of the Urban Stormwater Best Practice Environmental Management Guidelines 1999 and the Water Sensitive Urban Design Engineering Procedures 2005.
- Drainage pipe assets in areas where overland flow path enters an adjacent property are to be sized accordingly to ensure the 1% AEP gap flows are no higher than the existing 1% AEP flows.
- Stormwater / drainage assets will be retained in private ownership, managed and maintained by the owner of the subject site.
- Continued Implementation of the Surface Water Management Strategy, August 2011

<u>Key criteria</u> –

The external catchment is considered including flood storage and treatment.

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8.2.2 Alternative Design Considered

No alternative design has been considered. The proposed stormwater solution is consistent with the Structure Plan and the stormwater management solution proposed for the previously approved residential subdivision at the site (476/2021/P), which was based on the Surface Water Management Strategy, August 2011.

8.3 Catchment Management

8.3.1 External catchment

Figure 20 show the catchment identified and RORB model nodes. The upstream catchment is labelled nodes A-F, external south catchment is labelled H-J.



Figure 20: Catchment including external

Key criteria – The external catchment is considered and provided for.

8.3.2 Site Catchments

As illustrated in Figure 8 the site grades to the south and north-east.

The design catchments are consistent with the existing landform and outfall to location the locations indicated at Figure 20 being:

Location A – North-east catchment outfall Location B – South catchment outfall

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8.4 Stormwater Quality

WSUD infrastructure proposed for the site includes a combination of rainwater tanks for reuse at all sites (minimum 2000 litre plumbed into dwellings), a series of proprietary systems. The location of the proposed assets is detailed on Crossco Drawings 2955/004-011 at Appendix 3.

Stormwater treatment assets are positioned to the north-east and south of the site.

Stormwater from the Site will be collected via 20% AEP pit and pipe network with the 1% AEP flow path to be contained within the roadway which will be transferred via gravity to an overland path designed to convey a 1% AEP event, and outfall the site at:

- North-east catchment Riley Street
- South catchment designated waterway / private property interface

Stormwater generated from roof areas on sites is to be collected in rainwater tanks (2000 litre minimum capacity) on each site and used for domestic purposes in dwellings (eg. toilet & laundry).

To achieve stormwater treatment best practice the following WSUD elements have been incorporated into the design:

8.4.1 Rainwater Tanks

Rainwater tanks provide benefit by reducing the quantity of stormwater entering waterways at the same point in time. This is achieved by collecting, storing and reusing stormwater runoff from roofed surfaces. Collected stormwater can be reused to flush toilets, wash clothes, water gardens and other outside activities which can significantly reduce demand for potable water.

This domestic usage of stormwater reduces strain on stormwater drainage network, drinking water network and reduces stormwater runoff and flood peaks.

Figure 21 shows an example of a general arrangement promoted by Melbourne Water for reuse of stormwater. No disinfection of stormwater at dwellings is proposed in the subject proposal.



Figure 21: Melbourne Water Rainwater Tank Detail

Rainwater tank demands are generally assumed as per the MWC MUSIC Guidelines as per the assumptions detailed in Appendix 4.

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8.4.2 Gross Pollutant Traps

Gross Pollutant traps are structures that trap solid waste such as little and coarse sediment through a physical process. Typically, a gross pollutant trap is the primary treatment as it provides a physical screen, rapid sedimentation, and separation process for contaminants.

There are a wide variety of Gross Pollutant traps which all have a similar function which is to trap litter and sediment above 5mm in sizes which then allows this litter and sediment to be removed from the water system. This process allows large pollutants to be removed allowing for the downstream treatment of stormwater to be more effective.

Figure 22 below provides an example of a Gross Pollutant Trap – Atlan Vortceptor.



Figure 22: Gross Pollutant Trap – Atlan Vortceptor

Gross Pollutant Traps are defined as GP as per the Crossco Site Drainage Plan. Functional design sizes are as detailed in Appendix 4. In general, the Gross Pollutant traps will be positioned in a location appropriate for the site characteristics. Consistent with the best practice iterative design process, the design invert levels will be refined and documented during the detail design phase of the road and drainage network.

8.4.3 Proprietary Secondary Systems

WSUD proprietary systems are manufactured items that have been designed to reduce the footprint of WSUD and provide an ease of maintenance to asset owners. There are many proprietary systems around which mostly work as specialised filtration systems.

Figure 23 provides an example of a Proprietary secondary system – Atlan Flow Filter.

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Figure 23: Secondary Proprietary System – Atlan Flow Filter

Functional design sizes are detailed in Appendix 4. In general, the secondary proprietary system will be positioned proceeding the Gross Pollutant Trap. Consistent with the best practice iterative design process, the design invert levels will be refined and documented during the detail design phase of the road and drainage network.

8.5 Stormwater Detention

In addition to studies commissioned by Council (eg. Eagle Point Draft Structure Plan Volume 1) and in compliance with Council requirements, a RORB model has been undertaken (refer to Appendix 5 RORB Modelling Summary) using current rainfall data and developed catchment. Commonly, to meet the requirements of the Local Government Infrastructure Design Association (LGIDA) Infrastructure Design Manual (IDM) flood retardation is required for new developments. Section 19.3.4 of the IDM states that:

Council's Engineering Department may waive the requirement for on-site detention where it can be shown that there are no adverse impacts resulting from the increased rate and volume of stormwater from the development and that the level of service adopted by the Council will not be compromised.

In this case, there are downstream properties so onsite detention is proposed. The peak storage requirement is summarised at Appendix 5.

<u>Key Criteria:</u> Flood storage is proposed consistent with the peak storage outlined at Appendix 5.

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8.6 Proposed Treatment

As detailed in Appendix 4 MUSIC Modelling Summary has been undertaken to determine a practical WSUD Treatment train for the proposed development.

In summary the treatment train comprises:

- Rainwater Tanks

The proposed rainwater tanks will be connected to all dwelling roofs and be plumbed into the proposed dwelling for laundry and toilet flushing reuse.

- Gross Pollutant Traps
 Following on from the road & drainage network at each respective outfall location, a gross pollutant trap should be positioned to allow for efficient use and allow for access for maintenance purposes. In this concept an Atlan Vortceptor SVO.360 has been proposed at each outfall.
- Secondary Proprietary System
 Following on from the road & drainage network as well as the Gross Pollutant Trap (Primary Treatment) at each respective outfall location, a gross pollutant trap should be positioned to allow for efficient use and allow for access for maintenance purposes. In this concept an Atlan - Flow Filter SHS.3500/25has been proposed at each outfall.
- Detention
 Refer to RORB results summary at Appendix 5.

The MUSIC Model assumptions, descriptions and results are detailed in Appendix 4.

8.7 Staging

The development is proposed to be delivered in 4 stages as indicated at Appendix 2. Stormwater infrastructure is proposed to be completed as follows:

Stage	Stormwater Management Works Completed
Stage 1	All south catchment outfall works completed. This ensures that all works undertaken in proximity to the designed waterway are completed as part of Stage 1.
Stage 2	North-east outfall works completed.
Stage 3 & 4	Installation of treatment filters as required to meet treatment standard.

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8.8 External Works

8.8.1 South catchment

Works external to the site are proposed at the outfall of the south catchment, comprising a proposed 750 mm dia pipe through 4 Tait Street, connecting to an existing 800 mm dia pipe within 4 Tait Street (refer to Figure 24).

The proposed pipe alignment follows existing overland flow path and is consistent with previous drainage proposals. The construction method for the proposed 750mm dia pipe is proposed to be open trench and underbore.



8.8.2 North-east catchment

A new stormwater pipe is proposed to be constructed and outfall to an existing SEP in Riley Street. This external asset is proposed to become a Council stormwater asset and will be constructed within the Riley Street road reserve.

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9. Environmental Management

It is strongly recommended that compliance with EPA publication 1834 is required through <u>all</u> phases of construction works. The publication cover page and excerpt of table of contents is included at Figure 24.



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Figure 25: EPA Publication 1834 cover & ToC excerpt

10. Conclusion and Recommendations

10.1 Conclusion

This report describes and presents a proposed stormwater management solution to service the proposed 209 site Residential Village development including WSUD elements that meet best practice treatment of stormwater generated both at the site and upstream. The drainage and WSUD elements have been designed with grading (slope) and geometry considered and informed by a site-specific RORB model (refer to report at Appendix 5).

Stormwater generated at the proposed development can be managed to meet requirements.

The proposed stormwater management solution provides for Municipal stormwater generated upslope to continue to drain through the site as confirmed by the flood modelling study at Appendix 5.

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10.2 Development Standards Summary

Development standards considered in this report are summarised in Table 1.

Cl 53 Stormwater	Matter Considered
Management in	
Urban Development	
Cl 53.18-5	Standard W2 – Met
Stormwater	Best Practice guidelines recommendations are met.
management	Site layout drainage design contains stormwater onsite.
objectives for	Landscape plan (by others) integrates stormwater management with
buildings and works	landscape and habitat standards.
and associated	
standards	
Cl 53.18-6 Site	Standard W3 - Met
Management	Compliance with EPA publication 1834 is recommended through all
objectives	phases of construction.

Table 1: Development Standards Summary

10.3 Recommendations

Notwithstanding the above, this SWS is **<u>CONCEPT</u>** design only. Consistent with standard design practice, the concept design requires further development (into a functional and then detailed design) as the project becomes further advanced.

As design development advances the following is recommended:

- Refinement of staging
- Geotechnical site assessment
- Integration of electrical design including kiosk locations to provide for all infrastructure proposed
- Integration of ecological and arborist recommendations including "no-go-zones"
- Engagement with the East Gippsland Catchment Management Authority (EGCMA) regarding Works on Waterways (WoW) approval.

Any approval should be conditional upon and allow:

- progressive and iterative design development of all infrastructure elements.
- staged delivery of infrastructure.
- all stages of infrastructure construction (including dwellings) to comply with EPA publication 1834.

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Appendix

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 - SITE PLAN (WATERWAY & TPZ'S)
PARISH OF BAIRNSDALE SECTION A CROWN ALLOTMENT 36, 37 & (PART) 38 LOT 2 ON PS743267N LOTS I & 3 ON TP888557E

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PROJECT

DRAWING: HOUSE TYPE SCALE: 1:750 @ A1



36 (76%)

34 (74%)

44 (76%)

4 (9%)

4 (9%)

6 (10%)

STAGE3

STAGE4

LP TO CONFIRM	HOUSE
TYPES ACROSS	THE SITE

7 (15%)

8 (17%)

8 (14%)

47

46

58

DRAFT

25 EAGLE POINT ROAD, EAGLE POINT

F ROAD, EAGLE POINT								•
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Appendix 3 – Crossco Stormwater Design Drawings

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NOTES:

1. SOUTH STORAGE BASIN CROSS SECTIONS ARE SHOWN INDICATIVELY AND FINAL ALIGNMENT/LOCATION WILL BE CONFIRMED IN DETAIL DESIGN

2. 3:1 BATTER IS 1.2m (MAX) HEIGHT , AND CREATED AS A STEPPED ROCK FULLY PLANTED BATTER - NO MOWING. (SEE ATTACHED PHOTOS FOR EXAMPLES OF A STEPPED ROCK BASIN - REFER TO LANDSCAPE PLAN FOR PLANTING SCHEDULE)

3. 5:1 BATTER SLOPE CAN BE FULLY PLANTED TO REDUCE MOWING AND ADDITIONAL MAINTENANCE. (5:1 BATTER TO BE CONFIRMED IN DETAIL DESIGN - REFER TO LANDSCAPE PLAN FOR PLANTING SCHEDULE)

4. BASE OF STORAGE AREA CAN BE GRASSED OR GRAVELED/ROCKED. (STORAGE BASIN BASE TO BE CONFIRMED IN DETAIL DESIGN - REFER TO LANDSCAPE PLAN FOR PLANTING SCHEDULE)



EXAMPLE 1 : STEPPED ROCK BASIN PLANTED BATTER



EXAMPLE 2 : STEPPED ROCK BASIN PLANTED BATTER

	Sources	Residual Load
Flow (ML/yr)	14.2	10.7
Total Suspended Solids (kg/yr)	1450	244
Total Phosphorus (kg/yr)	3.78	
Total Nitrogen (kg/yr)	35.3	18.9
Gross Pollutants (kg/yr)	530	0

	Sources	Residual Load
Flow (ML/yr)	76	62.5
Total Suspended Solids (kg/yr)	10300	1900
Total Phosphorus (kg/yr)	24	8.59
Total Nitrogen (kg/yr)	196	105
Gross Pollutants (kg/yr)	2610	10.4

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Appendix 4 - MUSIC Modelling

MUSIC modelling was completed to assess the stormwater pollutant retention benefits of the drainage strategy.

