



Attachment to item number 4.2 -
Planning Report, Stormwater Design Report,
Bushfire Hazard Report and Titles

Planning Submission

212 Greens Road, Sorell

Subdivision 1 lot into 4



Sorell Council

Development Application: Subdivision Application - 212
Greens Road, Orielton.pdf
Date Received: 21/ 11 / 2022
Plans Referenced: P1

Table of Contents

1. Introduction	3
2. Site Description	3
3. Proposal	3
4. Sorell Interim Planning Scheme 2015	Error! Bookmark not defined.
5. Conclusion.....	12

Apendicies:

- Appendix A – Certificate of Title
- Appendix B – Proposal Plan
- Appendix C – Bushfire Hazard Management Report
- Appendix D – Stormwater Design Report
- Appendix E – Waterwater System Assessment

1. Introduction

This submission is prepared in support of an application to subdivide 212 Greens Road, Orielton.

This development application is made pursuant to Section 57 of the *Land Use Planning and Approvals Act 1993*.

2. Site Description

The subject site is contained in two parcels of land, Certificate of Title 167839/1 and Certificate of Title 167839/2. Copies of the titles are provided at Appendix A of this submission.



Figure 1: Aerial Image of the site

The site is zoned Rural Living and is mapped within the Bushfire Prone Area overlay.

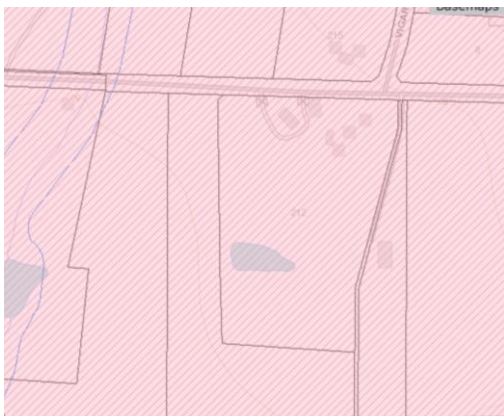


Figure 2: Zoning Map



3. Proposal

It is proposed to subdivide CT182990/1 into 4 residential lots. The overall site has approval for a fourteen lot subdivision in SA2020/28-1. This proposal concerns Lot 1 of that approval.



Figure 3: Approved Plan SA2020/28-1

The proposed plan of subdivision is provided at Appendix B of this report, each lot is summarised as below.

Lot Number	Area	Frontage
1	1.034	41.09
16	1.007	69.69
17	1.124	70.77
18	.894	60.32

Table 1: Lot areas and frontages

4. Tasmanian Planning Scheme – Sorell

11.1 Zone Purpose

The purpose of the Rural Living Zone is:

11.1.1

To provide for residential use or development in a rural setting where:

- (a) services are limited; or
- (b) existing natural and landscape values are to be retained.

11.1.2

To provide for compatible agricultural use and development that does not adversely impact on residential amenity.

11.1.3

To provide for other use or development that does not cause an unreasonable loss of amenity, through noise, scale, intensity, traffic generation and movement, or other off site impacts.

11.1.4

To provide for Visitor Accommodation that is compatible with residential character.

11.4 Development Standards for Buildings and Works

11.5 Development Standards for Subdivision

11.5.1 Lot design

<p>Objective: That each lot:</p> <ul style="list-style-type: none"> (a) has an area and dimensions appropriate for use and development in the zone; (b) is provided with appropriate access to a road; and (c) contains areas which are suitable for residential development. 		
Acceptable Solution	Performance Criteria	Assessment
<p>A1 Each lot, or a lot proposed in a plan of subdivision, must:</p> <ul style="list-style-type: none"> (a) have an area not less than specified in Table 11.1 and: (i) be able to contain a minimum area of 15m x 20m clear of: 	<p>P1 Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have sufficient useable area and dimensions suitable for its intended use, having regard to:</p> <ul style="list-style-type: none"> (a) the relevant requirements for 	<p>A1</p> <ul style="list-style-type: none"> (a) Table 11.1 Rural Living Zone minimum lot sizes - 1ha. Lots 1, 16 & 17 have a lot size of 1ha or greater. Lot 18 has a lot size of 0.894ha. <p>P1 Lot 18 has sufficient area for a residential lot. The lot size is consistent with other lots in</p>

<p>a. all setbacks required by clause 11.4.2 A2 and A3; and</p> <p>b. easements or other title restrictions that limit or restrict development; and</p> <p>(ii) existing buildings are consistent with the setback required by clause 11.4.2 A2 and A3;</p> <p>(b) be required for public use by the Crown, a council or a State authority;</p> <p>(c) be required for the provision of Utilities; or</p> <p>(d) be for the consolidation of a lot with another lot provided each lot is within the same zone.</p>	<p>development of existing buildings on the lots;</p> <p>(b) the intended location of buildings on the lots;</p> <p>(c) the topography of the site;</p> <p>(d) any natural or landscape values;</p> <p>(e) adequate provision of private open space; and</p> <p>(f) the pattern of development existing on established properties in the area, and must be no more than 20% smaller than the applicable lot size required by clause 11.5.1 A1.</p>	<p>the area located on the Tasman Highway, Abruzzi Court and Greens Road.</p>
<p>A2 Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a frontage not less than 40m.</p>	<p>P2 Each lot, or a lot proposed in a plan of subdivision, must be provided with a frontage or legal connection to a road by a right of carriageway, that is sufficient for the intended use, having regard to:</p> <p>(a) the width of frontage proposed, if any;</p> <p>(b) the number of other lots which have the land subject to the right of carriageway as their sole or principal means of access;</p> <p>(c) the topography of the site;</p> <p>(d) the functionality and useability of the frontage;</p> <p>(e) the ability to manoeuvre vehicles on the site; and</p>	<p>A2 Each lot has a frontage of 40m or more.</p>

	(f) the pattern of development existing on established properties in the area, and is not less than 3.6m wide.	
A3 Each lot, or a lot proposed in a plan of subdivision, must be provided with a vehicular access from the boundary of the lot to a road in accordance with the requirements of the road authority.	P3 Each lot, or a lot proposed in a plan of subdivision, must be provided with reasonable vehicular access to a boundary of a lot or building area on the lot, if any, having regard to: (a) the topography of the site; (b) the length of the access; (c) the distance between the lot or building area and the carriageway; (d) the nature of the road and the traffic; (e) the anticipated nature of vehicles likely to access the site; and (f) the ability for emergency services to access the site.	A3 Each lot has access from a public road.

11.5.2 Roads

<p>Objective: That the arrangement of new roads with a subdivision provides:</p> <p>(a) safe, convenient and efficient connections to assist accessibility and mobility of the community;</p> <p>(b) adequate accommodation of vehicular, pedestrian, cycling and public transport traffic; and</p> <p>(c) the efficient ultimate subdivision of the entirety of the land and of surrounding land.</p>		
Acceptable Solution	Performance Criteria	Assessment
A1 The subdivision includes no new roads.	P1 The arrangement and construction of roads within a subdivision must provide an appropriate level of access, connectivity, safety,	A1 The subdivision contains no new roads. The road was



Sorell Council

Development Application: Subdivision Application - 212
Greens Road, Orielton.pdf
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	<p>convenience and legibility for vehicles, having regard to:</p> <p>(a) any relevant road network plan adopted by the council;</p> <p>(b) the existing and proposed road hierarchy;</p> <p>(c) maximising connectivity with the surrounding road network;</p> <p>(d) appropriate access to public transport; and</p> <p>(e) access for pedestrians and cyclists.</p>	constructed in accordance with SA2020/28.
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11.5.3 Services

<p>Objective: That the subdivision of land provides services for the future use and development of the land.</p>		
Acceptable Solution	Performance Criteria	Assessment
<p>A1 Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must:</p> <p>(a) be connected to a full water supply service if the frontage of the lot is within 30m of a full water supply service; or</p> <p>(b) be connected to a limited water supply service if the frontage of the lot is within 30m of a limited water supply service, unless a regulated entity advises that the lot is unable to be connected to the relevant water supply service.</p>	<p>P1 No Performance Criterion.</p>	<p>A1 Each lot can be connected to services.</p>
<p>A2 Each lot, or a lot proposed in a plan of subdivision, excluding within Rural Living</p>	<p>P2 Each lot, or a lot proposed in a plan of subdivision, excluding within Rural Living</p>	<p>P2 Each lot is capable of containing on site waste water treatment.</p>

<p>Zone C or Rural Living Zone D or for public open space, a riparian or littoral reserve or Utilities, must:</p> <p>(a) be connected to a reticulated sewerage system; or</p> <p>(b) be connected to a reticulated sewerage system if the frontage of each lot is within 30m of a reticulated sewerage system and can be connected by gravity feed.</p>	<p>Zone C or Rural Living Zone D or for public open space, a riparian or littoral reserve or Utilities, must be capable of accommodating an on-site wastewater treatment system adequate for the future use and development of the land.</p>	
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Codes

C1.0 Signs Code – Not applicable

C2.0 Car Parking and Sustainable Transport Code – Not applicable

C3.0 Road and Railway Assets Code

C3.1 Code Purpose

The purpose of the Road and Railway Assets Code is:

C3.1.1

To protect the safety and efficiency of the road and railway networks; and

C3.1.2

To reduce conflicts between sensitive uses and major roads and the rail network.

C3.2 Application of this Code

C3.2.1

This code applies to a use or development that:

- (a) will increase the amount of vehicular traffic or the number of movements of vehicles longer than 5.5m using an existing vehicle crossing or private level crossing;
- (b) will require a new vehicle crossing, junction or level crossing; or
- (c) involves a subdivision or habitable building within a road or railway attenuation area if for a sensitive use.

C3.4 Use or Development Exempt from this Code

C3.4.1 There are no exemptions from this code.

