4.9 Crash History

The Department of State Growth is supplied with reported crashes by Tasmania Police. The Department maintains a crash database from the crash reports which is used to monitor road safety, identify problem areas and develop improvement schemes.

The 5-year crash history records one reported crash, see Figure 22 and 23. There is no evidence of a crash propensity on William Street.

Figure 22 – 5 Year reported Crash History on William Street

Crash Id	Description	Date	Time	Severity	Light	Location	Units
50827827	147 - Emerging from driveway or lane	23-Sep-2020	14:00	PDO	Day	William Street	LV & HV

PDO	Property Damage Only
LV	Light Vehicle
HV	Heavy Vehicle

Figure 23 – 5 Year reported Crash locations on William Street

4.10 Services

No above ground services appear to be disaffected by the proposal.

4.11 Road Safety Review

A road safety review was conducted for William Street and no road safety issues were identified.

4.12 Austroads Safe System Assessment

William Street approaches to the proposed road junction have been assessed in accordance with the Austroads Safe System Assessment framework. This framework involves consideration of exposure, likelihood and severity to yield a risk framework score. High risk crash types and vulnerable road user crash types are assessed for each site and aggregated to provide an overall crash risk. Crash risk is considered in terms of three components:

- Exposure (is low where low numbers of through and turning traffic) i.e.1 out of 4
- Likelihood (is low where the infrastructure standard is high) i.e. 1 out of 4
- Severity (is low where the speed environment is low) i.e. 1 out of 4

The Austroads Safe System Assessment process enables the relative crash risk of an intersection or road link to be assessed. Vulnerable road users are considered along with the most common crash types.

The crash risk score indicates how well the infrastructure satisfies the *safe system objective which is for a forgiving road system where crashes do not result in death or serious injury.*

From safe system assessment, William Street approaches to the proposed Road are determined to be well aligned with the safe system objective with a very low crash risk score of 20/448, see Figures 24 and 25.

Figure 24 – Austroads Safe System Assessment alignment between crash score and risk

<40/448	Very low risk score
(40-80)/ 448	Low risk score
(80-180)/448	Moderate to high risk score
>180/448	High risk score

Figure 25 - Safe System Assessment of William Street, Campbell Town

Safe System Assessment **Existing situation William Street**

		Run-off-road	Head-on	Intersection	Other	Pedestrian	Cyclist	Motorcyclist	
Exposure	**William St (AADT 70vpd.)**	No reported crashes, low traffic volume	No reported crashes, low traffic volume	High Street intersection with 7,870 vpd(2021) and no crash history.	Very low volume residential street.	Low pedestrian activity.	Low cyclist activity.	Low motorcyclist activity.	
	Score /4	1	1	1	1	1	1	1	
Likelihood	**Justification**	Narrow 4.7m seal, straight alignment, street lighting and adequate sight distance.	Narrow 4.7m seal, straight alignment, street lighting and adequate sight distance.	Effectively satisfies Austroads BAR and BAL junction layout warrant.	Narrow 4.7m seal, straight alignment, street lighting and adequate sight distance.	No formal footpath, mowed pedestrian friendly verges.	Narrow 4.7m seal, straight alignment, street lighting and adequate sight distance.	Narrow 4.7m seal, straight alignment, street lighting and adequate sight distance.	
	Score /4	3	3	1	1	2	2	2	
Severity	**50km/h Speed Limit and Speed Environment.**	Low speed environment and minimal roadside hazards.	Low speed environment and minimal roadside hazards.	Low speed environment 50km/h approaches.	Low speed environment and minimal roadside hazards.	Moderate to High speed environment for vulnerable road users such as pedestians	Moderate to High speed environment for vulnerable road users such as cyclists	Moderate to High speed environment for vulnerable road users such as motorcyclists	
	Score /4	1	1	1	1	2	2	2	**Total /448**
Product	**Total Score /64**	**3**	**3**	**1**	**1**	**4**	**4**	**4**	**20**

5. Traffic Generation and Assignment

This section of the report is to determine how traffic generated by the proposal is distributed within the adjacent road network now and ten years future.

5.1 Traffic Growth

Background traffic compound annual growth of 1% has been assumed due to background infill development.

5.2 Trip Generation

Traffic generation rates are sourced from RTA Guide to Traffic Generating Developments 2002.

For dwelling houses traffic generation rates are 9 daily trips per house with 0.85 peak hour vehicle trips.

For 15 lots this amounts to peak activity estimated at 13 vph and 135 vpd.

5.3 Trip Assignment

Trip assignments have been estimated as follows:

- William Street / Proposed Road junction 2033 – Figure 26
- High Street / William Street junction 2033 – Figure 27