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MUSIC	Model Degulta	7 EDD Outfall Aug 7	A Speciald East 1080 1	y its consideration and i 1086 min
Asset/Parameter	Total Source	Residual Loads	Total System Loads	77000000000000000000000000000000000000
Di Damaa WI DD	Loads		ed for any purpose	which may breach any
Flow (ML/yr)	20.9	18.4	25	12.3
Total Suspended Solids	3,840	205	3,635	94.7
Total Phosphorus (Kg/yr)	8.14	1.38	6.76	83.1
Total Nitrogen (Kg/yr)	58.4	23.6	34.8	59.5
Gross Pollutants (kg/yr)	829	0	829	100
Aqualina SBRB				
Flow (ML/yr)	19.6	15.8	3.8	19.5
Total Suspended Solids (Kg/yr)	2,220	459	1,761	/9.3
Cotal Phosphorus (Kg/yr)	5.6	2.3	3.3	59.0
Total Nitrogen (Kg/yr)	48.1	26.4	21.7	45.2
Gross Pollutants (kg/yr)	478	0	478	100
<u>27 EPR West</u> Vortceptor 220				
Flow (ML/yr)	25.9	21.0	4.9	18.7
Total Suspended Solids (Kg/vr)	3,270	983	2,287	70.0
Total Phosphorus (Kg/vr)	7.7	4.9	2.8	36.4
Total Nitrogen (Kg/vr)	66.7	55.7	11	16.5
Gross Pollutants (kg/yr)	973	8	965	99.2
7 EPR East Vortceptor 096				
Flow (ML/yr)	4.8	3.8	1.0	21.4
Total Suspended Solids	548	163	385	70.2
Total Phosphorus (Kg/yr)	1.4	0.8	0.6	38.2
Total Nitrogen (Kg/yr)	12.1	9.7	2.4	19.2
Gross Pollutants (kg/yr)	179	1	178	99.5
7 EPR vault and filters				
Flow (ML/yr)	74.9	61.4	13.5	18.1
Total Suspended Solids (Kg/yr)	10,300	1,880	8,420	81.8
Total Phosphorus (Kg/yr)	23.9	8.5	15.4	64.6
Total Nitrogen (Kg/yr)	195	103	92	46.9
Gross Pollutants (kg/yr)	2,600	0	2,600	100
27 EPR boundary outlet (A)				
Flow (ML/vr)	76.0	62.5	13.5	17.8
Total Suspended Solids (Kg/yr)	10,400	1,930	8,470	81.4
Total Phosphorus (Kg/vr)	24.0	8.5	15.5	64.4
Total Nitrogen (Kg/vr)	196	104	92	46.7
Gross Pollutants (kg/yr)	2,610	10	2,600	999.6
7 EPR boundary outlet				
<u>(B)</u>				
Flow (ML/yr)	14.2	10.7	3.5	24.3
Total Suspended Solids	1,460	248	1,212	82.9
(Kg/yr)				(2.2
(Kg/yr) Fotal Phosphorus (Kg/yr)	3.8	1.4	2.4	63.2
(Kg/yr) Fotal Phosphorus (Kg/yr) Total Nitrogen (Kg/yr)	3.8 35	<u> </u>	2.4	46.5

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Appendix 5	RORB Modelling Summary
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RORB Model results Eagle Pt Tait St Devel.cat

				RORB results 27	EPR catchment	used for a	inv purpose :	which may b
	20%AEP				1%AEP			
Storage system/location	Peak level (m)	Peak Discharge (m3/s)	Peak Storage (m3)	Critical storm	Peak level (m)	Peak Discharge (m3/s)	Peak Storage (m3)	Critical storm
Di Barco WLRB	23.44	0.07	904	3 hr TP 8	23.71	0.78	1,590	1 hr TP 23
Existing EPR flood pondage	23.22	0.22	61	1.5 hr TP 5	23.66	0.71	1,220	1.5 hr TP 28
Aqualina SBRB	20.05	0.11	651	3 hr TP 3	20.25	0.74	872	1 hr TP 23
27EPR West storage	15.68	0.96	112	20 min TP 7	17.17	1.46	590	20 min TP 30
27EPR East storage	14.15	1.05	80	20 min TP 3	14.98	1.51	300	30 min TP 24
27EPR North storage	6.58	0.24	197	20 min TP 4	8.98	0.35	548	1 hr TP 23
27EPR outlet (A)		1.05		1 hr TP 23		1.80		1 hr TP 23
						(1.81 m3/s Water Technology)		
27EPR outlet (B)		0.24		1 hr TP 23		0.35		1 hr TP 23
		(0.35 m3/s capacity to be provided in 450 mm dia)				(0.39 m3/s Water Technology)		
Riley St EX 450 outlet		0.32		20 min TP 8		0.59		1 hr TP 28
		(0.35 m3/s capacity)				(0.24 m3/s overland flow- safe)		

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Proposed Residential Village 27 Eagle Point Road, Eagle Point

Town Planning Report -Access & Servicing Strategy



Prepared for: Lincoln Place Pty Ltd

Prepared by: Crossco Consulting Pty Ltd PO Box 858 Bairnsdale Vic 3875

ENGINEERING & ENVIRONMENTAL CONSULTANT

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Document revision

Version	Date	Prepared by	Comments
DRAFT	09/10/2024	Crossco	Review
Rev A	15/10/2024	Crossco	Distributed to C&S and Client

Notice:

This Stormwater Management Strategy:

- 1. Has been prepared by Crossco Consulting Pty Ltd for Spring LP OpCo Pty Ltd.
- 2. Is for the use of LP OpCo Pty Ltd in seeking planning approval for the proposed residential village development at 27 Eagle Point Road, Eagle Point.
- 3. Is for the use of East Gippsland Shire in assessing a planning permit application for a residential village development at 27 Eagle Point Road, Eagle Point.
- 4. Must not be copied in part or whole without the prior written approval of the author and Spring LP OpCo Pty Ltd. This includes appendix documents which have been commissioned by Spring LP OpCo Pty Ltd.

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Background 1

Crossco Consulting Pty Ltd has been engaged by Spring LP OpCo Pty Ltd to prepare an Access & Servicing Strategy which will form part of the supporting documentation submitted with a planning permit application to East Gippsland Shire Council (EGSC) for a residential village development at 27 Eagle Point Road, Eagle Point (the site).

This report and attached Crossco Drawings (Appendix 2) are based on the following information provided to Crossco:

- Site Feature survey provided by Client at Appendix 1. •
- Site layout and staging plan (Hamilton Landscape Architects Pty ltd included at Appendix • 1)

The site is subject to the East Gippsland Shire Planning Scheme and is zoned GRZ1(General Residential Zone – Schedule 1) and one overlay applies being DDO11 (Design Development Overlay – Schedule 11 Residential Development in Coastal Settlements). The site is mapped as being in a Designed Bushfire Prone area. An unnamed designed waterway crosses the south-east corner of the site.



Figure 1: Planning Scheme Mapping¹

A planning permit (476/2021/P) was issued during 2022 for a multi-lot residential subdivision at the site.

A separate Stormwater Management Strategy has been prepared.

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¹ Source: https://mapshare.vic.gov.au/mapsharevic/

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2 Purpose

This Access & Servicing Strategy is prepared to consider the servicing of the proposed residential village and meet the expected requirements of the East Gippsland Shire Council (EGSC) and other service authorities including East Gippsland Water (EGW), Ausnet, Telstra and NBN.

As such this Access & Servicing Strategy:

- Considers site constraints and works that may be required to provide services to the site,
- Provides a <u>CONCEPT</u> layout of services required for the development of the subject site. The layout of internal utilities is provided to demonstrate that the proposed development can be serviced. These assets will be retained in private ownership.
- The <u>CONCEPT</u> design of and typical sections for roads and services layout.

Key Criteria:

- No subdivision is proposed.
- All infrastructure internal to the site will be retained in private ownership (NOT gifted to utilities).

This Access & Servicing Strategy has been prepared understanding that diligent site assessment is required at the concept design stage to ensure proposed servicing can physically be constructed at the site. The concept design stage is critical and arguably the most important stage of design because if done well, it can ensure inappropriate / problematic location of assets in the future, while ensuring all WSC and other service authority requirements are met as the proposed development progresses.

This Access & Servicing report considers the following matters:

- servicing of the residential village (internal infrastructure)
- servicing of the residential village (external infrastructure) via connection to existing external utilities
- proximity to and availability of utilities
- specific to the planning scheme including:

Ordinance / Clause	Matter Considered
53.18	Stormwater Management in Urban Development

3 Proposal

27 Eagle Point Road, Eagle Point (the site) is proposed to be developed for residential village (RV) purposes. The proposed RV (refer to Appendix 1) creates 209 sites, open space, and shared facilities, delivered in 4 stages.

The proposed development proposes the provision of the following services which will all be constructed underground:

- Sewer Gravity
- Watermain
- Electricity
- Communications

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- Vehicle access
- Drainage
- Stormwater Management (Refer to the separate Stormwater Management report for further details.)

The proposed development does not create separate lots or Reserve areas (ie. no subdivision is proposed.

All internal services assets will remain in the ownership of the property owner including stormwater management and drainage assets.

The Crossco drawings at Appendix 2 indicatively show the layout of utility services. The proposed stormwater management elements are included to provide confidence that infrastructure can be provided and has been considered in an integrated manner.

4 Site Overview

4.1 Property Details



Figure 2: Site Parcels

27 Eagle Point Road (the site) comprises 3 parcels as shown on Figure 2.

Additionally, the Hoskin Street reserve abutting the site is occupied under a Crown License by the owner of the site.

4.2 Site Location

The site within the Eagle Point township as shown in **Figure 3**, which provides an overview of the location of the site in relation to surrounding towns, arterial road network and waterways.

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Figure 3: Locality Plan



Figure 4 and Figure 5 show the site in the context of the development and road infrastructure.

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27 Eagle Point Road, Eagle Point Access & Servicing Strategy

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Figure 5: Site Aerial

As shown at Figure 6, the site and surrounding land is zoned GRZ1, with land to the south-west zoned LDRZ. Surrounding land is generally developed for residential purposes with the exception of a public hall and primary school to the north-west and Supported Residential Services facility (formerly Eagle Manor Aged Care) to the east of the primary school.



Figure 6: Surrounding Land Zones

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4.3 Description

At the time the site was inspected during August 2024, the site had good grass cover with no apparent soil instability. Figure 7 shows typical cover on the site.



Figure 7: Grass Cover

The maximum elevation at the site is approximately 29m AHD to the north-west falling to:

- 9m AHD at the north-east corner adjacent to Riley Street, and
- 14m AHD at the designated waterway to the south-east corner.

Slopes across the site vary as indicated in Figure 8, and surface water sheds to the north and south to Riley Street (north-east catchment) and the designated waterway (south catchment).

The site is located to the north of Eagle Point with existing residential development to the north, south, east and west.

The site has a maximum elevation of 28.5 m AHD at the north-west extent of the site and a minimum elevation of 9 m AHD at the north-east (refer to feature survey at Appendix 1 - Feature Survey.

The site grades generally to the north-east and south-south, from a natural highpoint, the location of which is is indicated at Figure 6: Surface Grade.

The site grades are classified as being "gentle slope"² and vary across the site as follows:

- from west to east at the west portion of the site of 2.5% (1V:40H).
- 10% (1V:10H) at the north-east corner of the site and 8% (1V:12.5H) at the south-east corner of the site.

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² VRO classification – Land degradation hazard region East Gippsland

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Figure 8: Surface Slope & watershed

As can be observed in the aerial photographs at Figure 4 and Figure 5 there are a number of trees at the site, with the majority of the native vegetation on the to the south east, in proximity to the designated waterway.

5 Reference Materials

5.1 Background Reports, Information and Designs

The formulation of the stormwater management design described in this report has utilised information from the following sources relating to designs, studies and/or current works in the catchments/sites surrounding the Subject Site. Information obtained from each source below is described in more detail in subsequent parts of this report where required.

- Site survey information (refer to Appendix 1)
- Proposed site layout (refer to Appendix 1)
- Local Government Infrastructure Design Association Infrastructure Design Manual, Version 5.4, September 2022.
- East Gippsland Planning Scheme

5.2 Other Planning Documents

The following planning documents are expected to be considered by Council in accordance with Cl 65.01.