C3.5 Use Standards

C3.5.1 Traffic generation at a vehicle crossing, level crossing or new junction

<p>Objective:</p> <p>To minimise any adverse effects on the safety and efficiency of the road or rail network from vehicular traffic generated from the site at an existing or new vehicle crossing or level crossing or new junction.</p>		
Assessment	Performance Criteria	Assessment
<p>A1.1</p> <p>For a category 1 road or a limited access road, vehicular traffic to and from the site will not require:</p> <p>(a) a new junction;</p> <p>(b) a new vehicle crossing; or</p> <p>(c) a new level crossing.</p> <p>A1.2</p> <p>For a road, excluding a category 1 road or a limited access road, written consent for a new junction, vehicle crossing, or level crossing to serve the use and development has been issued by the road authority.</p> <p>A1.3</p> <p>For the rail network, written consent for a new private level crossing to serve the use and development has been issued by the rail authority.</p>	<p>P1</p> <p>Vehicular traffic to and from the site must minimise any adverse effects on the safety of a junction, vehicle crossing or level crossing or safety or efficiency of the road or rail network, having regard to:</p> <p>(a) any increase in traffic caused by the use;</p> <p>(b) the nature of the traffic generated by the use;</p> <p>(c) the nature of the road;</p> <p>(d) the speed limit and traffic flow of the road;</p> <p>(e) any alternative access to a road;</p> <p>(f) the need for the use;</p> <p>(g) any traffic impact assessment; and</p> <p>(h) any advice received from the rail or road authority.</p>	<p>A1.1</p> <p>Not applicable</p> <p>A1.2</p> <p>Not applicable</p> <p>A1.3</p> <p>Not applicable</p> <p>A1.4</p> <p>Table C3.1 Acceptable increase in average annual daily traffic to and from the site (total of ingress and egress). Vehicle crossings on other roads 20% or 40 vehicle movements per day, whichever is the greater. Three additional lots will result in approximately 27 movements.</p> <p>A1.5</p> <p>Vehicles can leave the site in a forward manner.</p>

<p>A1.4</p> <p>Vehicular traffic to and from the site, using an existing vehicle crossing or private level crossing, will not increase by more than:</p> <p>(a) the amounts in Table C3.1; or</p> <p>(b) allowed by a licence issued under Part IVA of the Roads and Jetties Act 1935 in respect to a limited access road.</p> <p>A1.5</p> <p>Vehicular traffic must be able to enter and leave a major road in a forward direction.</p>		
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C3.6 Development Standards for Buildings or Works

C3.7 Development Standards for Subdivision

C3.7.1 Subdivision for sensitive uses within a road or railway attenuation area – Not applicable

C4.0 Electricity Infrastructure Protection Code – Not applicable

C5.0 Telecommunications Code – Not applicable

C6.0 Local Historic Heritage Code – Not applicable

C7.0 Natural Values Code – Not applicable

C8.0 Scenic Protection Code – Not applicable

C9.0 Attenuation Code - Not applicable

C10.0 Coastal Erosion Hazard Code – Not applicable

C11.0 Coastal Inundation Code – Not applicable

C12.0 Flood Prone Hazard Code – Not applicable

C13.0 Bush Fire Prone Areas Code

This Code is relevant. Scott Livingston has provided an exemption.

C14.0 Potentially Contaminated Land Code – Not applicable

C15.0 Landslip Hazard Code - Not Applicable

C16.0 Safeguarding of Airports Code – Not applicable

5. Conclusion

The proposed subdivision can be considered by Council as a discretionary application in accordance with the provisions of the Tasmanian Planning Scheme - Sorell. The application relies on a number of performance criteria, however the proposed subdivision demonstrates it can meet these performance criteria.

Appendix A: Certificate of Titles

Appendix B: Plan of Subdivision

Appendix C: Bushfire Hazard Management Plan

Appendix D: Stormwater Design Report

Appendix E: Waste Water System Assessment



Sorell Council

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PROPOSED SUBDIVISION BUSHFIRE HAZARD REPORT - 212 GREENS ROAD, ORIELTON

DOCUMENT INFORMATION	
PROJECT ADDRESS:	212 GREENS ROAD, ORIELTON
DOCUMENT TITLE:	PROPOSED SUBDIVISION BUSHFIRE HAZARD REPORT
DOCUMENT NUMBER:	22R110-01-2
DATE OF REPORT:	7 July 2022
CLIENT:	JAC Multi Asset Pty Ltd
REPORT AUTHOR:	Dean Grannetia, BE MIEAust, BFP - P
CHECKED BY:	Tom O'Connor, TFS



REVISION HISTORY					
Revision Number	Revision Description	Prepared By	Reviewed By	Authorized By	Date of Issue
0	Draft	Dean Grannetia	Tom O'Connor	Jane Sargison	07/07/2022
1	Final	Dean Grannetia	Tom O'Connor	Jane Sargison	19/07/2022



EXECUTIVE SUMMARY

This Bushfire Risk Assessment has been prepared to support the subdivision of 3 lots and balance at 212 Greens Road, Orielton. The site is located within a bushfire prone area and has been deemed to be bushfire prone due to the grassland and scrub surrounding the site.

This report has been prepared in conjunction with the design plans provided by the designer and this report must be read in conjunction with the specifications contained in those plans.

This report identifies the protective management measures that must be incorporated into the subdivision at a planning stage to ensure compliance with the standards. Bushfire management solutions are defined in Planning Directive No. 5.1 – Bushfire-Prone Areas Code.

Provided the bushfire management measures as per Section 3 of this report and the Bushfire Hazard Management Plan being provided is established and maintained, the new subdivision lots are capable of compliance with the Bushfire Prone Areas Code of the Interim Planning scheme and as a result, the bushfire risk is reduced.

Limitations

The effectiveness of the measures and recommendations detailed in this report and AS 3959-2018 are dependent on their implementation and maintenance for the life of the development or until the site characteristics that this assessment has been measured from alter from those identified. No liability can be accepted for actions by lot owners, Council or government agencies which compromise the effectiveness of this report.

Disclaimer

The assessor has taken all reasonable steps to ensure that the information provided in this assessment is accurate and reflects the conditions on and around the site and allotment on the date of this assessment.

While measures outlined in this report are designed to reduce the bushfire risk to the dwelling, due to the unpredictable nature of wildfires and impacts of extreme weather conditions the survival of the structure during a fire event cannot be guaranteed.

This report has been prepared by Dean Grannetia BFP – P under mentorship from Tom O'Connor TFS.

Site survey was carried out on 24/06/2022.



Table of Contents

EXECUTIVE SUMMARY.....	3
1.0 INTRODUCTION.....	5
1.1 LOCATION	5
1.2 SITE DESCRIPTION.....	6
1.3 PROPOSED DEVELOPMENT.....	7
2.0 BUSHFIRE ATTACK LEVEL ASSESSMENT.....	7
3.0 BUSHFIRE MANAGEMENT MEASURES	8
3.1 Construction Requirements.....	8
3.2 Property Access	9
3.3 Water Supply for Firefighting	9
3.4 Provision of Hazard Management Area.....	10
4.0 CONCLUSIONS & RECOMMENDATIONS.....	11
5.0 LIMITATIONS OF PLAN	11
6.0 REFERENCES.....	11

Appendix A – Planning scheme tables

Appendix B – Site Photos

Appendix C – Bushfire Hazard Management Plan



1.0 INTRODUCTION

The following Bushfire Hazard Assessment report has been undertaken to accompany a subdivision proposal for 3 new lots + balance (with existing building) at 212 Greens Road, Orielton.

The proposed subdivision is within the Bushfire Prone Area overlay identified by the Sorell interim planning scheme and is exposed to a bushfire threat from grassland on surrounding private land and within the lot.

This report includes an assessment of the Bushfire Attack Level (BAL) using the simplified procedure and outlines the requirements to be implemented on site to achieve compliance with the Bushfire-Prone Areas Code of the Sorell interim planning scheme.

1.1 LOCATION

Property Address: 212 Greens Road, Orielton
Title Owner: T. & K. Clarke
Title Reference: 182990/1
PID No.: 3311074
Municipal Area: Sorell interim planning scheme
Zoning: 13.0 Rural Living
Planning Scheme Overlay: Bushfire Prone Area

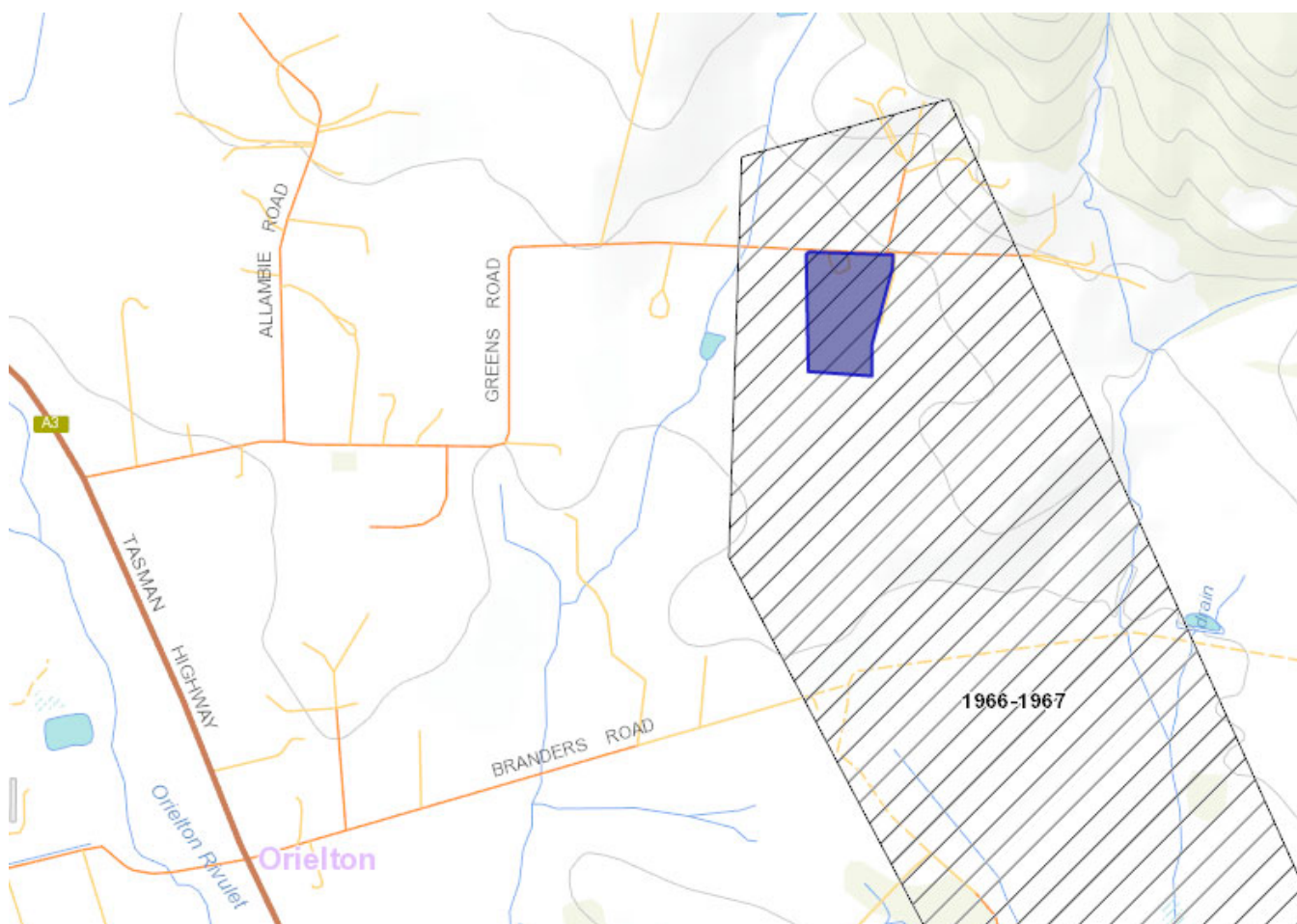


Figure 1: Location of site and fire history (Source: the LIST)

1.2 SITE DESCRIPTION

The 4.059ha lot at 212 Greens Road, Orielton, is situated approximately 2.0km from the Tasman Highway. The lot and surrounding lots are zoned rural living with significant agricultural and rural resource zones in the greater area.