Exhibited

Figure 26 – Projection for William Street / Proposed Road junction for 2033

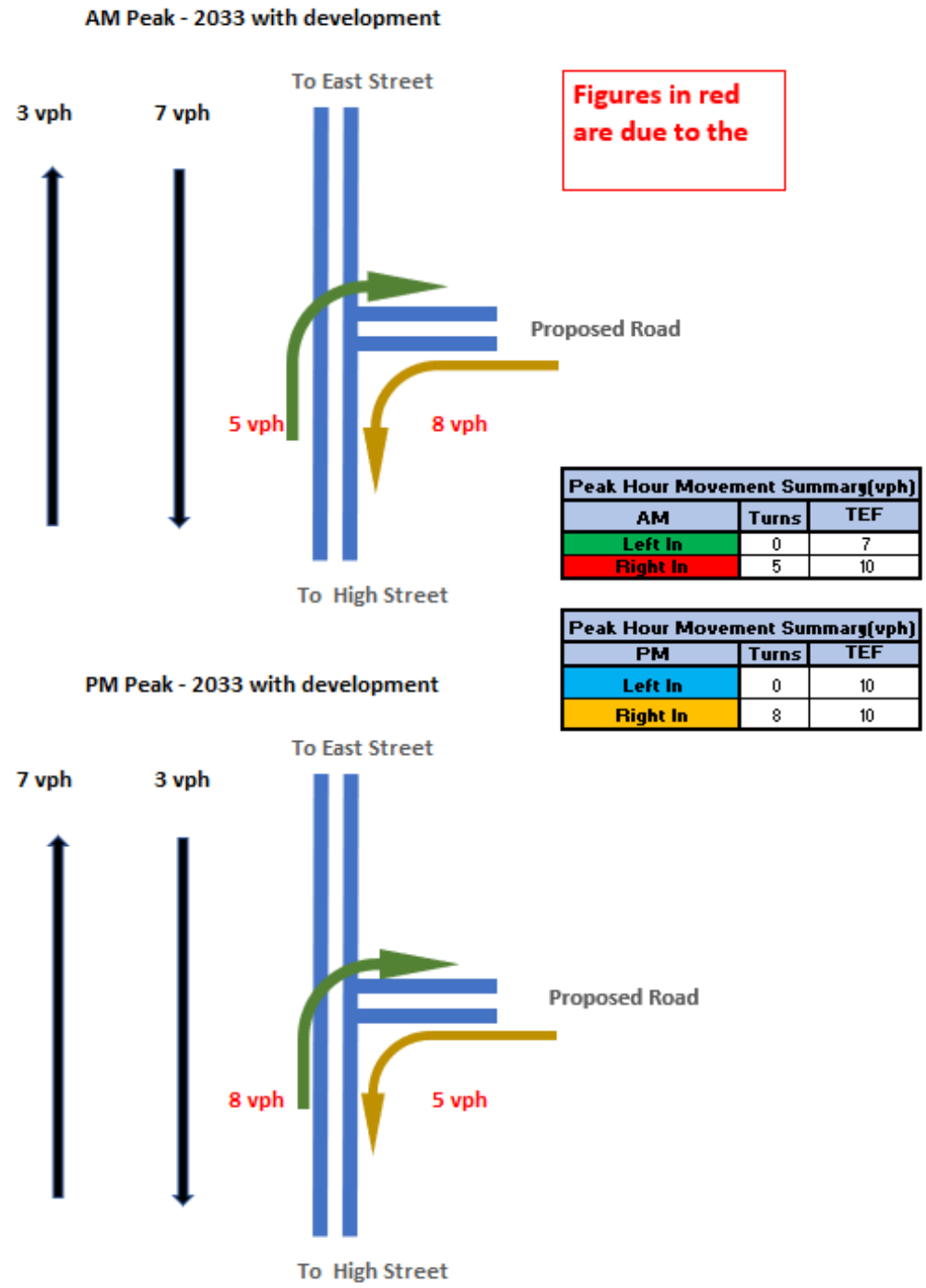
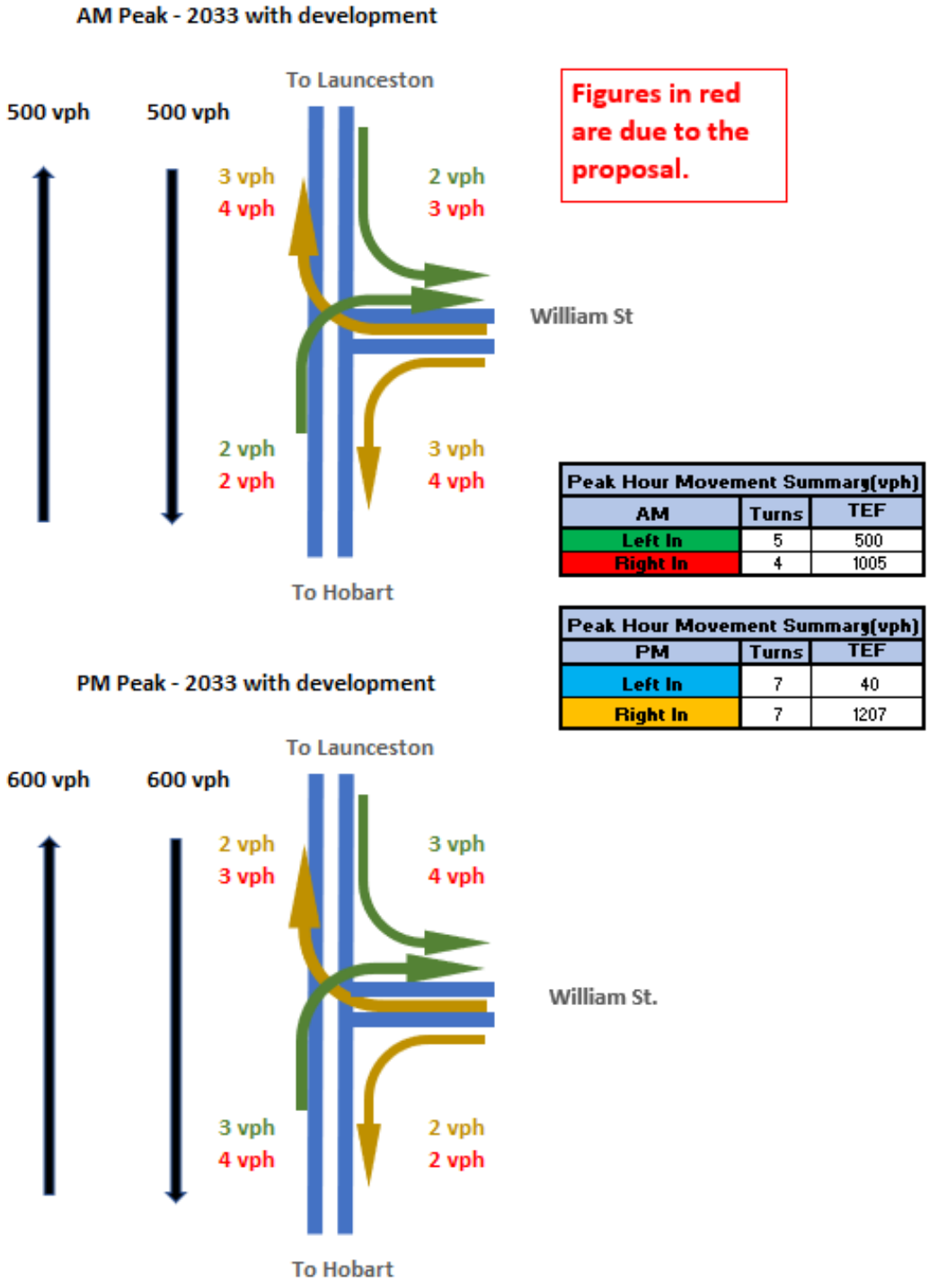