5.2.1 Urban Design Framework 2007 – Eagle Point

The UDF 2007 (Amendment C68) recognises the importance of stormwater management with the following key strategies being adopted:

Objective 3: To protect and enhance the natural environment of the area, including the Lakes System. Strategies: 3.1 Improve stormwater drainage systems to minimise adverse impacts on lake water quality.

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27 Eagle Point Road, Eagle Point Access & Servicing Strategy This copied document is made available for the sole purpose of enabling its consideration and review as part of a planning process the Planning and Environment Act 1987. The document must not be

used for any purpose which may breach any copyright. 3.2 Ensure all new subdivisions and development incorporate satisfactory waste disposal and storm water management with the utilisation of water sensitive urban design techniques.

The strategies are consistent with all other provisions of the planning scheme and the IDM.

The UDF is referenced in the DDO11 ordinance of the East Gippsland Planning Scheme.

5.2.2 Eagle Point Draft Structure Plan Volume 1 (August 2018-A)

The subject site is within the Eagle Point Draft Structure Plan study area.

The Eagle Point Structure Plan (EPSP) was adopted by EGSC in August 2019 (Agenda Item 5.2.1). While the Structure Plan has not been incorporated into the East Gippsland Planning Scheme and no amendment is on the public record as having been prepared, the position of Council planning staff in respect of the status of the Structure Plan is confirmed below:

Whilst the EPSP has not yet been incorporated into the East Gippsland Planning Scheme, Section 60 of the Planning and Environment Act 1987 requires decision makers to '..consider any other strategic plan, policy statement, code or guideline which has been adopted by a Minister, government department, public authority or municipal council;' The EPSP represents Council's view to protect and enhance the neighbourhood character in this part of Eagle Point and introduce connectivity within this precinct. The plan resulted from significant consultation and has been adopted by Council. It is considered appropriate and entirely reasonable to consider the strategic intent provided within the adopted EPSP.³

Drainage and stormwater management proposed in the Structure Plan at the subject site is illustrated at Figure 10.



³ East Gippsland Shire Council Meeting Agenda – 7 July 2020, Item 5.1.2

⁴ Eagle Point Draft Structure Plan Volume 1 (August 2018-A), Part Figure 5.

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6 Services

Refer to Appendix 2 for drawings demonstrating how the development can be serviced.

An indicative location of existing services are shown in the Dial Before You Dig reports at Appendix 3.

6.1 Building Development

Proposed sites can be developed to provide for vehicle access and drainage based on existing and proposed surface levels. This report does not consider excavation and alteration of site levels for construction of buildings. It is anticipated that some retaining walls will be required to facilitate the placement of dwellings. Refer to Architect and Landscape Architect reports.

6.2 Pedestrian Access

Two pedestrian access locations are proposed to the development at Eagle Point Road to the south/west of the site, and Riley Street. Use of these will be limited to residents of the development.

Authority	External - East Gippsland Shire (Road Manager)
Existing	Surrounding recent developments to the south and west have constructed footpaths constructed as part of the subdivisional works undertaken by respective developers. These paths are visible at Figure 10 and included in the drawings at Appendix 2.
	Eagle Point Road Footpaths terminate at Woodman and adjacent to the wetland at Aquabella. There is a small length of footpath on the west side of Eagle Point Road opposite the school, that terminates opposite the community hall.
	Riley Street
	There are no footpaths in Riley Street or Bay Road.
Proposed	Two additional linking footpaths are proposed to be delivered as part of
	Stage 1 of the development:
	 Riley Street – from the termination of the Woodman
	footpath and terminating at the west end of the
	constructed length of Riley Street. Indicated in purple at
	Figure 10.
	- Eagle Point Road – from the Aquabella path to Woodman,
	between the conservation reserve and the dwellings with Aquabella frontage. Indicted in pink Figure 10.

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Figure 10: Existing & Proposed Footpaths

6.3 Vehicles Access / Roads & Drainage

6.3.1 External

Vehicle access to the site is outside the Scope of this report. Refer to Traffic Engineering Assessment, Impact September 2024.

Authority	East Gippsland Shire (Road Manager)
Existing	Eagle Point Road Eagle Point Road is managed by East Gippsland Shire, and access to the site is required to be taken from this Road. Existing drainage comprises grassed table drain that generally grades to the designated waterway to the south of the site.
	<u>Riley Street</u> Riley Street is managed by East Gippsland Shire, and emergency access is proposed to be provided to Riley Street. Existing drainage at the site frontage comprises a mix of kerb & channel and open table drain.



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	used for any purpose which may breach a
Proposed	Refer to Impact report - Construct two vehicle access points to the
	proposed development at Eagle Point Road and Riley Street
	respectively.
	The location of the vehicle access / egress locations is shown on the Crossco drawings included at Appendix 2 and refer to the Impact report for proposed layout details.
	Design and construction of these vehicle access locations will be undertaken in accordance with the IDM and road manager requirements and are essentially driveway crossovers.

6.3.2 Internal

The proposed internal road layout is described in the Impact traffic engineering report. Drainage for roadways is proposed to be provided via a pipe under the centreline of the roads (inverted road) with a series of grated pits collecting surface water for conveyance to the stormwater treatment and detention infrastructure (see separate SWS report).

Authority	N/A – internal roads will remain in private ownership
Proposed	Roads - refer to Impact traffic report.
Roads & Drainage	Low impact lighting is proposed.
	Internal drainage outfalls to the north-east and south respectively.
	Roads and drains will remain in private ownership.

Drainage design will be consistent with the requirements of Cl 53.18.

6.4 Stormwater Management

After collection in the road / drainage system, stormwater outfalls to the south or north-east (refer to Stormwater Strategy).

Authority	Internal – N/A – assets to be retained in private ownership External - East Gippsland Shire
Existing	There is a designated waterway to the south of the site. This designated waterway conveys stormwater generated at upstream developments with WSUD elements providing treatment and detention for those developments. Further detail is provided in the separate SWS.
Proposed	Stormwater management adopts the strategy proposed in the separate SWS. This infrastructure is proposed to be retained in private ownership.

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6.5 Sewer & Water

Eagle Point is serviced by both reticulated sewer and water services.

6.5.1 Wastewater

EGW has wastewater assets in proximity to the proposed development, with surrounding properties all being connected to the reticulated sewer system.

The requirement for exernal works is unknown, however the proponent has engaged with EGW to undertake a network study that will determine if external works are required. The potential for external works is outside the scope of this report, and will be the subject of a separate approvals process with EGW.

Authority	Internal – N/A assets to be retained in private ownership External - East Gippsland Water
Existing	There is no reticulated wastewater at the site, but all surrounding development is connected to sewer.
Proposed	 The proposed internal reticulated gravity sewers are separated into two catchments (refer to Drawings at Appendix 2): South catchment – outfalls to an existing manhole at the south-east of the site. North-east catchment – outfalls to an existing manhole in Riley Street.
	All internal wastewater assets will be retained in private ownership.
	Connections to the existing EGW assets will be subject to EGW Developer Works requirements.

6.5.2 Potable Water

EGW has potable water assets in proximity to the proposed development, with surrounding properties all being connected to the reticulated water supply system.

The requirement for exernal works is unknown, however the proponent has engaged with EGW to undertake a network study that will determine if external works are required. The potential for external works is outside the scope of this report, and will be the subject of a separate approvals process with EGW.

Authority	Internal – N/A assets to be retained in private ownership External - East Gippsland Water
Existing	There is reticulated potable water in Eagle Point Road and Riley Street. All existing properties in proximity to the proposed development are connected to the EGW watermains.
Proposed	Potable water will be reticulated to all sites (refer to Drawings at Appendix 2). A single metered connection to existing EGW assets is proposed. The location for connecting to EGW's existing network is subject to further discussion with EGW. Connections to the existing EGW assets will be subject to EGW Developer Works requirements.

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6.6 Electricity

Authority	Internal – N/A assets to be retained in private ownership				
	External - AusNet				
Existing electrical infrastructure	The general arrangement of existing Ausnet (electricity mains) assets in the area are shown in Appendix 3 DBYD plan, with additional information provided at Crossco Drawings at Appendix 2.				
	Nearby properties are all connected to mains electricity via the existing overhead supply.				
Proposed	All internal electrical infrastructure is proposed to be retained in private ownership.				
	All internal electrical distribution infrastructure will be constructed underground.				
	An electrical designer has been engaged by the proponent. A detailed electrical demand assessment and design is being prepared incorporating solar, energy storage and mains supply connections. The requirement for a kiosk will be determined as part of the electrical design and if required will be incorporated into the infrastructure design.				
	Internal street lighting will be included in the detailed electricity design and is proposed to be low level bollard style lighting to minimize the impact of light spill. Lighting of the vehicle access point at Eagle Point Road is considered by Others and outside the Scope of this report.				

6.7 Communications

Authority	Internal – N/A assets to be retained in private ownership External - Telstra and NBN Co
Existing communications infrastructure	The general arrangement of Telstra assets in the area is included in the DBYD plans at Appendix 3, with additional information provided at Crossco Drawings at Appendix 2. Telstra and NBN assets are located within existing road reserves, with the exception of comms cables that service existing buildings on the site. Existing surrounding properties are serviced by both Telstra and NBN.
Proposed	Subject to Authority advice, Telstra and NBN existing cables are proposed to be extended to service the proposed development as shown on the Crossco Drawings at Appendix 2. All internal communications infrastructure is proposed to be retained in private ownership.

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7 Environmental Management

7.1 Construction Management

The construction of infrastructure (including dwellings) outlined in this report requires management to ensure there is no off-site impact.

Poor sediment control and litter management practices during construction can result in public nuisance, drainage blockages and off-site pollution. In particular sediment entering the drainage system has a negative impact on the performance of stormwater treatment and conveyance by depositing sediment (in pits, pipes, swales, basins etc) which impairs the designed performance of the system. Sediment discharged off-site has negative ecological impacts including: smothering, reducing sunlight penetration and increasing nutrient loads and other pollutants.

Examples of poor environmental management practices and off-site impacts are shown at Figure 16 and Figure 15 below, and in all examples compliance with EPA Publication 1834 would have mitigated the negative off-site impacts.



Figure 11: Off-site Sediment Examples



Figure 12: Building Materials – off-site impact example

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used for any purpose which may breach any copyright. Compliance with EPA publication 1834 through <u>all</u> phases of construction works is strongly recommended. The publication cover page and excerpt of table of contents is included at Figure 18.





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Cha	oter 1: About this guide	
1.1	Why is this guide important?	1
1.2	What does this guide cover?	
1.3	How to use this guide	
Cha	oter 2: Understanding your duties	
2.1	Duties relevant to the civil construction, building and demolition industries	
2.2	Who enforces environmental law?	
Cha	oter 3: Managing your environmental risk	
3.1	Ways you can manage your risk	
3.2	Optional tools to help you record the way you manage risk	
3.3	Responding to an incident	
Cha	oter 4: Noise and vibration	
4.1	Background	
1.2	Planning your project	
4.3	Managing noise and vibration during working hours	
4.4	Managing noise and vibration outside normal working hours	
4.5	Reducing noise impact offsite	
Cha	oter 5: Erosion, sediment and dust.	
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5.2	Planning your project.	
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6.1	Background	
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Figure 13: EPA Publication 1834 cover & ToC excerpt

7.2 Geotechnical Assessment

Consistent with standard engineering design practices, prior to the design of civil infrastructure a detailed investigation will be undertaken that specifically provides the information required for infrastructure design. This assessment will also determine if any additional controls should be considered during construction (eg. trenching additional to "Compliance code – Excavation", WorkSafe December 2019).

Until recently the site was mapped in the Erosion Management Overlay (EMO) of the East Gippsland Planning Scheme. The site is not subject to the EMO. Experience gained during the construction of surrounding subdivisional works indicate that the geotechnical risks at the site are commonly encountered and can be managed through good design and construction practices.

7.3 Ecological and Arborist Investigation

An assessment of vegetation has been undertaken by Others. TPZs / RPZs and recommendations for retention of trees shown should be incorporated as engineering design is further developed.

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8 Summary & Conclusions

8.1 Development Standards Summary

Development standards considered in this report are summarised in Table 1.

Planning Scheme	Matter Considered
53.18 - 5 Stormwater Management Objectives for Buildings and Works	 Standard W2 Met – the stormwater management system has been designed with the external catchment considered, the internal collection and conveyance system proposed is consistent with standard practice, all treatment and detention requirements are met. Refer to separate Stormwater management strategy.
53.18 - 5 Site Management Objectives	 Standard W3 Met - Site management in accordance with EPA publication 1834 is proposed during all stages of construction.