The lot has an existing dwelling and a few nearby sheds contained within a landscaped area with frontage access onto Greens Road, the land within the lot has been cleared for agricultural use and is primarily grassland with occasional tree lines adjacent fencing. Near the south end of the lot there is an existing dam. The lot has access to power and comms but is not within water serviced land.

The natural topography of the site has an incline of approximately 2 degrees to the north-east

No assessment has been completed regarding the details of any significant environmental features, threatened species, or Aboriginal objects or places situated at the site.

Please refer to **Appendix B** for photos from the site taken on 24/06/2022.



Figure 2: Aerial imagery of site (Source: Nearmap)

1.3 PROPOSED DEVELOPMENT

The proposed subdivision is for the addition of 3 new lots, balance and associated property accesses.

The subdivision will also require the establishment and maintenance of a bushfire hazard management area (HMA) to provide protection for the new lots and the existing dwelling on the balance lot as well as the installation of a 10kL static fire-fighting water supply for the existing dwelling. There is no proposed staging of the subdivision.

Refer to civil documentation by JSA Engineers for design plans.

2.0 BUSHFIRE ATTACK LEVEL ASSESSMENT

<u>Bushfire Hazard:</u>	Grassland
<u>Bushfire Attack Mechanisms:</u>	Ember attack, wind, smoke and radiant heat flux (<19kw/m ²).
<u>Bushfire Threat Direction:</u>	The main bushfire threat is ember attack that will come from the south and east due to the longer fire runs and fuel load respectively.
<u>Fire Danger Index:</u>	FDI 50 (Fire risk rating applied across Tasmania)
<u>Vegetation & Slope:</u>	Vegetation within 100m of the subdivision area is described as Agricultural land (FAG) by TASVEG. Onsite assessment has identified the vegetation as pasture and has been assessed as Classification G: Grassland Note: the existing dwelling is surrounded by managed gardens and trees along fence lines that are considered low threat vegetation.
<u>Significant Natural Values:</u>	N/A

Proposed Lot 1 - balance (existing house)

Direction of slope	North	East	South	West
Vegetation Type	Grassland (G)	Grassland (G)	Grassland (G)	Grassland (G)
Distance to classified vegetation (m)	25m	>100m	28m	22m
Effective slope under vegetation	Upslope	Upslope	Downslope >0 to 5 degrees	Downslope >0 to 5 degrees
Current BAL value	12.5	LOW	12.5	12.5
Minimum separation Distance required to achieve BAL-19	10m	10m	11m	11m
Minimum separation Distance required to achieve BAL-12.5	14m	14m	16m	16m

Table 1 – Summary of Bushfire Site Assessment

* Managed land includes existing residences, road reserve and associated landscaping.

Proposed Lots 2, 3 & 4

Direction of slope	North	East	South	West
Vegetation Type	Grassland (G)	Grassland (G)	Grassland (G)	Grassland (G)
Distance to classified vegetation (m)	0m	0m	0m	0m
Effective slope under vegetation	Upslope	Upslope	Downslope >5 to 10 degrees	Downslope >0 to 5 degrees
Current BAL value	BAL FZ	BAL FZ	BAL FZ	BAL FZ
Separation Distance required to achieve BAL-19	10—<14m	10—<14m	11—<16m	11—<16m
Separation Distance required to achieve BAL-12.5	14—<50m	14—<50m	16—<50m	16—<50m

Table 2 – Summary of Bushfire Site Assessment

3.0 BUSHFIRE MANAGEMENT MEASURES

The proposed subdivision is located within bushfire-prone area as identified in the Sorell Interim Planning Scheme overlay. The bushfire hazard to the proposed lots have been assessed using the simplified procedure as per AS3959-2018 and it has been found that there is a risk of Bushfire attack from embers, smoke and wind. As such the proposed subdivision must comply with the Bushfire-Prone Areas Code (issued as Planning Directive No. 5.1) to ensure that the use and development is designed, located, serviced and constructed, to reduce the risk to human life, property and the cost to the community, caused by bushfires.

Appendix A of this report tabulates the specifications for standards set out in PD5.1 for subdivisions. This proposal must comply with this directive as set out in Section 3 below.

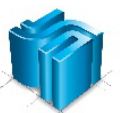
3.1 Construction Requirements

Requirements:

The planning scheme does not specify construction requirements for subdivisions.

Recommendations:

Future building design will be required to comply with bushfire requirements applicable under the Building Regulations 2016, AS3959-2018 and assessed by a building surveyor prior to construction. Any future building works that is sited and designed in accordance with the subdivision BHMP may rely on it for compliance purposes for up to 6 years from certification.



3.2 Property Access

Requirements:

	Development standards	Requirement	Compliance
E1.6.2	Public and fire-fighting access	A1 (b)	<p>The engineering design of the proposed public access road will comply with Table E1 of PD 5.1 The proposed road will need to be constructed prior to the sealing of new titles.</p> <p>Each private access will comply with Table E2 of PD 5.1. All will have greater than 30m long driveways. A turning area and hardstand will be provided for in each lot. There will be a turning area at the end of the proposed road. For the balance lot this must occur prior to sealing of titles and will be confirmed by Council. For the new lots the works must be completed prior to occupancy of any future buildings.</p>

Public road is to be constructed in accordance with the requirements of table E1 in **appendix A**.
 Individual access to lots to be in accordance with the requirements of table E2 in **appendix A**.

Recommendations:

A new public road is to be constructed to service the proposed lots, a cul-de-sac will be required at the end of the road to facilitate turning.
 Each lot is to be provided with a crossover to the boundary of the lot in accordance with the LGAT standard drawings and Council's requirements. The existing access from Greens road to the balance lot is acceptable.

3.3 Water Supply for Firefighting

Requirements:

	Development standards	Requirement	Compliance
E1.6.3	Provision of water supply for fire-fighting purposes	A2 (a)	<p>The balance lot will need a table E5 compliant water tank and fittings installed immediately adjacent the existing hardstand area near the house prior to sealing of new titles. The existing hardstand and access drive is compliant with E2</p> <p>Future habitable building areas on lots 2,3 & 4, will need a water supply compliant with table E5 and within 90m of the static water supply as measured by hose lay. Water supply must be installed and operational before occupancy and verified by a building surveyor.</p>

Each lot will require a static water supply in accordance with the requirements of table E5 in **appendix A**.

Recommendations:

A static water supply for each new building is to be assessed by the building surveyor and installed prior to occupancy and maintained in perpetuity by the owner.

3.4 Provision of Hazard Management Area

Requirements:

	Development standards	Requirement	Compliance
E1.6.1	Provision of hazard management area	A1 (a) A1 (b) A1 (c)	<p>The hazard management area for the balance lot will need to be extended to meet the offsets required for a BAL 19 area as per the BHMP. The HMA is to be established prior to sealing the new titles.</p> <p>Subject to implementing the proposed BHMP, a BAL 19 area with appropriate hazard management areas as determined by using Table 2.4.4 of AS3959-2018 will be provided for Lots 2, 3 & 4. Refer to the BHMP in appendix C.</p> <p>The subdivision will not be staged and no lots are dependent upon each other for mutual hazard management. Each lot must have the HMA established before construction of habitable buildings as a building Permit condition and confirmed by council.</p>

Each lot will require a hazard management area in accordance with the Bushfire Hazard Management Plan in **appendix C**.

Recommendations:

To minimise the impact of ember attack, the area, including gardens and landscaping, around the proposed buildings should be managed to reduce sources of ignition. The hazard management area needs to be implemented **prior to occupancy and maintained in perpetuity by the owner**.

The following requirements apply when establishing a fuel-managed area around any proposed buildings:

- Tree canopy cover should be less than 15% at maturity
- Trees at maturity should not touch or overhang the buildings.
- Lower limbs should be removed up to a height of 2m above the ground.
- Tree canopies should be separated by 2 to 5m
- Preference should be given to smooth barked and evergreen trees.
- Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire toward building should be provided
- Shrubs should not be located under trees
- Shrubs should not form more than 10% ground cover
- Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation
- Grass should be kept mown (as a guide grass should be kept to no more than 100mm in height)
- Leaves and vegetation debris should be removed.

Note: This summary is not a complete list of measures for a Hazard Management Area. For additional measures refer to the *Building for Bushfire. Planning and Building in Bushfire-Prone Areas for Owners and Builders. June 2020*.

4.0 CONCLUSIONS & RECOMMENDATIONS

This Bushfire Hazard Report and Bushfire Management Plan have been prepared to support the subdivision of 3 new lots and balance at 212 Greens Road, Orielton. The report has identified the site as bushfire prone land and has assessed the associated bushfire risks. The following fire management strategies must be carried out to ensure the development on the site is a reduced risk from bushfire attack:

- A new public road is to be constructed to service the new lots; the engineering design of the new public road is to be in accordance with the requirements of **Table E1**.
- The existing building on the balance lot must comply with the following, prior to sealing of titles:
 - A static water supply is to be installed in accordance with the requirements of **Table E5**
 - The hazard management area for the balance lot is to be established in accordance with the BHMP.
- The new lots are able to comply with the planning scheme requirements if the following conditions are met:
 - Future proposed building works must meet all construction standards for BAL-19 as per AS3959-2018 (Sections 3 & 6).
 - A property access is constructed in accordance with the requirements of **Table E2**.
 - A static water supply is installed in accordance with the requirements of **Table E5**.
 - A hazard management area is established in accordance with the BHMP.

5.0 LIMITATIONS OF PLAN

The protection measures outlined in the Bushfire Hazard Management Plan (Attachment 1) are based on a Fire Danger Index of 50 (FDI 50) which relates to a fire danger rating of 'very high'. Defending the property or sheltering within a structure constructed to AS3959-2018 on days when the fire danger rating is greater than 50 (i.e. 'severe' or higher) is not recommended.

Due to the unpredictable nature of bushfire behaviour and the impacts of extreme weather no structure built in a bushfire-prone area can be guaranteed to survive a bushfire. The safest option in the event of a bushfire is to leave the area early and seek shelter in a safe location.

6.0 REFERENCES

- AS3959-2018. *Australian Standard for Construction of buildings in bushfire-prone areas*. SAI Global Limited Sydney, NSW Australia
- National Construction Code 2016 Vol Two, Building Code of Australia Class 1 and Class 10 Buildings. Australian Building Codes Board, Australia.
- State Planning Scheme 2015. <http://www.iplan.tas.gov.au/pages/plan/book.aspx?exhibit=claips>
- Building for Bushfire. Planning and Building in Bushfire-Prone Areas for Owners and Builders. June 2020
- Bushfire Emergency Planning Guideline: A guide to planning for bushfire emergency, v3.0 August 2021.
- LISTmap 2018. Land Information System Tasmania, Tasmania Government.
- Directors Determination – Bushfire Hazard Areas v1.1 version 1.1, 8th April 2021.