Figure 27 – Projection for High Street / William Street junction for 2033



6. Impact on Road Network

6.1 Impact on William Street

Traffic generations estimation indicates that the proposal will add up to 135vpd to the projected 100vpd (2033) on William Street. While this is more than double 2033 traffic, the aggregate volume of 235vpd is low and there are no traffic capacity issues at this level with the road operation at LOS A, see Appendix D for LOS descriptions.

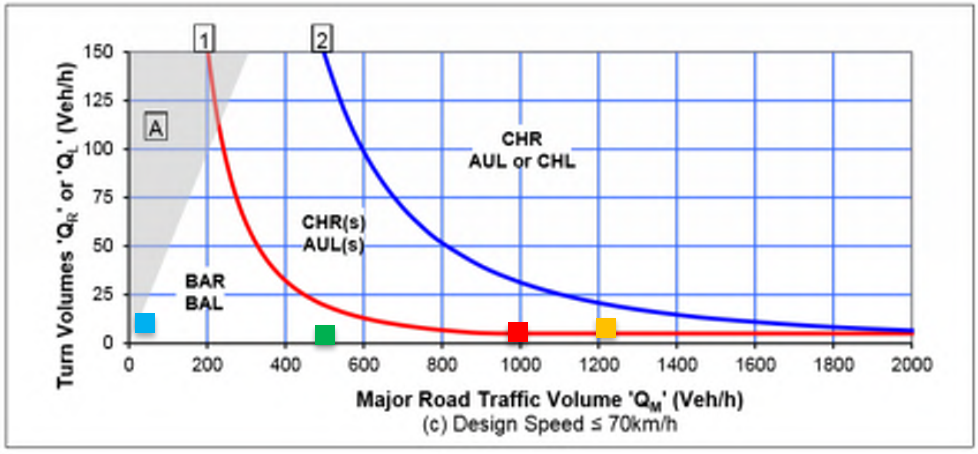
6.2 Austroads Junction warrant

The William Street junctions with Hight Street and the proposed road have been reviewed in terms of Austroads junction layout requirements as follows.

6.2.1 High Street / William Street Junction

Figure 28 demonstrates that a Simple Right and Left turn junction layout is adequate for the High / William Street junction, and this effectively matches the current junction layout.

Figure 28 – Austroads Junction warrant for High Street / William Street Junction 2033



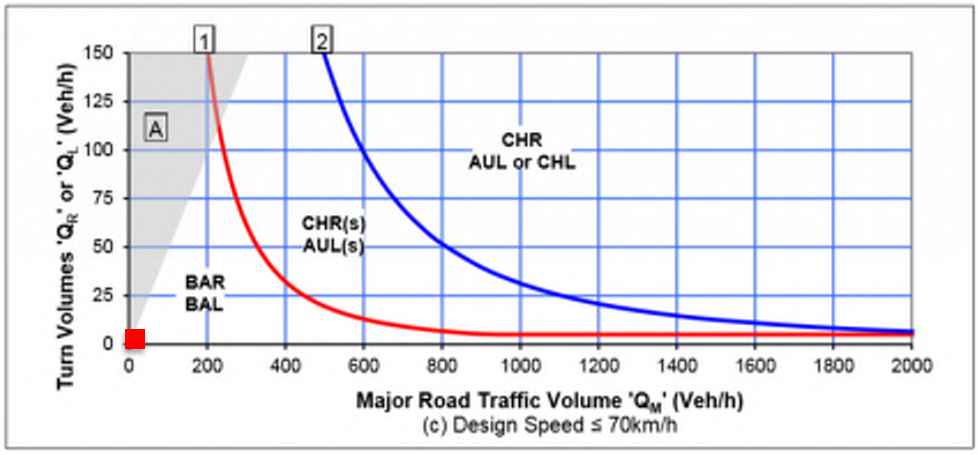
Peak Hour Movement Summary(vph)		
AM	Turns	TEF
Left In	5	500
Right In	4	1005

Peak Hour Movement Summary(vph)		
PM	Turns	TEF
Left In	7	40
Right In	7	1207

6.2.2 William Street / Proposed Road Junction

Figure 29 demonstrates that a Simple Right and Left turn junction layout is adequate for the William / Proposed Road junction which matches with the current junction layout.