8.2 Conclusion

This report presents the concept design of infrastructure required to service the proposed development.

Detailed discussion regarding WSUD elements are not duplicated in this report. Internal road layout is discussed in a separate Traffic report and not duplicated in this report.

All elements designed are <u>CONCEPT</u> designs only. Consistent with standard design practice, the concept design requires further development (into a functional and then detailed design) as the project becomes further advanced.

As design development advances the following is recommended:

- Consideration of result of EGW network modelling work and confirmation of any external works required.
- Geotechnical site assessment suitable for road pavement design.
- Integration of electrical design including kiosk locations to provide for all infrastructure proposed.
- Integration of ecological and arborist recommendations including "no-go-zones".

The proposed development can be serviced to meet the required planning scheme ordinance, and service authority requirements.

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Any approval should be conditional upon:

- progressive and iterative design development of all infrastructure elements.
- staged delivery of infrastructure.
- all stages of infrastructure construction (including dwellings) to comply with EPA publication 1834.

It is again worth noting that:

- All internal infrastructure is proposed to be retained in private ownership.
- No subdivision is proposed.

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27 Eagle Point Road, Eagle Point Access & Servicing Strategy

Appendix

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Appendix 1 – Proposed Development

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NOTATIONS	SITE PLAN (WATERWAY & TPZ'S)
PROXIMATE ONLY	
E SUBJECT TO SURVEY	PARISH OF BAIRNSDALE



			REVISION
	REV.	DESCRIPTION	
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HAMILTON LANDSCAPE ARCHITECTS PTY LTD Site Planning | Urban Design | Landscape Architecture 1 York Place, Carlton VIC 3053 - Australia | Tel: +61 03 9348 2800 E-mail: office@hla.net.au | http://www.hla.net.au

PROJECT

DRAWING: HOUSE TYPE SCALE: 1:750 @ A1



34 (74%)

44 (76%)

STAGE3

STAGE4

4 (9%)

6 (10%)

LP TO CONFIRM HOUSE TYPES ACROSS THE SITE.

8 (17%)

8 (14%)

47

46

58

DRAFT

25 EAGLE POINT ROAD, EAGLE POINT

F ROAD, EAGLE POINT								•
MASTERPLAN			CLIENT: LINCOLN PLACE		Printe	ed 7/11	120	/ 24
	DRAWN: WL	JOB NUMBER: 24-017	Drw No.: DA-02	REVISION: A	Page	e 72 of	18	1
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Appendix 2 – Crossco Drawings

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NOTES:

1. SOUTH STORAGE BASIN CROSS SECTIONS ARE SHOWN INDICATIVELY AND FINAL ALIGNMENT/LOCATION WILL BE CONFIRMED IN DETAIL DESIGN

2. 3:1 BATTER IS 1.2m (MAX) HEIGHT , AND CREATED AS A STEPPED ROCK FULLY PLANTED BATTER - NO MOWING. (SEE ATTACHED PHOTOS FOR EXAMPLES OF A STEPPED ROCK BASIN - REFER TO LANDSCAPE PLAN FOR PLANTING SCHEDULE)

3. 5:1 BATTER SLOPE CAN BE FULLY PLANTED TO REDUCE MOWING AND ADDITIONAL MAINTENANCE. (5:1 BATTER TO BE CONFIRMED IN DETAIL DESIGN - REFER TO LANDSCAPE PLAN FOR PLANTING SCHEDULE)

4. BASE OF STORAGE AREA CAN BE GRASSED OR GRAVELED/ROCKED. (STORAGE BASIN BASE TO BE CONFIRMED IN DETAIL DESIGN - REFER TO LANDSCAPE PLAN FOR PLANTING SCHEDULE)



EXAMPLE 1 : STEPPED ROCK BASIN PLANTED BATTER



EXAMPLE 2 : STEPPED ROCK BASIN PLANTED BATTER

	Sources	Residual Load
Flow (ML/yr)	14.2	10.7
Total Suspended Solids (kg/yr)	1450	244
Total Phosphorus (kg/yr)	3.78	
Total Nitrogen (kg/yr)	35.3	18.9
Gross Pollutants (kg/yr)	530	0

	Sources	Residual Load
Flow (ML/yr)	76	62.5
Total Suspended Solids (kg/yr)	10300	1900
Total Phosphorus (kg/yr)	24	8.59
Total Nitrogen (kg/yr)	196	105
Gross Pollutants (kg/yr)	2610	10.4

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Appendix 3 – Dial Before You Dig

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Job No 36712181



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3031330

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used for any purpose which may breach any copyrigh

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Contact Details

Contact

Sara Mason

Email

consult@crossco.com.au

Job Site and Enquiry Details

WARNING: The map below only displays the location of the proposed job site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

Enquiry date 20/05/2024	Start date 31/05/2024	End date 30/06/2024	On behalf of Private	Job purpose Excavation	Locations Both Road, Nature Strip Footpath	Onsite activities , Mechanical Excavation
Woodman Road			Check that the	location of the	job site is correct. If not, y	you must submit a new enquiry.
Maravito Terrace Aquabella Drive	Eagle Point Road	Riley Street	If the scope of	works change o	or plan validity dates expi	ire, you must submit a new enquiry.
l court	Hough	skin Street	Do NOT dig w how to procee	ithout plans. Sa d safely, please	fe excavation is your resp contact the relevant asse	onsibility. If you don't understand the plans or at owners.
User Reference 2955			Address 13 Aquab Eagle Poi	oella Drive nt VIC 3878		Notes/description -

Your Responsibility and Duty of Care

- Lodging an enquiry does not authorise project commencement. Before starting work, you must obtain all necessary information from all affected asset owners.
- If you don't receive plans within 2 business days, contact the asset owner & quote their sequence number.
- Always follow the 5Ps of Safe Excavation (page 2), and locate assets before commencing work.
- Ensure you comply with State legislative requirements for Duty of Care and safe digging.
- If you damage an underground asset, you MUST advise the asset owner immediately.
- By using the BYDA service, you agree to the Privacy Policy and Term of Use.
- For more information on safe digging practices, visit www.byda.com.au

Asset Owner Details

Below is a list of asset owners with underground infrastructure in and around your job site. It is your responsibility to identify the presence of these assets. Plans issued by Members are indicative only unless specified otherwise. Note: not all asset owners are registered with BYDA. You must contact asset owners not listed here directly.

Referral ID (Seq. no)	Authority Name	Phone	Status
239412331	APA Group Gas Networks (70302)	1800 085 628	NOTIFIED
239412332	AusNet Electricity Services Pty Ltd	1800 088 208	NOTIFIED
239412330	East Gippsland Shire Council	(03) 5153 9500	NOTIFIED
239412335	East Gippsland Water	1800 671 841	NOTIFIED
239412334	NBN Co VicTas	1800 687 626	NOTIFIED
239412333	Telstra VICTAS	1800 653 935	NOTIFIED

END OF UTILITIES LIST

The 5Ps of Safe Excavation

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Plan

Plan your job. Use the BYDA service at least one day before your job is due to begin, and ensure you have the correct plans and information required to carry out a safe project.

BYDA

Engage a skilled Locator



Book a FREE BYDA Session



BYDA offers two different sessions to suit you and your organisation's needs. The free sessions are offered in two different formats - online and face-to-face:

1. Awareness Session: Understand the role of BYDA, safe excavation practices, complying with asset-owner instructions, and the consequences of damages. Learn how to mitigate and avoid potential damage and harm and ensure a safe work environment.

2. Plan Reading Session: Develop the skills to interpret asset owners' plans, legends, and symbols effectively. Understand the complexities of plan interpretation to ensure smooth project execution.

BOOK NOW

To book a session, visit: byda.com.au/contact/education-awareness-enquiry-form/

Prepare

Prepare by communicating with asset owners if you need assistance. Look for clues onsite. Engage a skilled Locator.

Protect

Pothole

Potholing is physically

sighting the asset by

hand digging or

hydro vacuum

extraction.

When you lodge an enquiry you will

see skilled Locators to contact

Protecting and supporting the exposed infrastructure is the responsibility of the excavator. Always erect safety barriers in areas of risk and enforce exclusion zones.

Only proceed with your excavation work after planning, preparing, potholing (unless prohibited), and having protective measures in place.

Proceed

Visit the Certified Locator website directly and search for a locator near you

dbydlocator.com/certified-locating-organisation

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> APA Group PO Box 6014 Halifax Street, South Australia 5000



For your immediate information THERE IS A GAS PIPELINE OR INFRASTRUCTURE (Gas Assets) located in close vicinity to your works.

20/05/2024

Company: Crossco Consulting Sara Mason 154 Macleod Street Bairnsdale VIC 3875

consult@crossco.com.au

Dear Sara Mason

Sequence Number:	239412331	
Worksite Address:	13 Aquabella I	Drive
	Eagle Point	
	VIČ	3878

Thank you for your Before You Dig enquiry regarding the location of Gas Assets.

We confirm <u>there are Gas Assets located in close vicinity</u> of the above location. Damage to gas assets may result in explosion, fire and personal injury.

Please ensure you read and comply with all the relevant requirements contained in this response to your enquiry.

Contacts – APA Group						
Enquiry	Contact Numbers					
General enquiries or feedback regarding this information or gas assets.	APA - Before You Dig Officer					
QLD Only	Phone: 1800 085 628 Email: <u>PermitsQld@apa.com.au</u>					
All other States	Phone: 1800 085 628 Email: <u>DBYDNetworksAPA@apa.com.au</u>					
Gas Emergencies	Phone: 1800 GAS LEAK (1800 427 532)					

Please find below the following information:

- 1. **Duty of Care** If you are unclear of your obligations under these requirements please contact the Before You Dig officer for clarification.
- 2. An overview map highlighting the area of your intended works.
- 3. Map(s) showing APA operated Gas Assets within the area of your intended works.





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Important Information:

- This information is valid for 30 days from the date of this response.
- This information shall be available on site whilst conducting works.
- This information has been generated by an automated system based on the area highlighted in your BYDA request and has not been independently verified. Please check the maps represent the area you requested. If they do not, please contact the APA - Before You Dig officer.
- For some BYDA enquiries, you may receive two (2) responses from APA. Please read both responses carefully as they relate to different assets.

Yours Faithfully,

APA Group



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Duty of Care - Working Around Gas Assets

General Conditions

- BYDA enquiries are valid for 30 days. If your works commence after 30 days from the date of this response a new enquiry is required to validate location information.
- The location information supplied in this document shall be used as a guide only. APA does not guarantee the accuracy or completeness of the map and does not make any warranty about the data. APA is not under any liability to the user for any loss or damage (including consequential loss or damage) which the user may suffer resulting from the use of this information or maps.
- It is the responsibility of the excavator to expose all Gas Assets by hand digging. Gas Asset depths may vary according to ground conditions.
- Gas (inlet) Services connecting Gas Assets in the street to the gas meter on the property are <u>not</u> marked on the map. <u>South Australia Only</u> - If a meter box is installed on the property, a sketch of the gas service location <u>may</u> be found inside the gas meter box. APA does not guarantee the accuracy or completeness of these sketches.
- Road authorities, council's, and their authorised contractors and agents are responsible to pot-hole or use other suitable methods to verify the location and depth of all gas assets, including Gas (inlet) Services, prior to commencing any works.
- The location and depth of underground mains & services, including those in the road corridor and footpath, may vary in alignment and depth of cover, as a result of changes to road, footpath or surface levels subsequent to installation.
- Some Gas Assets may be installed inside a casing. Locations where a Gas Asset changes from being located within, to being located outside a casing may not be marked on the maps provided.
- The use of hydro-vacuum excavation in vicinity to Gas Assets is permitted under the following conditions:
 - Maximum water pressure of 1000psi unless otherwise advised.
 - A minimum distance of 100mm shall be maintained between the end of the pressure wand nozzle and gas assets.
 - Vertical movements of the pressure wand nozzle or inserting the nozzle in vicinity of the gas asset prohibited
 - The use of root cutting heads is prohibited.

Where a gas asset has been exposed via hydro-vacuum excavation a visual check must be undertaken to ensure no damage has occurred to the pipe or it's coating. If any damage has occurred notify the APA Before You Dig Officer.



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Site Watch / Locate Services

Site Watch - A condition of an APA Authority To Work permit is for an APA Site Watch representative be present on site whilst conducting works. The purpose is to monitor works and protect gas assets in the vicinity from potential damage by the works.