Appendix A

Table E1 Standards for roads

Element		Compliance
A.	Roads	<p>Unless the development standards in the zone require a higher standard, the following apply:</p> <ul style="list-style-type: none"> (a) two-wheel drive, all-weather construction; (b) load capacity of at least 20t, including for bridges and culverts; (c) minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road; (d) minimum vertical clearance of 4m; (e) minimum horizontal clearance of 2m from the edge of the carriageway; (f) cross falls of less than 3 degrees (1:20 or 5%); (g) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; (h) curves have a minimum inner radius of 10m; (i) dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7m in width; (j) dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and (k) carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with Australian Standard AS1743-2001 Road signs-Specifications.

Table E2 Standards for property access

Element		Compliance
A.	Property access length is less than 30m; or access is not required for a fire appliance to access a firefighting water point.	There are no specified design and construction requirements.
B.	Property access length is 30m or greater; or access is required for a fire appliance to a firefighting water point.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> (a) all-weather construction; (b) load capacity of at least 20t, including for bridges and culverts; (c) minimum carriageway width of 4m; (d) minimum vertical clearance of 4m; (e) minimum horizontal clearance of 0.5m from the edge of the carriageway; (f) cross falls of less than 3 degrees (1:20 or 5%); (g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle; (h) curves with a minimum inner radius of 10m;

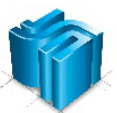
Element		Compliance
		<ul style="list-style-type: none"> (i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and (j) terminate with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> (i) a turning circle with a minimum outer radius of 10m; or (ii) a property access encircling the building; or (iii) a hammerhead 'T' or 'Y' turning head 4m wide and 8m long.
C.	Property access length is 200m or greater.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> (a) the requirements for B above; and (b) passing bays of 2m additional carriageway width and 20m length provided every 200m.
D.	Property access length is greater than 30m, and access is provided to 3 or more properties.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> (a) complies with requirements for B above; and (b) passing bays of 2m additional carriageway width and 20m length must be provided every 100m.

Table E5 Static water supply for fire fighting

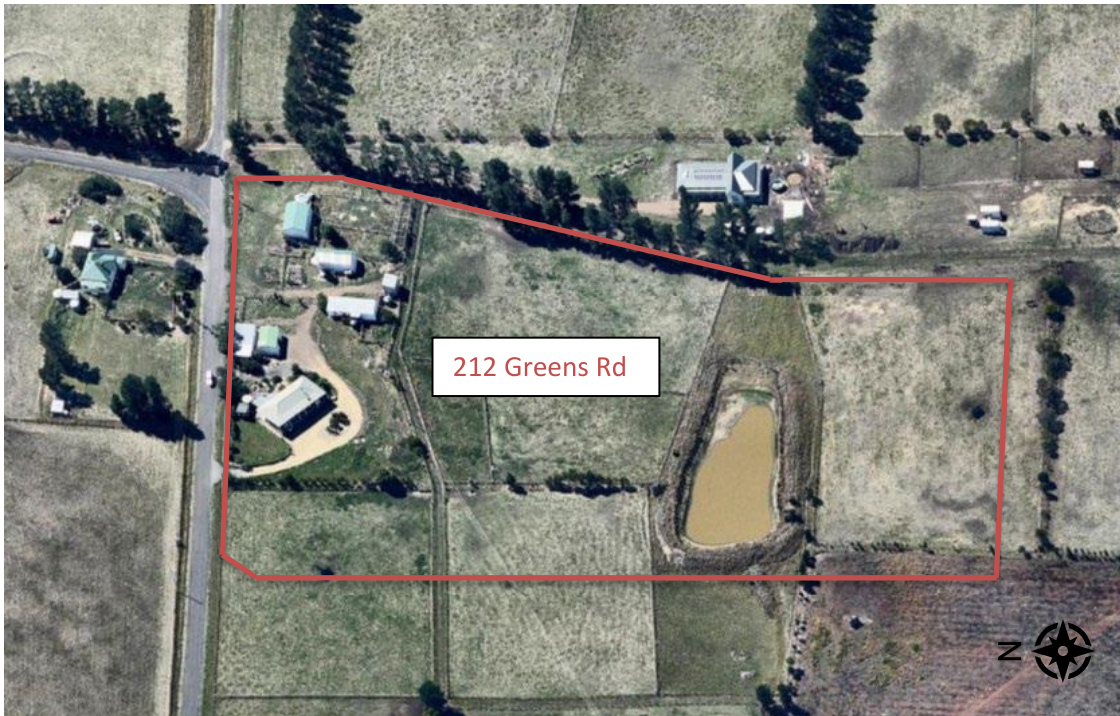
Element		Compliance
A.	Distance between building area to be protected and water supply.	<p>The following requirements apply:</p> <ul style="list-style-type: none"> (a) the building area to be protected must be located within 90m of the fire fighting water point of a static water supply; and (b) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.
B.	Static Water Supplies	<p>A static water supply:</p> <ul style="list-style-type: none"> (a) may have a remotely located offtake connected to the static water supply; (b) may be a supply for combined use (fire fighting and other uses) but the specified minimum quantity of fire fighting water must be available at all times; (c) must be a minimum of 10,000L per building area to be protected. This volume of water must not be used for any other purpose including fire fighting sprinkler or spray systems; (d) must be metal, concrete or lagged by non-combustible materials if above ground; and (e) if a tank can be located so it is shielded in all directions in compliance with section 3.5 of Australian Standard AS 3959-2009 Construction of buildings in bushfire-prone areas, the tank may be constructed of any material provided that the lowest 400mm of the tank exterior is protected by: <ul style="list-style-type: none"> (i) metal; (ii) non-combustible material; or (iii) fibre-cement a minimum of 6mm thickness.



Element		Compliance
C.	Fittings, pipework and accessories (including stands and tank supports)	<p>Fittings and pipework associated with a fire fighting water point for a static water supply must:</p> <ul style="list-style-type: none"> (a) have a minimum nominal internal diameter of 50mm; (b) be fitted with a valve with a minimum nominal internal diameter of 50mm; (c) be metal or lagged by non-combustible materials if above ground; (d) if buried, have a minimum depth of 300mm [S1]; (e) provide a DIN or NEN standard forged Storz 65mm coupling fitted with a suction washer for connection to fire fighting equipment; (f) ensure the coupling is accessible and available for connection at all times; (g) ensure the coupling is fitted with a blank cap and securing chain (minimum 220mm length); (h) ensure underground tanks have either an opening at the top of not less than 250mm diameter or a coupling compliant with this Table; and (i) if a remote offtake is installed, ensure the offtake is in a position that is: <ul style="list-style-type: none"> (i) visible; (ii) accessible to allow connection by fire fighting equipment; (iii) at a working height of 450 – 600mm above ground level; and (iv) protected from possible damage, including damage by vehicles.
D.	Signage for static water connections.	<p>The fire fighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must:</p> <ul style="list-style-type: none"> (a) comply with water tank signage requirements within Australian Standard AS 2304-2011 Water storage tanks for fire protection systems; or (b) comply with the Tasmania Fire Service Water Supply Guideline published by the Tasmania Fire Service.
E.	Hardstand	<p>A hardstand area for fire appliances must be:</p> <ul style="list-style-type: none"> (a) no more than 3m from the fire fighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (b) no closer than 6m from the building area to be protected; (c) a minimum width of 3m constructed to the same standard as the carriageway; and (d) connected to the property access by a carriageway equivalent to the standard of the property access.



APPENDIX B – SITE IMAGES



Aerial view of lot and surrounding vegetation – Facing east.



View of existing dwelling and surrounding vegetation – Facing East.



View of dwelling and surrounding vegetation from existing dam – Facing north-west.



View of vegetation along rear of balance lot – Facing East.



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Plans Referenced: P1



View frontage along Greens Road – Facing east.

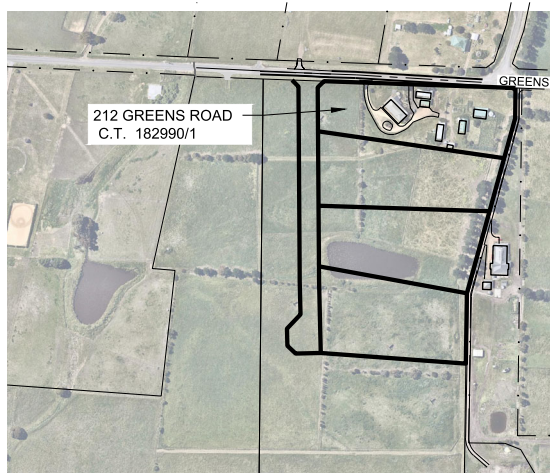


NOTES

1. HAZARD MANAGEMENT AREA (HMA)
 - a. VEGETATION IN THE HMA NEEDS TO BE STRATEGICALLY MODIFIED AND THEN MAINTAINED IN A LOW FUEL STATE TO PROTECT BUILDINGS FROM DIRECT FLAME CONTACT AND INTENSE RADIANT HEAT. AN ANNUAL INSPECTION AND MAINTENANCE OF THE HMA SHOULD BE CONDUCTED PRIOR TO THE BUSHFIRE SEASON. ALL GRASSES OR PASTURES MUST BE KEPT SHORT (<100mm). FINE FUEL LOADS AT GROUND LEVEL SUCH AS LEAVES, LITTER AND WOOD PILES MUST BE MINIMAL TO REDUCE THE QUANTITY OF WINDBORNE SPARKS AND EMBERS REACHING BUILDINGS, AND TO HALT OR CHECK DIRECT FLAME ATTACK SOME TREES CAN BE RETAINED (OR PLANTED) PROVIDED THERE IS HORIZONTAL SEPARATION BETWEEN THE CANOPIES AND LOW BRANCHES ARE REMOVED TO CREATE VERTICAL SEPARATION BETWEEN THE GROUND AND THE CANOPY. SMALL CLUMPS OF ESTABLISHED TREES AND/OR SHRUBS MAY ACT TO TRAP EMBERS AND REDUCE WIND SPEED
 - b. NO TREES TO OVERHANG HOUSE TO PREVENT BRANCHES OR LEAVES FROM FALLING ON THE BUILDING
 - c. NON-COMBUSTIBLE ELEMENTS INCLUDING DRIVEWAYS, PATHS AND SHORT CROPPED LAWNS ARE RECOMMENDED WITHIN THE HMA
 - d. FINE FUELS (LEAVES BARK, TWIGS) SHOULD BE REMOVED FROM THE GROUND PERIODICALLY (PRE-FIRE SEASON) AND ALL GRASSES OR PASTURES MUST BE KEPT SHORT (<100mm)
2. CONSTRUCTION STANDARDS
 - a. DWELLING MUST BE CONSTRUCTED TO COMPLY WITH BAL-19 (NORTH, EAST, SOUTH AND WEST ELEVATIONS) AS PER AS3959 -2018 (SECTIONS 3 AND 6)
3. ACCESS REQUIREMENTS
 - a. SPECIFIED REQUIREMENTS FOR DESIGN AND CONSTRUCTION OF ACCESS ROAD AS PER SECTION 3.2 OF THE BUSHFIRE HAZARD REPORT. HARDSTAND AREA AND TURNING TO BE PROVIDED TO SERVICE EACH BUILDING.
4. WATER SUPPLY
 - a. MUST MEET REQUIREMENTS OF SECTION 3.3 OF THE BUSHFIRE HAZARD REPORT. A DEDICATED 10,000L WATER SUPPLY IS TO BE SUPPLIED FOR EACH BUILDING.