Figure 29 – Austroads Junction warrant William Street / Proposed Road Junction 2033



Peak Hour Movement Summary(vph)		
AM	Turns	TEF
Left In	0	7
Right In	5	10

Peak Hour Movement Summary(vph)		
PM	Turns	TEF
Left In	0	10
Right In	8	10

6.3 Impact on High Street / William Street junction

The impact of the proposal on this junction is notable in that traffic activity will increase by 135vpd from 100 vpd to 235 vpd h by 2033 however this activity is low and has a very minor impact on traffic safety and traffic capacity.

The junction is estimated to continue to operate at LOS A with no traffic capacity issues.

The junction is estimated to continue to operate safely. There is no crash history and the turning movements associated with the development would be well catered for with the current junction layout.

6.4 Impact on William Street / Proposed Road junction

The impact of the proposal on this junction is notable in that activity will increase from by 100vpd to 235 vpd by 2033 however this activity is low and has a very minor impact on traffic safety and traffic capacity.

The junction is estimated to continue to operate at LOS A with no traffic capacity issues.

The junction is estimated to continue to operate safely. The 5-year reported crash history shows no evidence of a crash propensity and it is assessed that turning movements will be well catered for with the proposed junction layout.

6.5 Impacts on road users.

6.5.1 Public Transport

No effects.

6.5.2 Delivery Vehicles

No effects.

6.5.3 Pedestrians and Cyclists

Proposal will increase pedestrian activity on William Street between the proposed road and High Street.

6.5.4 Motorcyclists

No effects.

6.6 Other impacts

6.6.1 Environmental

No applicable environmental impacts were identified in relation to:

- Community severance, pedestrian amenity
- Hazardous loads, air pollution or ecological impacts
- Heritage and Conservation

Noise, vibration or visual impact of South Rail line operation on residential amenity requires consideration.

6.6.2 Street Lighting and Furniture

No issues.

6.6.3 Tasmanian Subdivision Guideline Considerations

No issues.

6.6.4 Transport Planning Considerations

No issues.

6.7 Urban residential street standard.

Currently William Street has a 4.7m seal with kerb & channel along the Southern side.

In accordance with LGAT standard drawing TSD-R06, the minimum urban road standard for a 15 lot Cul-De-Sac Road less than 150m in length is a type 4 Local Cul-De-Sac with a trafficable width of 6.9m and footpath one side.

The recommended urban residential road property access standard is detailed in the LGAT standard drawings TSD-R09. These standards are available online at:

https://www.lgat.tas.gov.au/__data/assets/pdf_file/0027/813735/Tasmanian-Municipal-Standards-Drawings-v3-December-20202.pdf

6.8 Liveability, Safety and Amenity Guidelines

Guidelines for the safety and amenity of residential areas include:

- Bound residential precincts with traffic routes or natural barriers to minimise conflict.
- Direct vehicular and pedestrian access should be avoided from single dwelling units onto road with over 2,000 vehicles per day.
- Effective street lengths should be less than 200-250m in order to achieve typical vehicle speeds of 40km/h.
- Cater for cyclist & pedestrian demand with separate paths or cycle networks.

To maximise the liveability, safety and amenity of the local area, road and street network layout should be such that:

- A minimum of 60% of lots should abut residential streets with less than 300vpd passing traffic.
- A minimum of 80% of lots should abut residential streets with less than 600 vpd passing traffic.
- A maximum of 5% of single dwelling lots should abut residential streets with between 1,000-2,000 vpd passing traffic.
- A maximum of 1% of single dwelling lots should abut local streets or collectors with less than 3,000 vpd passing traffic, and
- No single dwelling lot should abut a route with > 3,000 vpd passing traffic.

These guidelines are from *TE&M Chapter 2.2: Design of New Urban Networks*.

The proposal satisfies liveability, safety and amenity targets described above.

6.9 Tasmanian Planning Scheme – Northern Midlands

Road and Railway Assets Code C3

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

Acceptable Solution A1.1 *– For a category 1 road or a limited access road, vehicular traffic to and from the site will not require:*

(a) A new junction
(b) A new vehicle crossing.
(c) A new level crossing.

Not applicable as the roads are not Category 1.

Acceptable Solution A1.2 *– 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.*

A1.2 is not satisfied as no written consent has been issued by the road or rail crossing authority, see response to Performance Criteria P1.

Acceptable Solution A1.3 *– 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.*

Not applicable as no new private level crossing is proposed.