Locate – This service is available on request, where an APA representative will visit your work site before work commencement to electronically locate and mark on the ground surface all gas assets in vicinity of the work site.

These services are provided under the following conditions:

- Contact APA Before You Dig officer to make a booking. Contact details in the table above.
- The following rates are chargeable for these services:

Item	Rate (excl. gst)
Site Watch – Business Hours	\$143.42 per hour
Site Watch - After Hours	\$175.06 per hour
Electronic Locate – Business Hours	\$143.42 per hour
Electronic Locate – After Hours	\$175.06 per hour
Cancellation Fee	2 hrs Business Hours rate (where cancellations received <u>after</u> 12pm (midday) 1 business day prior to the booking)
Mains Proving	Quoted on request

Notes:

- 1hr minimum charge applies.
- A Cancellation Fee applies where cancellations are received after 12pm (midday) one(1) business day prior to the booked Site Watch / Locate service
- Contact APA Before You Dig officer for state specific hours of business.



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MEDIUM PRESSURES	summer of summer	CU	Copper	BURIED VALVES		
HIGH PRESSURES		N2	Nylon	REGULATORS	B B B	1 3
TRANSMISSION PRESSURES		P# (e.g. P6)	Polyethylene (PE)	GAS SUPPLIED = YES	1	2 4
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Mapping information is provided as AS5488-2022 Quality Level D APA Group • PO Box 6014 Halifax Street SA 5000 • Email: DBYDNetworksAPA@apa.com.au • Template: APA Affected September 2023 Page 8 of 9 • 20/05/2024 Printed 7/11/2024 Page 92 of 181



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PRIORITY MAIN (BEHIND PIPE)		P6,P7,P9-P12	Medium Density PE	CP RECTIFIER UNIT		
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Job # 36712181 Seq # 239412335

Location: 13 Aguabella Drive Eagle Point VIC 3878

Provided by East Gippsland Water Telephone 1300 134 202 (24 Hours, 7 Days)

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Plans generated by SmarterWX[™] Automate

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Emergencies, service difficulties and faults contact East Gippsland Water on 1300 134 202 (24 Hours, 7 Days)

63 SE 100 8

40 PE 80B

Scale 1:1.000

27

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location. Compensation will be sought for

any damage or loss to Corporation assets.

Plans generated by SmarterWX™ Automate

20/05/24 (valid for 30 days)



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Plans generated by SmarterWX™ Automate

Scale 1:1.000

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-	Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment Ph - 13 22 03	Sequence Number: 239412333
	Email - Telstra.Plans@team.telstra.com Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries	Please read Duty of Care prior to any excavating
	TELSTRA LIMITED A.C.N. 086 174 781	
	Generated On 20/05/2024 08:50:37	

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WARNING

Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.

As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D.

Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.

Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.

Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.

A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.

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То:	Sara Mason
Phone:	Not Supplied
Fax:	Not Supplied
Email:	consult@crossco.com.au

Dial before you dig Job #:	36712181	BEFORE
Sequence #	239412334	YOU DIG
Issue Date:	19/05/2024	Zero Damage - Zero Harm
Location:	13 Aquabella Drive , Eagle Point , VIC , 3878	

1

2

Indicative Plans

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· + ·	
14	Parcel and the location
3	Pit with size "5"
25	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
\otimes	Pillar
2 PO-T-25.0m P40-20.0m	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
-0 10.0m	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
-0-0-	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
-0-0-	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
-0-0-	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
TROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m

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Emergency Contacts

You must immediately report any damage to the **nbn**[™] network that you are/become aware of. Notification may be by telephone - 1800 626 329.

Printed 7/11/2024 Page 107 of 181 27 Eagle Point Road, Eagle Point Access & Servicing Strategy

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Crowther & Sadler Pty. Ltd.

LICENSED SURVEYORS & TOWN PLANNERS

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Bushfire Hazard Assessment

Proposed Residential Village 27 Eagle Point Road, Eagle Point Reference – 20862

October 2024



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1. Introduction

This report has been prepared to identify bushfire hazard and to provide a risk assessment relating to the proposal for a Residential Village at 27 Eagle Point Road, Eagle Point.

The purpose of this report is to:

- Respond to State Planning Policy at Clause 13.02-1S relating to Bushfire Planning;
- Identify vegetation, topographic and climatic conditions that create a bushfire hazard;
- Provide an assessment of the bushfire hazard on the basis of landscape conditions, local conditions, neighbourhood conditions and conditions of the subject land; and
- Respond to the identified bushfire hazard, including proposed bushfire protection measures and demonstrate how the protection of human life has been prioritised.

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27 Eagle Point Road, Eagle Point

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2. Locality & Site Description

The subject land is formally described as Lot 2 on PS743267N, and Lots 1 & 3 on TP888557E, three adjacent parcels of vacant land contained within the General Residential Zone. The subject land represents an undeveloped holding surrounded on all sides by existing residential development.



Zone Mapping (Source: LASSI SPEAR)

The property has a gently undulating landform, sloping gently downward to the north-east and south-east.



Extract from Feature and Contour Plan (Source: Freeman Land Surveying)

20862 Bushfire Assessment - Oct 2024.docx

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The property comprises of pastural grasses and is mostly clear of substantial vegetation, excluding a cluster of large trees located in proximity to the designated waterway in the south-eastern corner of the site. Roadsides adjoining the subject land to the north, south and west contain naturally occurring and planted vegetation.



Aerial Photo (Source: Google Earth)

Whilst the majority of properties within the immediate precinct contain residential development, there are some larger cleared paddocks to the south-east which form part of a broader agricultural holding and are zoned accordingly. There are some patches of vegetation scattered throughout the wider landscape however the predominant classifiable vegetation within the subject land is grassland, surrounded by modified vegetation.



Aerial view of subejct land and surrounding precinct (Source: Google Earth)

20862 Bushfire Assessment - Oct 2024.docx

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3. State Planning Policy Assessment

<u>Objective</u>

Clause 13.02-1S of the Planning Policy Framework seeks 'to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritizes the protection of human life'.

Policy Application

The Bushfire Planning Policy at Clause 13.02-1S is to be applied to all planning and decision making under the *Planning & Environment Act 1987* relating to land that is:

- Within a designated bushfire prone area;
- Subject to a Bushfire Management Overlay; or
- Proposed to be used or developed in a way that may create a bushfire hazard.

Whilst the subject land is not affected by the provisions of the Bushfire Management Overlay, the Policy does need to be considered for the proposed Residential Village as the site is identified as a designated bushfire prone area.



Extract of Bushfire Management Overlay Mapping (Source: VicPlan)

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4. Strategies

The following tables outline the various strategies to be implemented under the provisions of Clause 13.02-1S relating to Bushire Planning and provides responses specific to the proposal at hand.

Protection of Human Life		
Strategy	Response	
Prioritising the protection of human life over all other Policy Considerations.	 The proposed Residential Village in this location is considered to ensure protection of human life. The subject land is excluded from Bushfire Management Overlay mapping. The site is located within an existing residential precinct located only an 8min drive west of Paynesville and a 10min drive south-east of Bairnsdale. The subject land and adjoining properties are well managed and modified in nature. The landform is flat and does not promote hazardous fire runs. Surrounding properties contain predominantly general residential development. The cleared agricultural grassland in the precinct does not provide a severe fire threat given it is actively grazed. 	
Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.	The subject land is considered a low risk location given its close proximity to the main township areas of Paynesville, Bairnsdale and Eagle Point and the surrounding conditions. Vehicle access from the subject land to the primary settlement area of Bairnsdale is provided via good quality bitumen sealed roads, with two routes available. The relatively central location within the main the township area and good access enhances the protection of human life from the bushfire risk.	
Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.	The proposed village layout has been designed with regard for Australian Standard AS3959. Given the designation of the subject land as a Bushfire Prone Area, future development will need to demonstrate appropriate consideration of Bushfire Attack Level (BAL) at Building Permit stage (as appropriate). The layout has been designed to ensure all homes can achieve a minimum BAL of 12.5.	

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Bushfire Hazard Identification & Assessment		
Strategy	Response	
Identify bushfire hazard and undertake appropriate risk assessment by:		
Applying the best available science to identify vegetation, topographic and climatic conditions that create a bushfire hazard.	The Planning Application triggers consideration of the proposal under Clause 13.02-1S of the East Gippsland Planning Scheme.	
	The need to consider the requirements of Australian Standard AS3959 arises from the subject land being within a Designated Bushfire Prone Area.	
	The Application has therefore considered the methodology and controls of Australian Standard AS3959 as part of the bushfire assessment.	
Considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under Building Act 1993 or regulations made under that Act.	This report demonstrates that future development across the subject land is able to meet the requirements of Table 2.4.2 of Australian Standard AS3959.	
Applying the Bushire Management Overlay to areas where the extent of vegetation can create an extreme bushfire hazard.	The subject land is not affected by the Bushfire Management Overlay. The nearest Bushfire Management Overlay affected area is approximately 95m to the north, where Schedule 1 to the Overlay applies.	
	The exclusion of the site from the Bushfire Management Overlay demonstrates the site is not considered to be at severe risk from bushfire.	
Considering and assessing the bushfire hazard on the basis of: -Landscape Conditions (Meaning conditions in the landscape within 20km (& potentially up to 75km) of	Please see Section 6 of this report which includes an assessment of the proposal against the landscape conditions, local conditions, neighbourhood conditions and site conditions.	
a site). -Local Conditions (Meaning conditions in the area within approximately 1km of a site).		
-Neighbourhood conditions (Meaning conditions in the area within 400m of a site.		
-The site for the development.		
Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.	The Planning Application will not be formally referred to the Country Fire Authority. The Responsible Authority will need to be satisfied that the proposal adequately addresses Clause 13.02-1S.	

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Bushfire Hazard Identification & Assessment (continued)	
Strategy	Response
Identify bushfire hazard and underta	ke appropriate risk assessment by:
Ensuring that strategic planning documents, planning scheme amendments, planning permit applications and development plan approvals properly assess bushfire risk and include appropriate bushfire protection measures.	This report demonstrates that the proposal has regard to bushfire risk. Appropriate bushfire mitigation measures will be achieved by adoption of appropriate construction techniques and ongoing management of ground fuel consistent with a modified classification. In addition, the subject land is not exposed to any of the natural hazards [pg.53] identified in the Eagle Point Structure Plan.
Not approving development where a landowner or proponent has not satisfactorily demonstrated that the relevant policies have been addressed, performance measures satisfied or bushfire protection measures can be adequately implemented.	This report demonstrates that the proposal responds positively to the provisions of Clause 13.02-1S, and that appropriate bushfire protection measures can be implemented.

Settlement Planning			
Strategy	Response		
Plan to strengthen the resilience of settlements and communities and prioritise protection of numan life by:			
Directing population growth and levelopment to low risk locations, being those locations assessed as having a radiant heat flux of less than 2.5 kilowatts/square metre under AS 1959-2018 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2018).	The village layout has been designed to accommodate future development to BAL 12.5, based on assessment under Australian Standard AS 3959. The omission of the subject land from the Bushfire Management Overlay demonstrates that the subject land is not a high risk bushfire area. The subject land has been earmarked for residential development within the Eagle Point Structure Plan, demonstrating further that development will not result in an increase in risk to human life and property. Residential development in this location is therefore considered appropriate and will not result in any adverse bushfire risk or risk to life and property.		

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Settlement Planning (continued)		
Strategy	Response	
Plan to strengthen the resilience of settle human life by:	ements and communities and prioritise protection of	
Ensuring the availability of, and safe access to, areas assessed as a BAL- Low rating under AS 3959-2018 Construction of Buildings in Bushfire- prone Areas (Standards Australia, 2018) where human life can be protected from the effects of bushfire.	The subject land is located only a short drive from the main commercial centres of Paynesville & Bairnsdale which provide safe refuge from bushfire. Access to both towns is facilitated by good quality sealed road networks.	
Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development.	Bushfire risk will not increase as a result of the proposed development. If anything, the establishment of residential development on the land will provide additional protection to existing and future development by removing an area of classifiable vegetation (grassland), with ongoing assurance of management and continued maintenance of the land.	
Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reducing bushfire risk overall.	There will be no net increase in risk resulting from the proposal, as appropriate bushfire protection measures will be implemented. The proposal has also been designed in a manner which will ensure that future development will have direct and convenient access to the existing road network, including the incorporation of a secondary emergency egress.	
Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale including the potential for neighbourhood-scale destruction.	Although the site is not considered to be at high risk from bushfire, which is evident through the absence of the Bushfire Management Overlay, the risk of bushfire is recognised by the Bushfire Prone Area designation. The main fire threat is provided further to the north of the subject land where the terrain becomes steeper and vegetated in the Flora and Fauna Reserve north of School Road. This main threat is more than 300m away, with that distance broken up by considerable residential development. Further information on the bushfire behaviour at a landscape, local, neighbourhood and site level is provided at section 6 of this Report.	
Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.	The subject land is contained within an existing residential precinct earmarked for infill residential development, as per the Eagle Point Structure Plan.	