THIS PLAN IS TO BE PRINTED AT A3 AND READ IN CONJUNCTION WITH THE BUSHFIRE HAZARD REPORT FOR A 3 LOT + BALANCE SUBDIVISIONS AT 212 GREENS ROAD, ORIELTON (D. GRANNETIA, JULY 2022)

Tom O'Connor
Senior Planning & Assessment Officer
On behalf of the Chief Officer,
Tasmania Fire Service
29-07-22



OVERALL SITE PLAN
SCALE: 1:5000



Sorell Council

Development Application: Subdivision Application - 212
Greens Road, Orielton.pdf
Date Received: 21/11/2022
Plans Referenced: P1



**JSA CONSULTING
ENGINEERS**

121 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6240 9911 www.jsa.com.au

BHMP KEY

- BAL 19 HAZARD MANAGEMENT AREA
- 30x30m BUILDING AREA PER PLANNING SCHEME, BUILDING AREA MAY BE LOCATED ON ANY PART OF LOT SUBJECT TO MINIMUM OFFSETS
- 10kL STATIC WATER SUPPLY FOR FIRE-FIGHTING PURPOSES ONLY
- PRIVATE ACCESS

CUL-DE-SAC TO BE COMPLETED AS PART OF SUBDIVISION WORKS

ACCESS ROAD MIN. 4m WIDE CONSTRUCTED IN ACCORDANCE WITH BUSHFIRE REQUIREMENTS



ASSESSED BUSHFIRE ATTACK LEVEL:
BAL-19

IMPORTANT
DRAWING MUST BE
PRINTED & READ IN COLOUR

BUSHFIRE HAZARD MANAGEMENT PLAN
SCALE: 1:1250

0 50 100 150m
SCALE 1:1250 AT A3 SHEET



REV	DESCRIPTION	BY	CHK	DATE
B	FOR INFORMATION - TANK & ACCESS AMENDMENTS	OG	MH	19/07/22
A	FOR INFORMATION	OG	MH	05/07/22

CHECKED M. HORSHAM CC5865 I	SCALE AS SHOWN	SIZE A3
CIVIL ENGINEER D. GRANNETIA	HYDRAULIC ENGINEER	
STATUS INFORMATION		

PROPOSED SUBDIVISION
212 GREENS ROAD,
ORIELTON

DRAWING TITLE BUSHFIRE HAZARD MANAGEMENT PLAN		
PROJECT NO 22E110-01	DWG NO F01	REV B

20/07/2018 9:45:13 AM

BUSHFIRE-PRONE AREAS CODE

CERTIFICATE¹ UNDER S51(2)(d) *LAND USE PLANNING AND APPROVALS ACT 1993*

1. Land to which certificate applies

The subject site includes property that is proposed for use and development and includes all properties upon which works are proposed for bushfire protection purposes.

Street address:

212 Greens Road, Orielton

Certificate of Title / PID:

C.T. 182990/1 ID 3311074

2. Proposed Use or Development

Description of proposed Use and Development:

3 Lot subdivision + balance

Applicable Planning Scheme:

Interim planning scheme - Sorell

3. Documents relied upon

This certificate relates to the following documents:

Title	Author	Date	Version
22R110-01-2 Bushfire report	JSA D. Grannetia	19/07/22	1



¹ This document is the approved form of certification for this purpose and must not be altered from its original form.

4. Nature of Certificate

The following requirements are applicable to the proposed use and development:

<input type="checkbox"/>	E1.4 / C13.4 – Use or development exempt from this Code	
	Compliance test	Compliance Requirement
<input type="checkbox"/>	E1.4(a) / C13.4.1(a)	Insufficient increase in risk

<input type="checkbox"/>	E1.5.1 / C13.5.1 – Vulnerable Uses	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.5.1 P1 / C13.5.1 P1	<i>Planning authority discretion required. A proposal cannot be certified as compliant with P1.</i>
<input type="checkbox"/>	E1.5.1 A2 / C13.5.1 A2	Emergency management strategy
<input type="checkbox"/>	E1.5.1 A3 / C13.5.1 A2	Bushfire hazard management plan

<input type="checkbox"/>	E1.5.2 / C13.5.2 – Hazardous Uses	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.5.2 P1 / C13.5.2 P1	<i>Planning authority discretion required. A proposal cannot be certified as compliant with P1.</i>
<input type="checkbox"/>	E1.5.2 A2 / C13.5.2 A2	Emergency management strategy
<input type="checkbox"/>	E1.5.2 A3 / C13.5.2 A3	Bushfire hazard management plan

<input type="checkbox"/>	E1.6.1 / C13.6.1 Subdivision: Provision of hazard management areas	
	Acceptable Solution	Compliance Requirement
<input checked="" type="checkbox"/>	E1.6.1 P1 / C13.6.1 P1	<i>Planning authority discretion required. A proposal cannot be certified as compliant with P1.</i>
<input type="checkbox"/>	E1.6.1 A1 (a) / C13.6.1 A1(a)	Insufficient increase in risk
<input checked="" type="checkbox"/>	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all lots (including any lot designated as 'balance')
<input type="checkbox"/>	E1.6.1 A1(c) / C13.6.1 A1(c)	Consent for Part 5 Agreement

<input type="checkbox"/>	E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.6.2 P1 / C13.6.2 P1	<i>Planning authority discretion required. A proposal cannot be certified as compliant with P1.</i>
<input type="checkbox"/>	E1.6.2 A1 (a) / C13.6.2 A1 (a)	Insufficient increase in risk
<input checked="" type="checkbox"/>	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access complies with relevant Tables

<input type="checkbox"/>	E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.6.3 A1 (a) / C13.6.3 A1 (a)	Insufficient increase in risk
<input type="checkbox"/>	E1.6.3 A1 (b) / C13.6.3 A1 (b)	Reticulated water supply complies with relevant Table
<input type="checkbox"/>	E1.6.3 A1 (c) / C13.6.3 A1 (c)	Water supply consistent with the objective
<input type="checkbox"/>	E1.6.3 A2 (a) / C13.6.3 A2 (a)	Insufficient increase in risk
<input checked="" type="checkbox"/>	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table
<input checked="" type="checkbox"/>	E1.6.3 A2 (c) / C13.6.3 A2 (c)	Static water supply consistent with the objective



5. Bushfire Hazard Practitioner

Name:

Dean Grannetia

Phone No:

6240 9915

Postal Address:

121 Sandy Bay Road, Sandy Bay 7005

Email Address:

dean@jsa.com.au

Accreditation No:

BFP – P

Scope:

3B

6. Certification

I certify that in accordance with the authority given under Part 4A of the *Fire Service Act 1979* that the proposed use and development:

- ☐ Is exempt from the requirement Bushfire-Prone Areas Code because, having regard to the objective of all applicable standards in the Code, there is considered to be an insufficient increase in risk to the use or development from bushfire to warrant any specific bushfire protection measures, or
- ☒ The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate is/are in accordance with the Chief Officer's requirements and compliant with the relevant **Acceptable Solutions** identified in Section 4 of this Certificate.

Signed:
certifier



Name:

Dean Grannetia


Date:

19/07/2022


Certificate
Number:

22C110-01-55-1

(for Practitioner Use only)


29-07-22

Tom O'Connor
Senior Planning & Assessment Officer
On behalf of the Chief Officer,
Tasmania Fire Service



CERTIFICATE OF QUALIFIED PERSON - ASSESSABLE ITEM

Section 321

To: JAC Multi Asset Pty Ltd

PO Box 1513

Launceston TAS 7250

Owner / Agent

Address

Suburb / Postcode

Form **55**

Qualified person details:

Qualified person: Mr Dean Grannetia

Address: 121 Sandy Bay Road

Sandy Bay TAS

7005

Phone: (03) 6240 9911

Licence No: BFP-166

Email address: dean@jsa.com.au

Qualifications and Insurance details: Accredited person under Part IVA of the Fire Service Act 1979

(description from Column 3 of the Director of Building Control's Determination)

Speciality area of expertise: Analysis of hazards in bushfire-prone area

(description from Column 4 of the Director of Building Control's Determination)

Details of work:

Address: 212 Greens Road, Orielton

Lot No:

Certificate of title No:

The assessable item related to this certificate:

Residential development (Class 1a)

(description of the assessable item being certified)
Assessable item includes -
- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:

Certificate type: Bushfire Hazard

(description from Column 1 of Schedule 1 of the Director of Building Control's Determination)

This certificate is in relation to the above assessable item, at any stage, as part of -

OR building work, plumbing work or plumbing installation or demolition work: ☒
a building, temporary structure or plumbing installation: ☐

In issuing this certificate the following matters are relevant -

Documents: 21R110-01-2 Bushfire Hazard Report prepared by JSA Consulting Engineers Pty Ltd dated 07/07/2022.

22E110-01 Bushfire Hazard Management Plan prepared by JSA Consulting Engineers Pty Ltd sheet nos F01 Rev B issue dated 19/07/2022.



Sorell Council

Development Application: Subdivision Application - 212
Greens Road, Orielton.pdf
Date Received: 21/ 11 / 2022
Plans Referenced: P1

Relevant
calculations:

BAL assessed as per AS3959-2018

References:

Current editions of:
Building Regulations 2016
Director's Determination – Requirements for Building in Bushfire-Prone Areas (v2.2)
National Construction Code – Vol. 2 (NCC).
AS3959-2018 Construction of Buildings in Bushfire Prone Areas

Substance of Certificate: (what it is that is being certified)

Subject to implementation of the abovementioned Bushfire Hazard Management Plan, the development meets the Requirements of the Director's Determination – Requirements for Building in Bushfire-Prone Areas (v2.2)

Design and construction of the Class 1a dwelling must be a minimum standard of BAL 12.5 as described in AS3959-2018.

Scope and / or Limitations

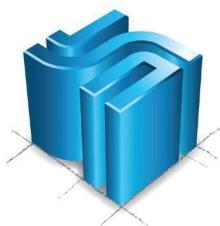
Scope: The bushfire assessment was undertaken at the site to identify the bushfire risk and determine whether there was sufficient risk from bushfire to the proposed residential development to warrant specific bushfire protection measures under acceptable solutions. All bushfire hazard management measures comply with Building Regulations 2014, AS3959-2018 and the NCC (vol. 2).