Acceptable solution A1.4: *Vehicular traffic to and from the site, using and existing vehicle crossing or private level crossing will not increase by more than:*

(a) The amounts in Table C3.1
(b) Allowed by a licence issued under Part IVA of the Roads and Jetties Act 1935 in respect to a limited access road; and

A1.4 is not satisfied from Table C3.1 as proposal involves up to 135vpd and involves o*ther road* and more than 40 vpd for vehicles up to 5.5m in length.

Performance Criteria P1: *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:*

(a) any increase in traffic caused by the use.
(b) the nature of the traffic generated by the use.
(c) the nature of the road.
(d) the speed limit and traffic flow of the road.
(e) any alternative access to a road.
(f) the need for the use.
(g) any traffic impact assessment; and
(h) any advice received from the rail or road authority.

(a) The increase in traffic due to the proposal is estimated at up to 135 vpd. From review of Austroads junction warrants it has been determined that:

- High Street / William Street junction layout is adequate.
- William Street / Proposed Road junction layout is adequate.

(b) The nature of the traffic generated by the use will be 98% light vehicles post residential construction phase.

(c) The proposed road is to be constructed to a 6.9m width from face to face of kerb with kerb & Channel and footpath one side consistent with LGAT guidelines.

(d) The General Urban Default Speed Limit of 50km/h will apply which is appropriate for the traffic activity and function of William Street.

(e) There is no suitable alternative access.

(f) The proposal is consistent with zoning for the area and considered cost effective and efficient infill development.

(g) This traffic assessment identifies no reason to disallow the proposal due to traffic impacts.

(h) No rail or road infrastructure is disaffected by the proposal.

In summary there are no traffic safety or capacity issues due to the proposal. **P1 is satisfied.**

Acceptable solution A1.5: Vehicular traffic must be able to enter and leave a major road in a forward direction. **A1.5 is satisfied.**

C3.6.1 Habitable buildings for sensitive uses within a road or railway attenuation area

Acceptable Solution A1

Unless within a building area on a sealed plan approved under this planning scheme, habitable buildings for a sensitive use within a road or railway attenuation area, must be:

(a) within a row of existing habitable buildings for sensitive uses and no closer to the existing or future major road or rail network than the adjoining habitable building;

(b) an extension which extends no closer to the existing or future major road or rail network than:

(i) the existing habitable building; or

(ii) an adjoining habitable building for a sensitive use; or

(c) located or designed so that external noise levels are not more than the level in Table C3.2 measured in accordance with Part D of the *Noise Measurement Procedures Manual, 2nd edition, July 2008*.

Table C3.2 Acceptable noise levels within a road or railway attenuation area

Roads
The arithmetic average of the A-weighted L10 sound pressure levels for each of the one-hour periods between 6:00am and midnight on any day [L10 (18-hour)] of 63 dB(A).

Habitable buildings (sensitive uses) are proposed within the General Residential Zone and within 50m of the South Railway Line through Campbell Town (the rail attenuation area) and closer to the rail network than adjoining habitable buildings, see Figures 30 and 31.

It may be possible that the noise level exceeds > 63 dB. A noise & vibration report is being prepared by a consultant. Details to be advised in due course.

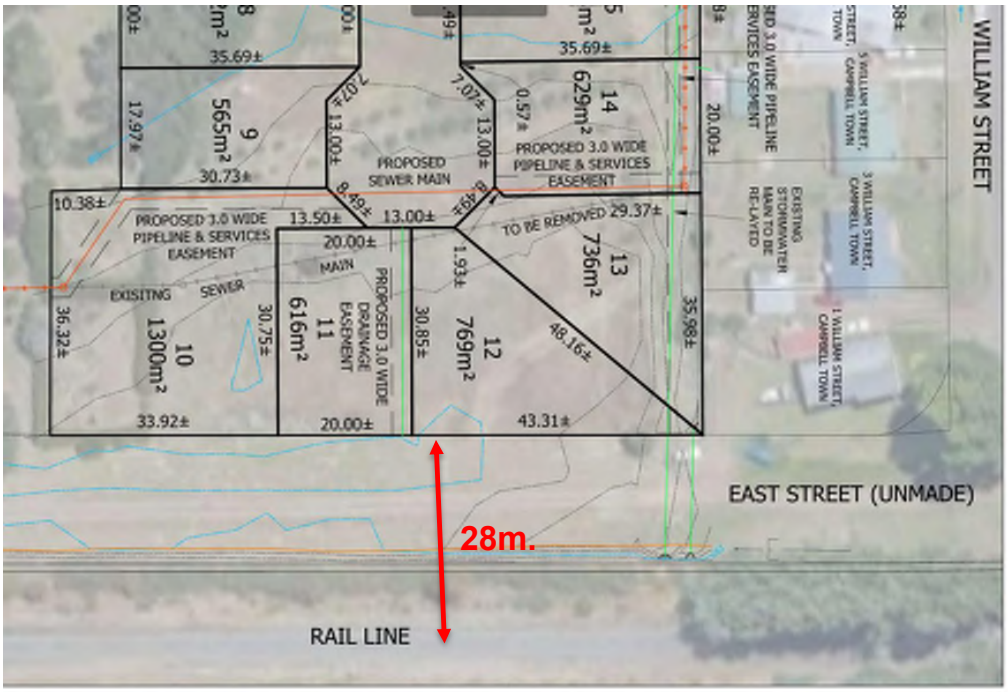
A1 may or may not be satisfied.