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Settlement Planning (continued)			
Strategy	Response		
Plan to strengthen the resilience of settlements and communities and prioritise protection of human life by:			
Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than BAL 12.5 rating under AS3959-2018 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2018).	This report is prepared in support of an Application for Planning Permit which can be approved given future development can achieve construction to a minimum BAL 12.5.		

Areas of Biodiversity Conservation Value		
Strategy	Response	
Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are important areas of biodiversity.	 The proposed layout has been designed having regard for the context of the adjoining road network. This has been achieved by: Adoption of tree protection zones for all retained vegetation to ensure development will not compromise the health or integrity of vegetation. Minimising points of access to the external road network. Use of proposed internal road network, which will limit the number of access points through the perimeter planting and vegetated road reserve. Landscaping and drainage infrastructure will enable the appropriate and ongoing management of the separation distance from remnant Woodland vegetation within the Hoskin Street road reserve and adjacent to the waterway. All proposed houses will take access from proposed internal roads, attempting to minimise impacts on existing roadside vegetation.	

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Use & Development Control in Bushfire Prone Area		
Strategy Response		
When assessing a Planning Permit Ap	oplication for uses and development:	
Consider the risk of bushfire to people, property and community infrastructure.	Establishment of a Residential Village in this location is most appropriate having regard for the surrounding residential use, proximity to townships and strategic directives for the precinct.	
	Development will ultimately provide protection to one another, and to surrounding properties by ensuring the environment remains at a managed low threat state.	
Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.	The development of the subject land will result in the removal of an existing bushfire hazard in the form of 'grassland' vegetation. The site will be maintained in perpetuity to a low threat condition, thereby enhancing protection and resilience from fire.	
	Future development is able to accommodate construction to a BAL 12.5 standard.	
Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.	The proposed development maintains significant native vegetation, appropriately managed to minimise bushfire risk, and with additional landscaping enhancing biodiversity outcomes.	
	The proposed development accords with the aspirations of the Eagle Point Structure Plan.	

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Policy Guidelines 5.

Policy Guidelines & Documents	Response	
The following must be considered as relevant:		
Any applicable approved state, regional and municipal fire prevention plan.	The Municipal Fire Prevention Plan has been considered. See section 6.7 of this report.	
AS 3959-2018 Construction of Buildings in Bushfire-prone Areas (Standards Australia, 2018)	Australian Standard AS3959 has been used as part of this assessment to classify slope and vegetation to determine BAL 12.5 requirements for each lot.	
Any bushfire prone area map prepared under the Building Act 1993 or regulations made under that Act.	The current Bushfire Prone Area mapping has been considered as part of this report. The subject land is within a designated Bushfire Prone area.	

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6. Bushfire Risk

Under Clause 13.02-1S relating to Bushfire Planning triggers the need to consider and assess the bushfire hazard based on:

- Landscape conditions;
- Local conditions;
- Neighbourhood conditions; and
- The site for the development.

6.1 Landscape Conditions

When considering and assessing the bushfire hazard the landscape risk needs to be taken into consideration which includes the extent of vegetation cover, the area available to a landscape bushfire, terrain and accessibility to low threat areas.

Under Clause 13.02-1S pertaining to Bushfire Planning 'landscape conditions' refers to conditions in the landscape within 20km (and potentially up to 75km) of a site.



Landscape Conditions within 20km of the subject land (Source: Google Earth)

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The key features within the 20km assessment area surrounding the site include:

- Large areas of residential and rural residential development, particularly to the north and to the east of the property.
- Large areas of grassland coverage throughout most of the assessment area, much of which is utilised for grazing activities.
- The most northern portion of the 20km assessment area contains forested areas connected to a larger expanse of vegetation which provides a distant threat from bushfire.
- Whilst the terrain within most of the assessment area is flat or mildly undulating, the land within the northern tip of the assessment area is much steeper, beginning to incorporate large hills as the land beyond begins to expand into the foothills of the Great Dividing Range.
- The land between the subject land and the township area of Bairnsdale to the south is not vegetated and is easily accessed by a good quality sealed road network.

The subject land is surrounded by general residential, low density/rural residential and grazing properties. The vegetation within the wider landscape is mostly representative of grassland which generally provides a low risk to bushfire.

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6.2 Local Conditions

Under Clause 13.02-1S pertaining to Bushfire Planning 'local conditions' refers to conditions in the area within approximately 1km of a site.



Local conditions within 1km of the subject land (Source: Google Earth)

The key features within the 1km assessment area surrounding the subject land include:

- Land immediately in all directions is best described as residentially developed. However, the beginnings of farmed grassland are evident to the south-west and east towards the edges of the assessment area.
- The vast majority of properties within the assessment area are low density residential.
- Paynesville Road, which is categorised as a Road Zone Category 1, dissects the assessment area into northern and southern portions.
- The landform is predominantly flat in nature, with the exception of a drainage line to the south and south-east of the subject land.

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6.3 Neighbourhood Conditions

Under Clause 13.02-1S pertaining to Bushfire Planning 'neighbourhood conditions' mean conditions in the area within 400 metres of a site.



Neighbourhood conditions within 400m assessment area (Source: Google Earth)

The key features within the 400m assessment area surrounding the subject land include:

- Multiple residential properties, in the most part developed at conventional residential densities, but with some larger, low-density properties in the south-western extent. These properties represent a low threat vegetation classification.
- The predominant vegetation classification in all directions is considered low threat.
- There is some established vegetation within the assessment area, but the canopies of larger trees are sufficiently separated, and the vegetation is of insufficient width to avoid being identified as classifiable vegetation under AS3959. The ownership of the land containing the vegetation will transfer to Council as part of the proposal, which will provide certainty of ongoing management to a low fuel condition to minimise risk.
- The landform is predominantly flat, with a gentle slope in a north-easterly direction towards the foreshore.

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6.4 Bushfire Scenarios

Bushfire from the West

The most likely bushfire scenario for this site considering the landscape, will be for a fire approaching from the west, given the presence of more expansive grassland with patches of vegetation. Such a fire would have the potential for long and fast fire runs through the grassland and patches of vegetation.

Considering the climate of the area, a westerly wind represents approximately 11% of all wind direction between the months of October and April, as recorded at the Bairnsdale Airport from 1942 and current 2019 data (Bureau of Meteorology, http://www.bom.gov.au/climate/averages/tables/cw_085279.shtml), further demonstrating prevailing winds in the local climate are more likely to originate from the east or south-east, with this number being over 55%.

Considering the climate, the largely residential development and waterways presiding over these directions in the wider landscape, the subject land is deemed to be of low fire risk from natural landscape factors.

Bushfire from the North

Classifiable vegetation to the north presents a less likely scenario of a fire approaching from the north resulting from ignition within the Crown Reserve.

Large waterbodies to the north (Lake King and Jones Bay) reduce the likelihood of long fire runs associated with northerly winds.

Fire runs from this area would be limited due to the managed nature of low threat vegetation associated with residential uses, Eagle Point Caravan Park and Eagle Point Primary School Existing east-west roads (Rivermouth Road, Eagle Point Road and School Road) would interrupt long fire runs by removing fuel sources at ground level.

Localised Grass Fires

From the remaining aspects there is a minor threat from more localised grassland fires. The terrain is largely flat, and the fire threat can be mitigated by appropriate setbacks (including road reserves) and surrounding residential properties maintaining any grass yards and garden area.

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6.5 Bushfire Hazard Site Assessment

Vegetation on the subject land and the immediately surrounding area has been classified in accordance with Table 2.3 of Australian Standard AS 3959, consistent with Clause 13.02-1S of the *East Gippsland Planning Scheme*.



Aerial view of subejct land and immediate surrounds (Source: Google Earth)

Exclusions & Low Threat Vegetation

Adjoining residential development has been classified as low threat as these areas, in the most part, contain minimal vegetation and are managed, cultivated garden areas.

The linear strips of vegetation contained within the 100 metre assessment area to the northwest of the subject land are classified as excludable as they are less than 20 metres in width and are able to be maintained to satisfy a classification of excludable.

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Grassland Classification

The majority of the subject land has a vegetation classification of low threat given the presence of maintained grass and lack of understorey plantings under large trees. Noted, however, is the perimeter planting of trees along the frontage to Riley Street, earmarked for removal.

The environment will be further modified as a result of the proposed development which will see a transition to a low threat classification.

Topography

The subject land and surrounding area is gently undulating, slightly sloping down to the south-east towards the drainage line.



Contours 10m detail (Source: VicPlan)

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6.6 Other Bushfire Matters

Although there is some record of fire history within the wider landscape since the early 1970's, there is no record of bushfire history on the subject land or generally within the Eagle Point township since 1978.



Bushfires 1970 – Present, with subject land depicted as yellow star (Source: MapShare Vic)

6.7 Municipal Fire Management Plan

The *East Gippsland Shire Council Municipal Fire Prevention Plan* (October 2009) identifies the fire risk and the associated works to be undertaken to reduce risk for the Municipality.

The Plan identifies that the section of Paynesville Road just south of the subject land as a Primary Firebreak Road which is the responsibility of the Paynesville Fire Brigade.

7. Concluding Remarks

In summary the proposed Residential Village development at 27 Eagle Point Road, Eagle Point has considered the bushfire controls under the *East Gippsland Planning Scheme* and will not result in any adverse outcomes with respect to bushfire risk as appropriate bushfire mitigation measures can be put in place.

Crowther & Sadler Pty Ltd October 2024

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Residential Village: 25 Eagle Point Road, Eagle Point



18 September 2024 Prepared for Lincoln Place

IMP2405018TTA01F01



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Residential Subdivision: 27 Eagle Point Road, Eagle Point

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Company Information

Document Information

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Level 17, 31 Queen Street, Melbourne, Victoria, 3000 ABN: 78 611 424 107		Report Title	Residential Subdivision: 27 Eagle Point Road, Eagle Point
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Document Control

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Appendices

APPENDIX A Swept Path Analysis

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IMPACT[®] Snap Shot

Development Proposition							
Location	<u>37°53'39.7"S</u> 147°40'45.0"E	25 Eagle Point Road, Eagle Point					
Use		Residential Village					
Yield	209 residential sites across 4 stages Stage 1: 58 sites Stage 2: 47 sites Stage 3: 46 sites Stage 4: 58 sites						
Car Parking	1-2 car spaces per dwelling, as required 49 visitor spaces						
Access Arrangements	Single access point to Eagle Point Road Internal private road network providing direct access to dwellings						
Statutory Controls							
Particular Provisions							
Clause 52.06 - Car Parking							
Requirement vs Provision	1 space for 1-2 bedroom dwellings, 2 spaces for 3+ bedroom dwellings & 1 visitor space per 5 dwellings (41 visitor spaces. 1-2 spaces for dwelling, as appropriate. 49 visitor spaces proposed						
Adequacy of Parking Provision	The car parking provision meets the statutory requirements and is therefore considered satisfactory.						
Adequacy of Design	Accessways and car parking spaces have been assessed against the relevant design guidelines and considered to be satisfactory.						
Traffic Considerations							
Traffic Generation	The development is expected to generate in the order of 83 vehicle movements during the site's peak hour and 439 daily vehicle movements.						
Traffic Impact	Traffic generated from the site equates to approximately 1 - 2 vehicle movements every one (1) minute on average and is not expected to impact on the operation or safety of the road network.						
Conclusion							

— The proposed development satisfies relevant statutory requirements and where the statutory requirements are not explicitly met, the development is deemed to satisfy decision guidelines that allow for a reduction or waiver of the said requirement.

— There are no traffic and transport grounds that should prohibit the issue of a permit.



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2 Introduction

2.1 Engagement

IMPACT[®] have been engaged by Lincoln Place to undertake a Traffic and Transport Impact Assessment for the proposed residential village development at 25 Eagle Point Road, Eagle Point.

2.2 Scope of Engagement

This Traffic and Transport Impact Assessment has been prepared to accompany a town planning submission.