Limitations:

- The BAL assessment relates to bushfire risk assessment only.
- The assessor has taken all reasonable steps to ensure that the information provided in this assessment is accurate and reflects the conditions on and around the site and allotment on the date of this assessment.
- The recommendations made in the BAL assessment are based on the conditions of the site at the time of the assessment. No liability will be accepted by the assessor for actions undertaken by the owners or others that compromise the effectiveness of the measures outlined in this assessment.
- The effectiveness of the Bushfire safety measures outlined in the assessment are reliant on their implementation and ongoing maintenance.

I certify the matters described in this certificate

	<i>Signed:</i>	<i>Date:</i>	<i>Certificate No:</i>
Qualified person:		29/07/2022	22C110-01-55-1



JSA CONSULTING
ENGINEERS

121 Sandy Bay Rd,
Sandy Bay, TAS 7005

T (03) 6240 9911
E mail@jsa.com.au

Structural | Civil | Mechanical | Research | Energy | Environmental





Sorell Council

Development Application: Response to Request for
Information 212 Greens Road, Orielton.pdf

Date Received: 28/ 02 / 2023
Plans Referenced: P4

JSA CONSULTING
ENGINEERS



STORMWATER DESIGN REPORT

STORMWATER DESIGN

In accordance with *Australian Rainfall and Runoff 2019*

DOCUMENT INFORMATION

PROJECT ADDRESS:	212 GREENS ROAD, ORIELTON
DOCUMENT TITLE:	STORMWATER DESIGN REPORT
DOCUMENT NUMBER:	22R110-01-1 Revision 2
DATE OF REPORT:	21 September 2022
CLIENT COMPANY:	JAC Multi Asset Pty Ltd
REPORT AUTHOR:	Rachel Horner, BE(Hons) BSc MIEAust
CHECKED BY:	Dr Jane Sargison, BE DPhil FIEAust CPEng NER CC6183N

Structural | Civil | Mechanical | Research | Energy | Environmental

Directors: Dr Jane Sargison BE DPhil FIEAust CPEng NER CC6193N

Mr Matthew Horsham BE MIEAust CPEng NER RPEQ CC5865I

121 Sandy Bay Road, Sandy Bay 7005 Phone (03) 6240 9911 Email mail@jsa.com.au

JSA Consulting Engineers Pty Ltd | ABN 45 165 277 681

REVISION HISTORY					
Revision Number	Revision Description	Prepared By	Reviewed By	Authorised By	Date Prepared
0	For Client Review	Rachel Horner	Jane Sargison	Matthew Horsham	29/07/2022
1	For Planning Approval	Rachel Horner	Jane Sargison	Matthew Horsham	05/08/2022
2	For Planning Approval – Stormwater RFI	Rachel Horner	Jane Sargison	Matthew Horsham	21/09/2022

SUMMARY

Sorell Interim Planning Scheme 2015 Response

The stormwater infrastructure for the proposed 4 lot subdivision at 212 Greens Road, Oriellton, as shown in Figure 3, has been designed in accordance with *Australian Rainfall and Runoff 2019* (ARR 2019) [1].

The stormwater system has been designed to meet the acceptable solutions of the Stormwater Management Code of the Sorell Interim Planning Scheme 2015 [2], with the following key elements:

E7.7.1 Stormwater Drainage and Disposal

A1 – Stormwater from new impervious surfaces must be disposed of by gravity to public stormwater infrastructure.

Response:

The development proposal is for subdivision of CT 182990/1 into 4 lots, 1 lot with existing property access maintained directly onto Greens Rd, and three with new accesses onto a new road in CT 182991/2 along the western property boundary of CT 182990/1. Runoff from the new road is collected in grassed swale drains along the sides of the road. Culverts are provided underneath the property accesses. Stormwater from the roadside drains is directed to the existing waterway to the west of the development.

A2 – A stormwater system for a new development must incorporate water sensitive urban design principles for the treatment and disposal of stormwater if any of the following apply:

- a) the size of new impervious area is more than 600 m²;*
- b) new car parking is provided for more than 6 cars;*
- c) a subdivision is for more than 5 lots.*

Response:

The stormwater system for the development incorporates water sensitive urban design principles for the treatment and disposal of stormwater due to a) the size of the new impervious area (new road) exceeds 600m².

Grassed swale drains provide treatment of runoff from the road area to meet the pollutant reduction targets required by the State Stormwater Strategy.

MUSIC modelling and construction details will be provided with the application for Engineering Design Approval.

A3 – A minor stormwater drainage system must be designed to comply with all of the following:

- a) be able to accommodate a storm with an ARI of 20 years in the case of non-industrial zoned land and an ARI of 50 years in the case of industrial zoned land, when the land serviced by the system is fully developed;*
- b) stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure.*

Response:

Stormwater runoff generated from the new road to service the proposed lots is collected in roadside swale drains, designed to accommodate a 1%AEP storm event.

Stormwater runoff from the developed lots will be collected and managed on site. Rainwater tanks will be required for the supply of water to future dwellings on the lots, with tank overflows to be managed on site.

A4 – A major stormwater drainage system must be designed to accommodate a storm with an ARI of 100 years.

Response:

Stormwater runoff generated from the new road to service the proposed lots is collected in roadside swale drains, designed to accommodate a 1%AEP storm event.

There is an existing overland flow path along the southern boundary of Lot 17, in the vicinity of an existing farm dam. A new 6m wide drainage easement is proposed along the southern boundary of Lot 17, to allow for management of overland flows in this area in major storm events.

The overland flow generated from the upstream catchment (14.24 ha) has been modelled in DRAINS utilising an initial loss continuing loss method in accordance with ARR 2019 procedures.

A brief summary of the modelling result is summarised in the sections of the report which follow. Further details will be provided with the application for Engineering Design Approval.



Rachel Horner

Civil / Environmental Engineer

CONTENTS

Summary	3
Sorell Interim Planning Scheme 2015 Response	3
E7.7.1 Stormwater Drainage and Disposal	3
Contents	5
1 Project Description	6
1.1 Existing Conditions	6
1.2 Proposed Stormwater System	8
2 DRAINS Model	9
2.1.1 DRAINS Inputs and Assumptions	9
2.1.2 DRAINS Ensemble Storm Method	10
2.1.3 DRAINS Outputs	11
Conclusion.....	12
References	13
Appendix A: List of Acronyms	14

1 PROJECT DESCRIPTION

1.1 Existing Conditions

The development site at 212 Greens Road, Orielton is currently rural land, predominantly grassed, with an existing dwelling and associated outbuildings on future Lot 1 and an existing farm dam on future Lot 17. The dam is over an existing overland flow path which crosses the property from east to west, directing overland flow towards an existing waterway to the west of the property. Refer to Figure 1 and Figure 2.



Figure 1: Existing site conditions at 212 Greens Road, Orielton [3]

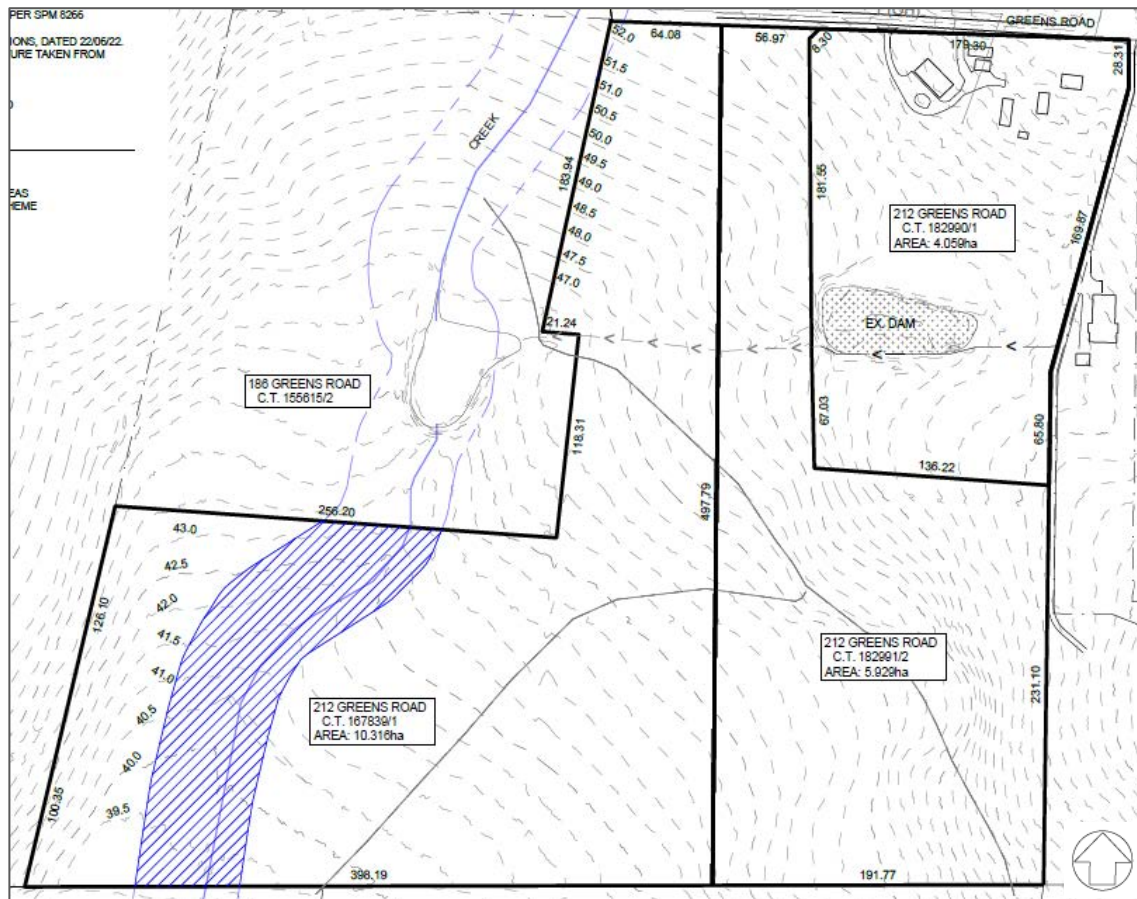


Figure 2: Part of Existing Site Plan C01 at 212 Greens Road, Orielton

1.2 Proposed Stormwater System

Stormwater runoff generated from the new road to service the proposed lots is collected in roadside swale drains, designed to accommodate a 1%AEP storm event.

Stormwater runoff generated from development of the lots will be managed on site, as the lots will require rainwater tanks for supply of water.

A new drainage easement is proposed along the southern boundary of Lot 17, over the existing overland flow path which carries surface flows generated from the upstream catchment. The runoff rates for this catchment are calculated using the *Australian Rainfall and Runoff 2019* initial loss - continuing loss (IL-CL) method, for 1% Annual Exceedance Probability (AEP) storm event with climate change loading. The inundation rates for these rainfall events are determined from Bureau of Meteorology (BOM) 2016 Intensity-Frequency-Duration (IFD) data for Orielton [4]. A summary of the DRAINS modelling and results is provided in this report.