Exhibited

Figure 30 – South Rail Line East of proposed subdivision

Source: LISTmap, DPIPWE

Figure 31 – Proposed Lots 10,11,12 & 13 in relation to the South Rail Line reservation



Performance Criteria P1

Habitable buildings for sensitive uses within a road or railway attenuation area, must be sited, designed or screened to minimise adverse effects of noise, vibration, light and air emissions from the existing or future major road or rail network, having regard to:

(a) the topography of the site;

(b) the proposed setback;

(c) any buffers created by natural or other features;

(d) the location of existing or proposed buildings on the site;

(e) the frequency of use of the rail network;

(f) the speed limit and traffic volume of the road;

(g) any noise, vibration, light and air emissions from the rail network or road;

(h) the nature of the road;

(i) the nature of the development;

(j) the need for the development;

(k) any traffic impact assessment;

(l) any mitigating measures proposed;

(m) any recommendations from a suitably qualified person for mitigation of noise; and

(n) any advice received from the rail or road authority.

a. The topography of the site is flat, and the development site is approximately level with South Rail line, see Figure 30.

b. The development site Eastern boundary is 20m from the South Rail line reservation and 28m from the rail line ie < 50m West of the South Line, see Figure 30.

c. The South Rail line is at a similar ground level to proposed lots 10, 11,12 and 13.

d. Lots 10-13 are within 28m of the South Rail Line, see Figure 30.

e. The South Rail Line is operational in the vicinity of the proposal.

f. Rail activity on the South line is regular.

g. Rail noise over 63 dB is possible.

h. The proposed lots are not grade separated from the Western Line.

i. The proposed development is for residential dwellings consistent with the Tasmanian Planning Scheme Land Use Zoning – Northern Midlands.

j. The development is justified on commercial grounds.

k. This traffic impact assessment determines that subject to the recommendations contained in this report, the subdivision proposal will allow continued safe and efficient operation of William Street and is supported on traffic grounds.

l. Mitigations may be required to mitigate road noise concerns.

m. A noise assessment report has been requested by Council ?

n. TasRail may request the offset dimension of proposed Lots 10- 13 to the South Line reservation boundary.

Subject to TasRail advice, P1 may be satisfied.

C3.7.1 Subdivision for sensitive uses within a road or railway attenuation area

Not applicable as no subdivision is proposed within a road or railway attenuation area.

Acceptable Solution A1

A lot, or a lot proposed in a plan of subdivision, intended for a sensitive use must have a building area for the sensitive use that is not within a road or railway attenuation area.

The proposal is for a 15 lot General Residential subdivision with lots 10-13 within 50m of the South Rail line and railway attenuation area. **A1 is not satisfied.**

Performance Criteria P1

A lot, or a lot proposed in a plan of subdivision, intended for sensitive uses within a road or railway attenuation area, must be sited, designed or screened to minimise the effects of noise, vibration, light and air emissions from the existing or future major road or rail network, having regard to:

(a) the topography of the site;

(b) any buffers created by natural or other features;

(c) the location of existing or proposed buildings on the site;

(d) the frequency of use of the rail network;

(e) the speed limit and traffic volume of the road;

(f) any noise, vibration, light and air emissions from the rail network or road;

(g) the nature of the road;

(h) the nature of the intended uses;

(i) the layout of the subdivision;

(j) the need for the subdivision;

(k) any traffic impact assessment;

(l) any mitigating measures proposed;

(m) any recommendations from a suitably qualified person for mitigation of noise; and

(n) any advice received from the rail or road authority.

See responses under C3.6.1.

Subject to Noise &Vibration report & TasRail advice, **P1 may be satisfied.**

7. Recommendations and Conclusions

This report has been prepared to assess the proposed 15 lot subdivision of 7A William Street, Campbell Town in accordance with Tasmanian Planning Scheme - Northern Midlands and Road & Railway Assets Code C3 requirements.

It has been prepared following a review of available traffic and crash data, Road Safety Review, Austroads Safe System Assessment, future growth projections and review of applicable Austroads guidelines and Council Road standards.

7.1 Traffic Safety:

From road safety review, review of 5 year reported crash history and Austroads Safe System assessment no traffic safety issues have been identified with the proposal.

7.2 South Rail Line

As the South Rail Line is less than 50m from the development site and noise and vibration assessment will be required to determine what mitigations may be necessary.

7.3 William Street

It is estimated that the proposal will contribute up to 135vpd to William Street. Though this is a significant increase on the estimated AADT of 70 vpd (2023), the total traffic volume is very low and will have a very minor impact on operation of the road.

7.4 High Street / William Street junction

The existing junction layout is adequate for the increased traffic and negligibly impacted.

7.5 Tasmanian Planning Scheme – Northern Midlands

Evidence is provided to demonstrate the proposal satisfies Road & Railway Assets Code C3 requirements, subject to Noise and Vibration assessment.

Recommendations:

- *Construct the new road to a trafficable width of 6.9m with kerb & channel and footpath one side consistent with LGAT urban road standard TSD- R06.*
- *Install proposed driveways consistent with LGAT urban standard TSD-R09.*
- *Install street lighting on the proposed road to Council standard.*
- *Construct footpath along the Southern side of William Street from the Proposed Road to High Street.*
- *Comply with determination on unit setback requirement for the Southern Rail Line Reservation.*
- *Comply with any mitigations identified and agreed from the noise and vibration report for the South Rail Line.*

This traffic impact assessment finds that the proposed subdivision of 7A William Street provides adequately for continued safe and efficient operation of the impacted road network. The increased traffic resulting will have a very minor impact on the operation of the High Street / Willian Street junction.