In preparing this assessment we have referenced the following:

- Development plans prepared by Hamilton Landscape Architects Pty Ltd;
- East Gippsland Shire Council Planning Scheme, specifically:
 - o Clause 52.06 Car Parking
 - Clause 65.01 Approval of an Application or Plan

2.3 Application History

The subject site currently holds an approved permit for development as a residential subdivision containing 76 sites.

A Traffic Impact Assessment (210048TIA001B-F, dated 7/9/2021) prepared by **one**mile**grid** was submitted in support the town planning application for the development



Residential Subdivision: 27 Eagle Point Road, Eagle Point

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3 Existing Conditions

3.1 Location

The subject site is located on the eastern side of Eagle Point Road as illustrated in Figure 1 and Figure 2.



Figure 1 Location of Subject Site



Figure 2 Ae

Aerial View of Subject Site



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3.2 Planning Zone

The subject site is located within the General Residential Zone (GRZ1) as illustrated in Figure 3.



Figure 3 Land Use Planning Zone

The purpose of this zone is to:

- Implement the Municipal Planning Strategy and the Planning Policy Framework.
- Encourage development that respects the neighbourhood character of the area.
- Encourage a diversity of housing types and housing growth particularly in locations offering good access to services and transport.
- Allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.

3.3 Road Network

3.3.1 Eagle Point Road

Classified as local road. Aligned in a north-south direction between School Road to the north and Paynesville Road to the south.

Along the site frontage, Eagle Point Road comprises an approximate 6.2 metre road pavement that provides one (1) trafficable lane in each direction. This section of road also comprises of unsealed shoulders located on both the western and eastern ends of the carriageway measuring approximately 0.5 - 1.0m wide.

The western end of Eagle Point Road is constrained by a row of trees.

Its typical cross-section is illustrated in Figure 4.



Figure 4

View of Eagle Point Road facing south adjacent the subject site



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3.3.2 Riley Street

Classified as local road. Aligned in an east-west direction between Bay Road to the east and a cul-de-sac to the west.

Along the site frontage, Riley Street comprises an approximate 5.5 metre road pavement that provides one (1) trafficable lane. A 0.5 - 1.0m wide shoulder is also provided on the southern end of Riley Street.

Its typical cross-section is illustrated in Figure 5



Figure 5 View of Riley Street facing east adjacent the subject site

3.4 Public Transport

Public transport to the site is afforded via the number 13 bus service operating between Bairnsdale and Paynesville via Eagle Point.

A bus stop for this route is located approximately 700 metres north-west of the subject site along Forge Creek Road.

In addition, a shuttle bus service (dial-a-bus service) currently exist that allows for pick-up/drop-off between Paynesville to Bairnsdale and Bairnsdale to Paynesville.

There is a pick-up/drop-off location located in Eagle Point with services running from 9:15am until 6:10pm on weekdays and from 9:30am to 12:20pm on weekends.



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4 Eagle Point Precinct Structure Plan

4.1 General

The Eagle Point Precinct Structure Plan (PSP) has been prepared by East Gippsland Shire Council with the assistance from Mesh Planning in 2018. This document was prepared as a planning tool to guide future planning and development in the Eagle Point area.

The subject site is located within the Eagle Point PSP as shown in Figure 6.





Future Urban Structure



4.2 Movement Network

4.2.1 Pedestrian and Public Transport

The Eagle Point PSP sets out the provisions of sustainable transport network which is to be implemented within the locality of the subject site. More notably there will be a new bus stop on the north-west corner of the site that can accommodate new/existing bus routes going through Eagle Point Road.

The Path and Public Transport Network from the Eagle Point PSP is shown in Figure 7.



Figure 7 Pedestrian and Public Transport Network Plan



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4.2.2 Road Network

The Eagle Point PSP provides information on the potential road network within the precinct and the most desirable road cross section for each proposed road type.

The proposed Road Cross-Section plan is shown in Figure 8.



Figure 8 Road Network Plan



Residential Subdivision: 27 Eagle Point Road, Eagle Point

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5 Development Proposition

5.1 Use & Yield

It is proposed to develop the subject site as a residential village, comprising:

- 209 sites ranging from 200-310sqm area
- Community area, including parkland and recreational facilities, located centrally.

The proposal contemplates developing the subject site across four (4) stages, with each stage comprising of the following yield:

- Stage 1: 58 sites
- Stage 2: 47 sites
- Stage 3: 46 sites
- Stage 4: 58 sites

The site layout plan is shown in Figure 9.





Proposed Site Layout



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5.2 Site Access

Access to the proposed development is contemplated via a single access point to Eagle Point Road.

The site access point will be designed in the form of an at-grade, fully directional, unsignalised T-intersection.

The intersection will require minor widening works to occur on the eastern end of Eagle Point Road and will utilise the existing road width. In addition, the works will not impact on the existing row of trees located to the western end of Eagle Point Road.

Emergency vehicle access is also proposed in the north-eastern corner of the site via Riley Street.

5.3 Internal Road Network Design

The proposed internal road network is contemplated to be made up of two-way, 5.5m wide, kerb to kerb roadways.

Intersections and corners are designed for simultaneous movements of B99 and B85 car design vehicles, and 8.8.m service vehicle circulation.

5.4 Car Parking

Car parking for the residential sites is planned to be provided in accordance with the relevant planning scheme requirements. That is,

- One (1) space for each 1-2 bedroom dwelling, and
- Two (2) spaces for each 3 or more bedroom dwelling.

The development also contemplates a total of 49 visitor car spaces spread throughout the development.

5.5 Waste Collection

Waste is proposed to be collected via a private waste collection service, with a waste vehicle indicatively shown as an 8.8m long rigid vehicle.

5.6 Fire Vehicle Access

Internal roadways are designed in accordance with the relevant CFA guidelines.



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6 Statutory Controls

The relevant traffic and transportation Statutory Controls are:

Particular Provisions

- Clause 52.06 Car Parking
- Clause 65.01 Approval of an Application or Plan

6.1 Clause 52.06 - Car Parking

6.1.1 Purpose

The purpose of Clause 52.06 is:

- To ensure that car parking is provided in accordance with the Municipal Planning Strategy and Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

6.1.2 Provision and Design Requirements

To satisfy the above purpose, Clause 52.06 of the Planning Scheme specifies requirements relating to the provision and design of car parking as follows:

6.1.3 Car Parking Provision Requirements - Clause 52.06-5

Table 1 to Clause 52.06-05 of the Planning Scheme provides rates for various land uses. The following applies to the proposed development:

Residential Village
 1 space to each 1 or 2 bedroom dwelling,
 2 spaces to each 3 or more bedroom dwelling, and
 1 visitor space for every 5 dwellings.

6.1.4 Proposed Provision

The development contemplates sufficient area within each site to facilitate 1 or 2 resident spaces, as appropriate, meeting the statutory requirement. The development is also planned with 49 visitor spaces. This provision exceeds the statutory requirement. The parking provision is therefore considered satisfactory.

6.1.5 Conclusion - Car Parking Provision

We can conclude that an adequate number of spaces are provided to cater for the projected demand.

Accordingly, the development proposition satisfies the purpose of Clause 52.06, specifically:

 To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.



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6.1.6 Design Standard for Car Parking - Clause 52.06 - 9

We have assessed the proposed car parking design and access arrangements against the requirements of Clause 52.06-9 of the Planning Scheme. Our findings are as follows:

6.1.6.1 Design Standard 1 - Accessways

Requirements		Design Response	Status			
Accessways Must:						
1	Be at least 3 metres wide.	Accessways are at least 5.5m wide throughout.	Comply			
2	Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide	Intersections are at least 4.2m wide throughout.	Comply			
3	Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre.	Car park is not a public car park.	N/A			
4	Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8 metres.	No overhead obstructions proposed.	N/A			
5	If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction.	Cars can exit the site in a forward direction.	Comply			
6	Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long if the accessway serves ten or more car parking spaces and is either more than 50 metres long or connects to a road in a Transport Zone 2 or Transport Zone 3.	Suitable passing area proposed at the site access point.	Comply			
7	Have a corner splay or area at least 50 percent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.	Appropriate areas are provided at the site access point and throughout the development to enable adequate sight lines for pedestrian safety.	Comply			
8	If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6 metres from the road carriageway.	Accessways do not connect to land in a Transport Zone 2 or 3.	N/A			


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6.1.6.2 Design Standard 2 - Car Parking Spaces

Re	quirements				Design Response	Status
1	Car parking spaces and accessways must have the minimum dimensions in Table 2 of Clause 52.06-9.			Car parking is designed in accordance with the relevant	Comply	
	Angle of car parking spaces to access way	Accessway width	Car space width	Car space length	dimensions in Table 2.	
	Parallel	3.6 m	2.3 m	6.7 m		
	45°	3.5 m	2.6 m	4.9 m		
	60°	4.9 m	2.6 m	4.9 m		
	90°	6.4 m	2.6 m	4.9 m		
		5.8 m	2.8 m	4.9 m		
		5.2 m	3.0 m	4.9 m		
		4.8 m	3.2 m	4.9 m		
2	A wall, fence, col structure that abo the area marked than: A column, tree of space if it is within permitted' on Dic A structure, whic 2.1 metres above	lumn, tree, tree uts a car space I 'clearance requ r tree guard, wh in the area mar agram 1 of the d h may project ir e the space.	guard or any oth must not encroa uired' on Diagran nich may project ked 'tree or colur lesign standard nto the space if it	ner Inch into In 1 other into a mn is at least	Appropriate clearances are provided to car spaces.	Comply
3	Car spaces in ga metres long and 5.5 metres wide garage or carpo	rages or carpo 3.5 metres wid for a double sp rt.	rts must be at lea e for a single spa ace measured ir	ast 6 ace and nside the	Dwelling detail to be confirmed.	N/A
4	Where parking s behind another) provided betwee	paces are provi an additional 50 en each space.	ded in tandem (a 00mm in length	one space must be	No tandem spaces currently proposed.	N/A
5	Where two or mo dwelling, at least	ore car parking t one space mu	spaces are provi st be under cove	ided for a er.	Dwelling detail to be confirmed.	N/A
6	Disabled car par accordance with Building Code of may encroach in 2 by 500mm.	king spaces mu AS 2890.6-200 Australia. Disat to an accesswo	ust be designed i 19 (disabled) and oled car parking 1y width specified	n the spaces d in Table	Disabled car parking has been designed in accordance with AS2890.6-2022.	Comply

6.1.7 Conclusion - Car Park Design

The proposed car park and accessways have been assessed and determined to have satisfied the relevant design guidelines.

Accordingly, the proposal satisfies the purpose of Clause 52.06, specifically:

— To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.



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6.2 Clause 65.01 - Approval of An Application or Plan

6.2.1 Loading Requirements and Objectives

To address the adequacy of loading for new developments, the Planning Scheme specifies the following:

— The responsible authority must consider, as appropriate, the adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.

6.2.2 Adequacy of Proposed Loading Facilities

In response to the above, we note that the development is designed with adequate roadway and intersection widths to facilitate rigid vehicles up to 8.8m in length.

Straight, dead-end aisles will be provided with an adequate area at the end of the aisle to facilitate turnaround manoeuvres.

Swept paths prepared (and attached as Appendix A) illustrate that the above vehicle is able to circulate the site in a safe and convenient matter.

6.2.3 Conclusion - Loading Arrangements

The proposed loading arrangements have been assessed and determined to have satisfied the relevant design guidelines / principles contained within Clause 65.01 and AS2890.2:2018.

Accordingly, it is considered that the proposal:

 Provides adequate vehicle loading and uploading facilities, which will not result in associated amenity, traffic flow and safety impacts.



Residential Subdivision: 27 Eagle Point Road, Eagle Point

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7 Traffic Considerations

7.1 Traffic Generation

The proposed development is expected to generate traffic akin to an over-55s lifestyle estate.

The Roads and Maritime Services (RMS) published a Technical Direction Memorandum in 2013 which summarised the undertaking of extensive parking and traffic movement demand surveys for a arrange of land uses, including housing for seniors, (i.e low care residential village).

The surveys revealed the following rates inclusive of commercial and village / courtesy bus movements across eight (8) comparable sites:

Peak Hour: 0.4 movements per unitDaily: 2.1 movements per unit

Application of the above rates to the proposed 209 residential sites yields the following traffic volumes:

— Site Peak Hour:

— Daily:

84 movements 439 movements

7.2 Traffic Impact

As per the **one**mile**grid** traffic impact assessment, surveys conducted by Trans Traffic Survey indicated that Eagle Point Road experience average weekday volumes of 464 vehicle movements or approximately 50 vehicle movements during the peak period.