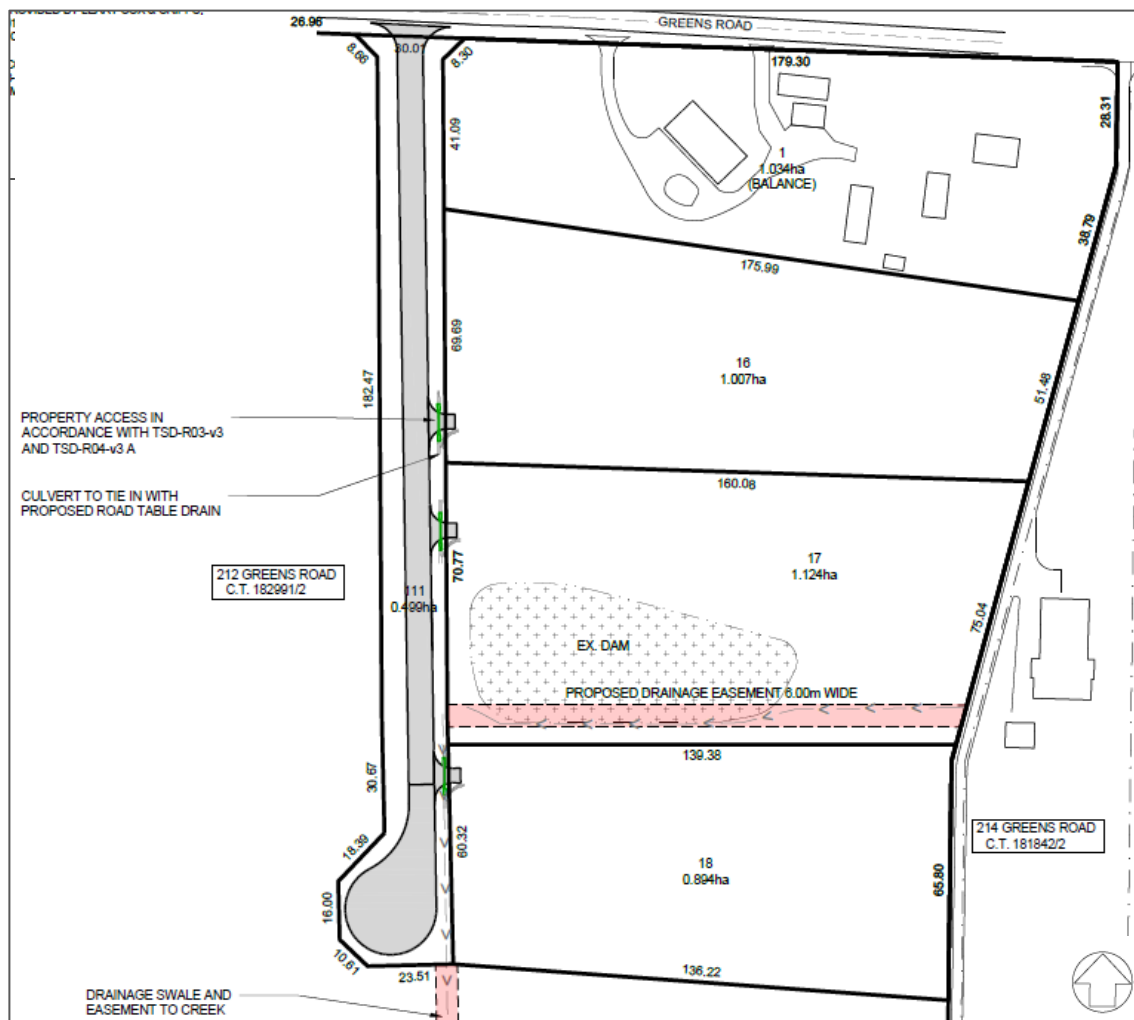


Figure 3: Part of Proposed Stormwater Plan C04 at 212 Greens Road, Orielton



2 DRAINS MODEL

2.1.1 DRAINS Inputs and Assumptions

DRAINS software was utilised to run an IL-CL model of the catchment upstream from the existing dam for the 1% AEP storm event with climate change loading.

2.1.1.1 Design Rainfall and Losses

Design rainfall, losses, and climate change loading were imported from ARR 2019 data hub [5] and BOM 2016 IFD design rainfalls [4] for Orielton. The losses used for the IL-CL model are summarised in Table 1. The loading applied for climate change is 16.3% (RCP 8.5 to 2090).

Table 1: Initial and continuing losses for IL-CL model

		Data Source
Impervious Area Initial Loss (mm)	1	ARR 2019 [1] Book 5 Chapter 3 Section 3.5.3.1.2
Impervious Area Continuing Loss (mm/h)	0	ARR 2019 [1] Book 5 Chapter 3 Section 3.5.3.1.2
Pervious Area Initial Loss (mm)	27.0	Rural storm initial losses from ARR 2019 data hub for Orielton [5]
Pervious Area Continuing Loss (mm/h)	4.0	Rural storm continuing losses from ARR 2019 data hub for Orielton [5]

2.1.1.2 Catchments

The total area (14.24ha) and percentage impervious area (2%) of the catchment upstream from the existing dam has been determined from LISTmap contours and on site assessment by engineer.

Runoff from catchment nodes have been modelled in DRAINS utilising time of concentration as outlined below. These assumptions have been based on ARR 2019 [1] and DRAINS user guidelines.

Time of concentration for existing impervious areas is 2 minutes. Time of concentration for pervious areas is calculated in DRAINS using kinematic wave equation from flow path length, slope and retardance coefficient, n^* . DRAINS inputs for calculation of time of concentration using kinematic wave equation are:

- Retardance coefficient n^* is assumed to be 0.15 for short grass, per DRAINS user guidelines,
- Approximate average slope of the pervious area of 5% measured from LISTmap contours [3],
- Flow path length of 550m as measured from LISTmap [3].

2.1.2 DRAINS Ensemble Storm Method

Ensembles of storms are modelled in DRAINS, as recommended in ARR 2019 [1], to model the runoff from a catchment.

An ensemble of 10 temporal patterns for each storm event are modelled, with the results based on the median of the outputs. This accounts for the hydrologic variability of the temporal patterns (e.g. a storm may be front, middle, or back loaded).

The inundation rates are imported to DRAINS from Bureau of Meteorology (BOM) 2016 Intensity-Frequency-Duration (IFD) data [4]. Temporal patterns, storm losses and pre-burst rainfall depths are imported from ARR data hub [5].

Refer to Figure 4 for the hyetograph for the critical 1% AEP storm event. The peak flow from the upstream catchment occurs in the 2 hour storm burst duration.

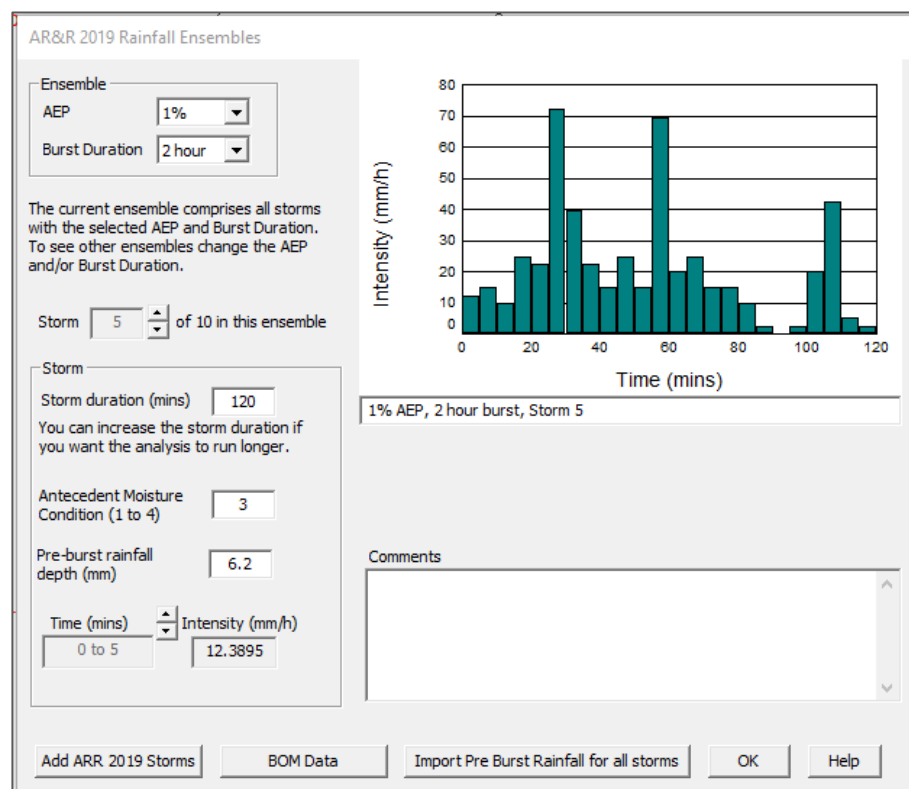


Figure 4: Rainfall hyetograph for 1% AEP 2 hour duration storm burst, Storm #5

2.1.3 DRAINS Outputs

The cross section of peak flow in the critical 1% AEP storm event with climate change loading in the proposed roadside swale drains is shown in Figure 5.

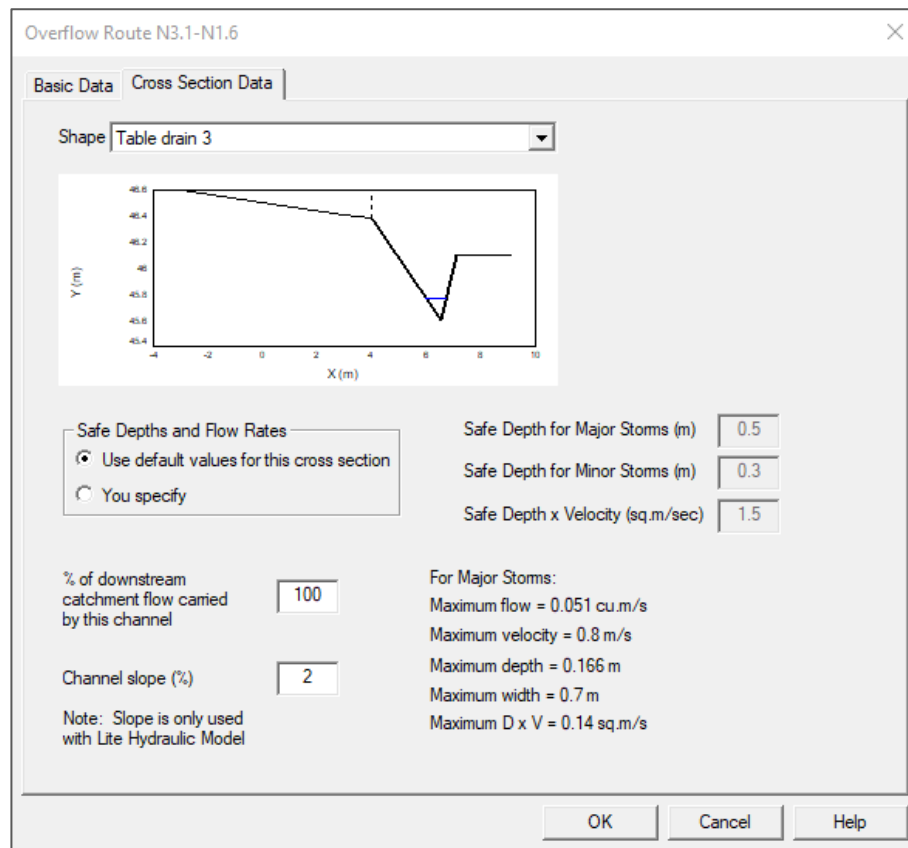


Figure 5: Swale drain cross section of peak flow in the critical 1%AEP storm event with climate change loading

CONCLUSION

This document has outlined the stormwater design for the proposed subdivision in accordance with the acceptable solutions of the Stormwater Management Code of the Sorell Interim Planning Scheme 2015.