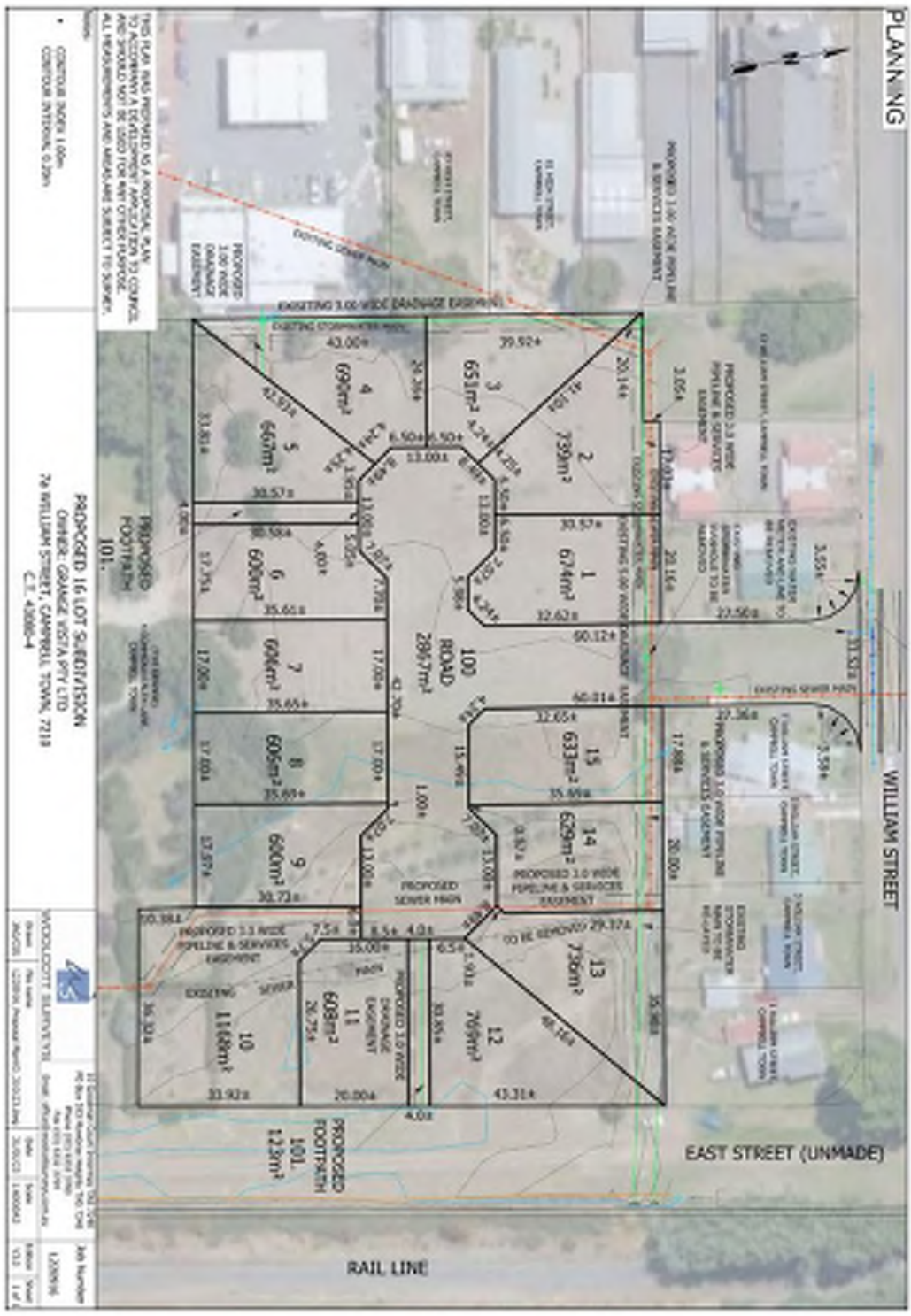
Overall, it has been concluded that subject to the recommendations contained in this report, the proposed subdivision will allow continued safe and efficient operation of William Street and is supported on traffic grounds.

Exhibited

Appendices

Exhibited

Appendix A - Subdivision Plan



Exhibited

Appendix B - High Street Traffic Data

Site 0000A0087480

A0087480
Description: Midland Highway 160m S Of Pedder St
City: Campbell Town
Route number: A0087

Site Data

60 km/h

Traffic Statistics by Direction

Direction	Weekday average total traffic	7-day average traffic	Weekly traffic total
North	3,424	3,491	24,439
South	3,234	3,348	23,438
Total	6,658	6,839	47,877