The site is expected to generate up to 84 peak hour movements equating to approximately 1 - 2 vehicle movements every one (1) minute on average.

In addition, the application of the site generated peak traffic with the existing peak hour traffic yields a total of 134 peak hour movements along Eagle Point Road.

This level of traffic is considered to be minimal and is not expected to impact on the safety or operation of the road network.



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APPENDIX A Swept Path Analysis

Design Vehicles:

- —B85 Car
- —B99 Car
- -8.8m Service Vehicle





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1.V

REFER TO IMP2405018-DRG-01-03 FOR DETAILED PLAN

Date 2024-09-18 Drawn / Approved WH / TD Title TRAFFIC AND TRANSPORT ASSESSMENT SITE LAYOUT PLAN Drawing Number Revision IMP2405018 - DRGF0ringted 7/11/2024

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Residential Village: 25 Eagle Point Road, Eagle Point

Waste Management Plan

18 September 2024 Prepared for Lincoln Place

IMP2405018WMP01F01



Printed 7/11/2024 Page 163 of 181

Residential Village: 25 Eagle Point Road, Eagle Point

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Company Information

Document Information

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Document Control

Version	Date	Author
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APPENDIX B	Swept Path Analysis



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Introduction

1.1 Engagement

IMPACT[®] have been engaged by Lincoln Place to prepare a Waste Management Plan (WMP) for the proposed residential village at 27 Eagle Point Road, Eagle Point.

1.2 Scope of Engagement

This Waste Management Plan has been prepared to accompany a town planning submission.

In preparing this assessment we have referenced the following:

- Development plans prepared by Hamilton Landscape Architects
- East Gippsland Shire Council Waste Services Policy
- East Gippsland Shite Council's Waste Management Action Plan 2022-2032
- Sustainability Victoria's 'Waste Management and Recycling in Multi-Unit Developments Better Practice Guide'

2 Existing Conditions

2.1 Location

The subject site is located on the eastern side of Eagle Point Road as illustrated in Figure 1.



Figure 1

Location of Subject Site



Residential Village: 25 Eagle Point Road, Eagle Point

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2.2 Planning Zone

The subject site is located within the General Residential Zone (GRZ1) as illustrated in Figure 2.

Figure 2 Land Use Planning Zone

The purpose of this zone is to:

- Implement the Municipal Planning Strategy and the Planning Policy Framework.
- Encourage development that respects the neighbourhood character of the area.
- Encourage a diversity of housing types and housing growth particularly in locations offering good access to services and transport.
- Allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.



Residential Village: 25 Eagle Point Road, Eagle Point

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3 Development Proposition

3.1 Use and Yield

It is proposed to develop the subject site as a residential village, comprising:

- 209 site, ranging from 200-310sqm area
- Community area, including parkland and reactional facilities, located centrally.

The proposal contemplates developing the subject site across four (4) stages, with each stage comprises the following yield:

- Stage 1: 58 sites
- Stage 2: 47 sites
- Stage 3: 46 sites
- Stage 4: 58 sites

The site layout plan is shown in Figure 3.



Figure 3 Proposed Site Layout

3.2 Site Access

Access to the proposed development is contemplated via a single access point to Eagle Point Road. The site access point will be designed in the form of an at-grade, fully directional, unsignalised T-intersection.

The internal road network will operate as a private asset for the development.



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4 Objectives

The primary objective of this WMP is to:

- Identify all potential waste streams likely to be generated on site; and
- Provide a description of how waste is likely to be stored, handled, processed and disposed of, or reused and recycled.

This WMP seeks to establish principles by which the design, provision and maintenance of services and infrastructure that enable garbage, recycling, organics and bulky waste services to be operated at the development site in the best possible way in order to improve resource recovery and align with the principles of waste hierarchy.



5 Waste Generation

The Better Practice Guide to Waste Management and Recycling in Multi-Unit Developments recommends the following waste generation rates for individual dwellings:

- Garbage: 120 L / Week;
- Recycling: 120 L / Week

Furthermore, we note that the guide states that approximately 35% of garbage generated is made up of food organic waste.

To this end, each dwelling is expected to generate waste for each stream at the following rates:

- Garbage: 78 L / week;
- Recycling: 120 L / week; and
- FOGO: 42 L / week

Considering the 209 lots proposed, the development is expected to generate the following volumes of waste for each stream:

- Garbage: 16,302 L / week;
- Recycling: 25,080 L / week; and
- FOGO: 8,778 L / week



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6 Equipment and Systems

6.1 Bins

It is proposed to utilise a private waste collection contractor to service the proposed development.

Each lot will be allocated:

- One (1) x 240 L garbage bin, and
- One (1) x 240 L recycling bin.

It is proposed to utilise communal organic waste bins located sporadically throughout the site. A total of 37 x 240 L organic bins is proposed.

With reference to Council's Waste Management Action Plan, it is noted that while there is no organic waste recycling facility established within the council area, it is Council's plan to provide a facility in the near future. The provision of organic waste bins will ensure that community behaviours are established to best utilise these services.

Indicative bin dimensions are provided in Table 1.

Table 1Bin Dimensions

Bin Size (L)	Height (mm)	Depth (mm)	Width (mm)
240 L	1,080	735	580

The above dimensions are sourced from Sustainability Victoria's 'Waste Management and Recycling in Multi-Unit Developments Better Practice Guide' and are subject to change between manufacturers.

A private bin collection arrangement is recommended; thus, the bin colours can be adopted from options provided in AS4123.7 and labelled accordingly to identify the waste generator and site address.

6.2 Location

Garbage and recycling bins are to be located within each lot in a suitable location, typically within a garage or yard. If bins are to be kept within the front area, bins should be screened from view, as appropriate, to not detract from the amenity of the streetscape.

The communal organic bins shall be located throughout the site, as shown in the scaled site layout plan attached in Appendix A

6.3 Collection Frequency

The collection frequency for each waste type and stream is summarised in Table 2.

Component	Weekly Waste Generation	Bin Capacity	Collection Frequency
Garbage	78 L per lot	240 L per lot	Once a Fortnight
Recycling	120 L per lot	240 L per lot	Once a Fortnight
FOGO	8,778 L (site total)	8,880 L (site total)	Once a Week

Table 2 Waste Collection Frequency



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6.4 Collection Arrangements

6.4.1 Waste Disposal

Garbage shall be placed within tied plastic bags prior to being transferred to the designated waste bin.

Cardboard shall be flattened and recycling containers un-capped, drained, and rinsed prior to disposal into the appropriate bin. Bagged recycling is not permitted.

Each dwelling shall be provided with a kitchen caddy and compostable caddy liners to assist with the segregation of food waste generated by residents before being placed in the nearest communal organic waste bin.

6.4.2 Waste Collection

6.4.2.1 Collection Location

The garbage and recycling waste bins shall be collected from the nearest convenient kerbside of each lot. Residents will be responsible for wheeling their bins to the nearest kerb that is serviceable by the nominated waste collection vehicle, as indicatively shown in the site layout plan attached in Appendix A

Bins should be spaced with 1m clearance between adjacent bins and street funiture.as per Figure 4.



Figure 4 Recommended Bin Placement Arrangements

Bins shall be taken out no earlier than the night before collection and back to their dwelling (in the evening after collection) to avoid amenity impacts.

Organic waste bins are to be collected from their communal storage location.

6.4.2.2 Collection Vehicle

Waste bins shall be collected by a side-loader waste collection truck.

A swept path analysis, provided as Appendix B confirms that the development plans make adequate provision for the safe and convenient manoeuvring of an 8.8m rigid vehicle.



Residential Village: 25 Eagle Point Road, Eagle Point

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With respect to communal green waste, it is recommended that green waste generated by the garden areas of the site are collected by the garden maintenance contractors and disposed of by those contractors.

Note: The site manager shall be responsible for managing the waste system and for developing and implementing adequate safe operating procedures.

6.5 Amenity Management

6.5.1 Washing, Ventilation and Vermin-Prevention Measures

Each resident shall maintain, wash, sanitise/deodorise and arrange vermin prevention measures for their individual bins and bin area as required.

The site manager will be responsible for the above management of the communal organic bins.

6.5.2 Noise Reduction Measures

Residents will be required to wheel their bins out for collection the night before collection day to avoid amenity impacts. The collection bins will also have rubber wheels for quiet rolling during transfers.

The hours of waste collections shall be as specified in Council's local laws and / or in accordance with the Victorian EPA Noise Control Guideline, which sets out the following requirements:

- Collection occurring once a week should be restricted to the hours: 6am to 6pm Monday to Saturday.
- Collections occurring more than once a week should be restricted to the hours: 7am to 6pm Monday to Saturday.
- Compaction should only be carried out while on the move.
- Bottles should not be broken up at the point of collection.
- Routes which service entirely residential areas should be altered regularly to reduce early morning disturbance.
- Noisy verbal communication between operators should be avoided where possible

6.5.3 Stormwater Pollution Prevention

To prevent stormwater pollution, each resident will be required to:

- Ensure all waste is disposed into bins;
- Ensure rubbish and recycling items are secured so they can't blow away;
- Keep bins closed to prevent animals from searching through waste; and
- Make sure any bin spillage is cleaned up using dry absorbent materials (such as sand, sawdust or paper towel, as required).

6.5.4 Other Waste Streams

6.5.4.1 Hard Waste

Hard waste can be taken to a nearby landfill/transfer station to be disposed of. The closest landfill facility is currently the Bairnsdale Regional Landfill, located approximately 5km west of the subject site.

6.5.4.2 E-Waste

Any e-waste (mobile phones, computers, household appliances, etc) is expected to be recycled at allocated drop ff points in the locality.

E-waste drop-off points include:



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- Bairnsdale landfill/transfer station facilities
- Lakes Entrance landfill/transfer station facilities
- Officeworks, Aldi, Telecommunication (Optus, Vodafone, Telstra) stores

6.6 Communication Strategy

To ensure minimal contamination and maximised recycling, waste bins should be clearly marked and signed with the appropriate information as indicatively shown below, or equivalent to indicate the appropriate disposal of different waste streams.



6.7 Responsibility

The site manager will be responsible for implementing the Waste Management Plan and providing residents / cleaning contractors with correct and current information and operating practices as required.

The site manager will be responsible for engaging and managing the waste collection contractor, including frequency of collections, and monitoring the transfer of bins between the bin room and collection vehicle.

The site manager will be responsible for ensuring occupants and owners receive a copy of the endorsed Waste Management Plan, including when occupancy and ownership changes.

Additionally, the site manager must ensure that a copy of the endorsed Waste Management Plan is provided to occupants annually.



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6.8 Contact Information

6.8.1 Council

East Gippsland Shire Council	Local Council	ph 03 5153 9500
6.8.2 Suppliers / Contractors		
Tambo Waste	Council /Private Waste Collector	ph 1300 131 807
EG Waste:	Private Waste Collector	ph 0467 892 444
Bairnsdale Waste	Private Waste Collector	ph 03 5152 1770
Waste Wise Environmental	Private Waste Collector	ph 03 9359 1555
Sulo MGB Australia	Bin supplier	ph 1300 364 388

6.8.3 Other Useful Contacts

Sustainability Victoria

ph 1300 363 744

Online: <u>www.sustainability.vic.gov.au</u> Online: <u>www.cleanaway.com.au</u>

Cleanaway

7 Limitations

This Waste Management Plan is intended to inform and accompany a town planning application.

The waste generation data presented in this report are estimates only based on the existing operations. Actual waste generation characteristics could vary month to month depending on demand and productivity. Accordingly, it is our expectation that the Building Manager / Site Operator will adjust the recommended strategy to respond to actual operational conditions post development. These adjustments could include, but are not limited to increasing the number of bins and or increasing the collection frequency - Subject to Council Approval.

To this end, Subject to Council request, changes in legal requirements, changes in the development's needs and / or waste patterns (waste composition, volume or distribution), or to address unforeseen operation issues, the operator shall be responsible for coordinating the necessary Waste Management Plan revisions, including (if required):

- A waste audit and new waste strategy;
- Revision of the waste systems (bin sizes / quantity / streams / collection frequency);
- Re-education of tenants;
- Revision of the services provided by the waste collector(s); and
- Any necessary statutory approval(s).



Residential Village: 25 Eagle Point Road, Eagle Point

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APPENDIX A Scaled Site Layout Plan





Residential Village: 25 Eagle Point Road, Eagle Point

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APPENDIX B Swept Path Analysis

Design Vehicle: 8.8m Service Vehicle













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