Stormwater runoff generated from the new road to service the proposed lots is collected in roadside swale drains, designed to accommodate a 1%AEP storm event with climate change loading.

Stormwater runoff generated from future development of the lots will be managed on site, as the lots will require rainwater tanks for supply of water.

A new drainage easement is proposed along the southern boundary of Lot 17, over the existing overland flow path which carries surface flows generated from the upstream catchment. Runoff from the upstream catchment is directed towards the existing waterway to the west of the development. The stormwater infrastructure has been modelled in DRAINS to accommodate a 1%AEP storm event with 16.3% loading applied for climate change.

Details of the management of the stormwater will be provided with the documentation for Engineering Design Approval for the road and associated drainage infrastructure.

REFERENCES

- [1] J. Ball, M. Babister, R. Nathan, W. Weeks, E. Weinmann, M. Retallick and I. Testoni, Eds., Australian Rainfall and Runoff: A Guide to Flood Estimation, Commonwealth of Australia (Geoscience Australia), 2019.
- [2] Sorell Council, "Sorell Interim Planning Scheme," 2015. [Online]. Available: <https://iplan.tas.gov.au/pages/plan/book.aspx?exhibit=sorips>. [Accessed July 2022].
- [3] Land Tasmania, "LISTmap," 2018. [Online]. Available: <http://maps.thelist.tas.gov.au/listmap/app/list/map>. [Accessed July 2022].
- [4] Commonwealth of Australia (Bureau of Meteorology), "Rainfall IFD Data System: Water Information: Bureau of Meteorology," 2019. [Online]. Available: <http://www.bom.gov.au/water/designRainfalls/revised-ifd/>. [Accessed June 2022].
- [5] Commonwealth of Australia (Geoscience Australia), "ARR Data Hub," May 2019. [Online]. Available: <https://data.arr-software.org/>. [Accessed June 2022].

APPENDIX A: LIST OF ACRONYMS

AEP	Annual Exceedance Probability
ARI	Average Recurrence Interval
ARR 2019	Australian Rainfall and Runoff 2019
BOM	Bureau of Meteorology
IFD	Intensity – Frequency – Duration
IL-CL	Initial Loss – Continuing Loss
RCP	Representative Concentration Pathway



SEARCH OF TORRENS TITLE

VOLUME 182991	FOLIO 2
EDITION 2	DATE OF ISSUE 29-Aug-2022

SEARCH DATE : 28-Nov-2022

SEARCH TIME : 11.16 AM

DESCRIPTION OF LAND

Parish of SORELL Land District of PEMBROKE
Lot 2 on Plan 182991
Derivation : Part of Lot 30000, 276A-1R-25P Gtd. to Owen
Douglas Townsend
Prior CT 167839/2

SCHEDULE 1

M969645 TRANSFER to JAC MULTI ASSET PTY LTD Registered
29-Aug-2022 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
SP103907, SP155615 & SP167839 FENCING PROVISION in Schedule of
Easements
SP 31317 FENCING COVENANT in Schedule of Easements
SP 31317 COUNCIL NOTIFICATION under Section 468(12) of the
Local Government Act 1962

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

SCHEDULE OF EASEMENTS

PLAN NO.

NOTE:—The Town Clerk or Council Clerk must sign the certificate on the back page for the purpose of identification.

The Schedule must be signed by the owners and mortgagees of the land affected. Signatures should be attested.

S. P31317



Sorell Council

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Plans Referenced: P2

EASEMENTS AND PROFITS

Each lot on the plan is together with:—

- (1) such rights of drainage over the drainage easements shewn on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
- (2) any easements or profits à prendre described hereunder.

Each lot on the plan is subject to:—

- (1) such rights of drainage over the drainage easements shewn on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
- (2) any easements or profits à prendre described hereunder.

The direction of the flow of water through the drainage easements shewn on the plan is indicated by arrows.

COVENANT

The Owner of Lot 1 covenants with Douglas Benjamin Harris and Douglas Harris (Junior) (hereinafter called "the Vendors") that the Vendors shall not be required to fence.

SIGNED by DOUGLAS BENJAMIN
HARRIS a registered prop-
rietor in Certificate of
Title Volume 2320 Folio 28
in the presence of:

W. Bull
Sullivan
Hobart

DB Harris

SIGNED by DOUGLAS HARRIS
(JUNIOR) a registered
proprietor in Certificate
of Title Volume 2320
Folio 28 in the presence
of:

W. Bull

Douglas Harris

317

SIGNED by MAXWELL STEWART

BULL a Mortgagee under

Mortgages A908888 and

A928104 in the presence

of:

*M. Louise Voss
Law Clerk
Hobart*

M. Buee

SIGNED by RICHARD MICHAEL

WEBSTER by his Attorney

Maxwell Stewart Bull under

Power No. 59/8833 (and the

said Maxwell Stewart Bull

declares that he has

received no notice of rev-

ocation of the said Power)

as Mortgagee under Mortgage

No. A908888 in the presence

of:

M. Louise Voss

RICHARD MICHAEL WEBSTER

by his Attorney

M. Buee



Sorell Council

Development Application: Response to Request for

Information - 7.2022.26.1.pdf

Date Received: 28/ 11 / 2022

Plans Referenced: P2

SIGNED by JULIAN RICHARD

TYDDE as Mortgagee under

Mortgages A908888 and

A928104 in the presence

of:

M. Louise Voss

J. Tydde

Signed by WESTPAC BANKING
CORPORATION by its Attorney
PETER DONALD BROWNELL and

IAN WILLIAM SEALY

under power No. 60/1489 (and
hereby respectively declare that
they have received no notice of
revocation of the said power) in
the presence of

Bank Officer, Hobart

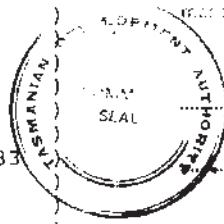
WESTPAC BANKING
CORPORATION
by its Attorney

MANAGER REGIONAL OFFICE
TASMANIA DIVISION

ASSISTANT TO MANAGER
LEGAL
TASMANIA DIVISION

Mortgagee under Mortgage A979952

THE COMMON SEAL of the
TASMANIAN DEVELOPMENT
AUTHORITY as Mortgagee
 in Mortgage Number A832683
 was hereto affixed by
 Order of the Board in the
 presence of:



The common seal of the Tasmanian Development Authority

[Signature]

DIRECTOR

DEPUTY
AUTHORISED OFFICER



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 Information - 7.2022.26.1.pdf
 Date Received: 28/ 11 / 2022
 Plans Referenced: P2



This is the schedule of easements attached to the plan of Lot 1 by Douglas Benjamin Harris
(Insert Subdivider's Full Name)
and Douglas Harris (Junior) affecting land in

Certificate of Title Registered Volume 2320 Folio 28
(Insert Title Reference)

Sealed by Municipality of Sorell on 19 FEBRUARY 1987

Solicitor's Reference
LEWIS, DRISCOLL & BULL,
60905


Council Clerk/Exam-Clerk

SCHEDULE OF EASEMENTS	Registered Number
NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED. SIGNATURES MUST BE ATTESTED.	SP 18 2990

PAGE 1 OF 1 PAGE

EASEMENTS AND PROFITS

Each lot on the plan is together with:-

- (1) such rights of drainage over the drainage easements shown on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
- (2) any easements or profits a prendre described hereunder.

Each lot on the plan is subject to:-

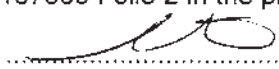
- (1) such rights of drainage over the drainage easements shown on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
- (2) any easements or profits a prendre described hereunder.

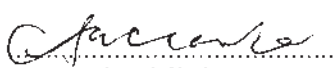
The direction of the flow of water through the drainage easements shown on the plan is indicated by arrows.

Fencing Provision

In respect of each lot shown on the plan the Vendors (Terence Edward Clarke and Kerry Anne Clarke) shall not be required to fence.

SIGNED by TERENCE EDWARD CLARKE and KERRY ANNE CLARKE
as registered proprietors of the land
comprised in folio of the Register Volume
167839 Folio 2 in the presence of:




.....
Signature **Nicholas Andrew Beattie**
.....
Print name **14 Bathurst Street Hobart TAS 7000**
.....
Address


.....
Terence Edward Clarke


.....
Kerry Anne Clarke



SE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: TE & KA Clarke	PLAN SEALED BY:  SORELL COUNCIL
FOLIO REF: 167839-2	DATE: 16.5.22
SOLICITOR Nick Beattie Barrister and Solicitor & REFERENCE: 20795	7.2020.28.1 REF NO.
	 Council Delegate
NOTE: The Council Delegate must sign the Certificate for the purposes of identification.	

OWNER: TERENCE EDWARD CLARKE
KERRY ANNE CLARKE

FOLIO REFERENCE: 167839 - 2

GRANTEE
PART OF LOT 30000, 276-1-25 GRANTED TO
OWEN DOUGLAS TOWNSEND

PLAN OF TITLE

LOCATION: LAND DISTRICT OF PEMBROKE
PARISH OF SORELL

REGISTERED NUMBER

P182991

FIRST SURVEY PLAN No SP. 167839

COMPILED BY: J.B. MEDBURY

SCALE 1:2500

LENGTHS IN METRES

LEARY COX & CO PROS SURVEYORS
111 GLENADE STREET HOBART TAS 7000
P 03 5118 2030
F 03 5118 2030
E info@lcsurvey.com

APPROVED

27 MAY 2022

Recorder of Titles

ALL EXISTING SURVEY NUMBERS TO BE
CROSS REFERENCED ON THIS PLAN

BALANCE PLAN



(SP.128343)

(SP.177480)

(SP.177480)

(SP.103907)

GREENS

VIGAR COURT

ROAD

(SP.155615)

(SP.182990)

(SP.156769)



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Date Received: 28/ 11 / 2022
Plans Referenced: P2

(SP.167839)

2
5.929ha

(SP.167839)

(SP.163991)

(P.140166)

(P.115338)