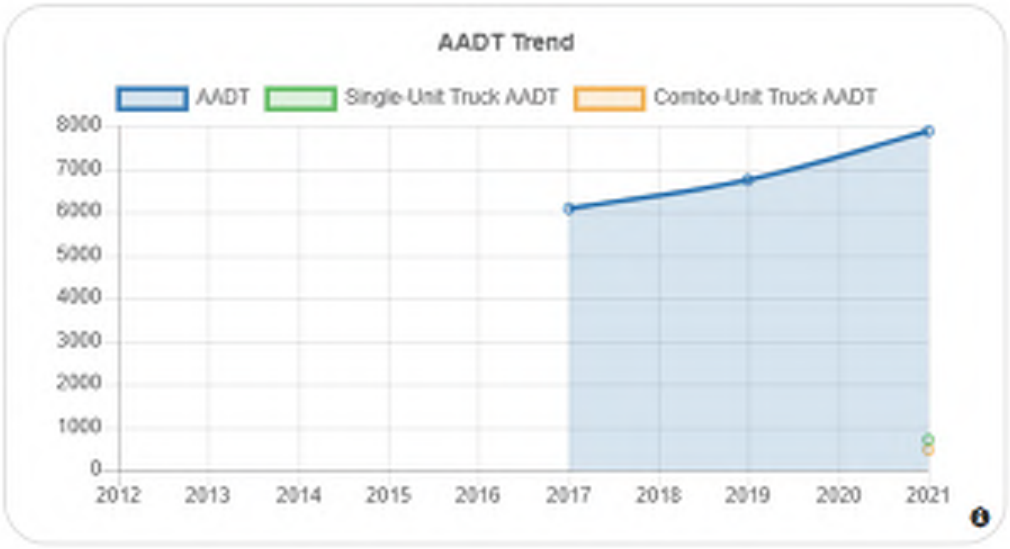
Annual Statistics

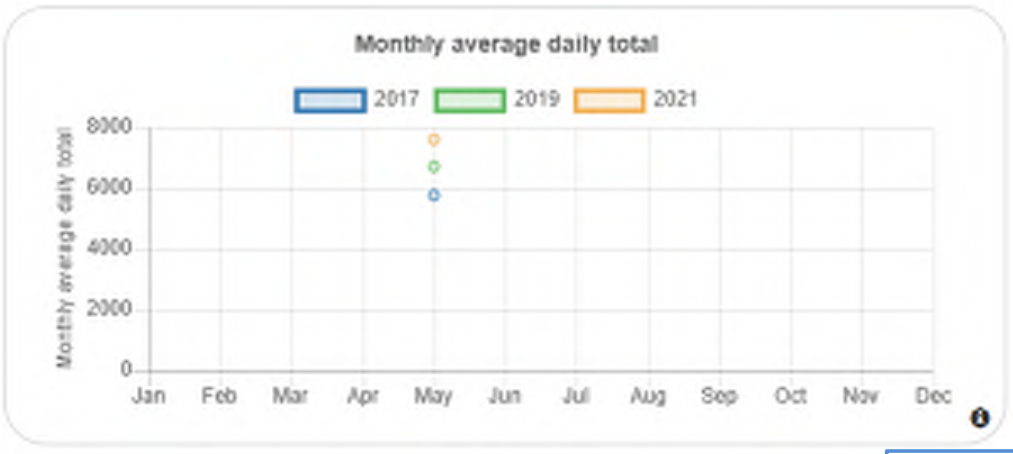
Data Item	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
AADT	-	-	-	-	-	6,069	-	6,751	-	7,870
% HV	-	-	-	-	-	19.3%	-	16.3%	-	15.0%

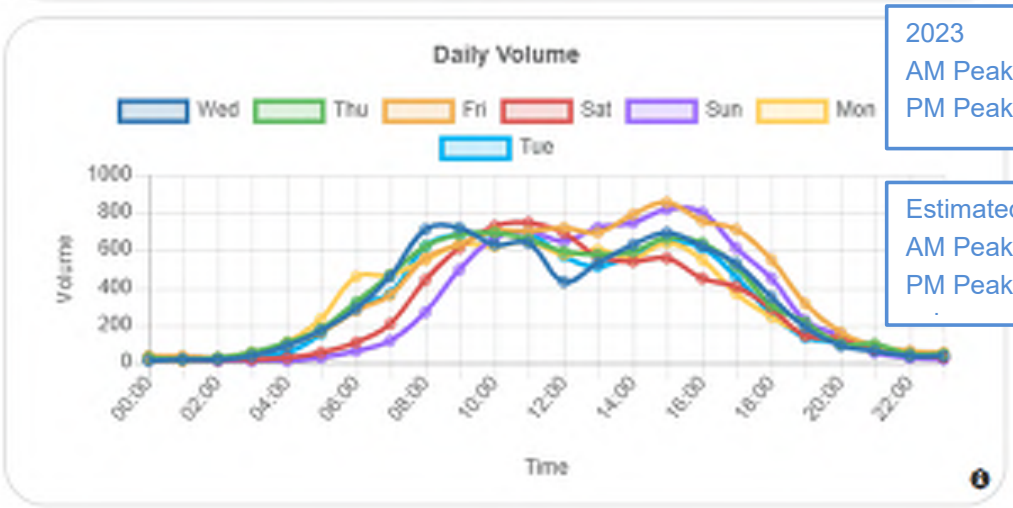
Midlands Highway
(Campbell Town)

- **Compound Ann. Growth: 6.8% over 4 years**
- **Compound Ann. Growth: 3.5% over long term used.**
- **Commercial Vehicles. 15 %**
- **7,870 vpd (2021)**
- **8,430 vpd (2023)**
- **11, 890 vpd (2033)**

Exhibited







2023
AM Peak 700 vph.
PM Peak 850 vph.

Estimated 2033
AM Peak 1,000 vph.
PM Peak 1,200 vph.

Appendix C - William Street Traffic Data

Estimated AADT 70vpd (2023)

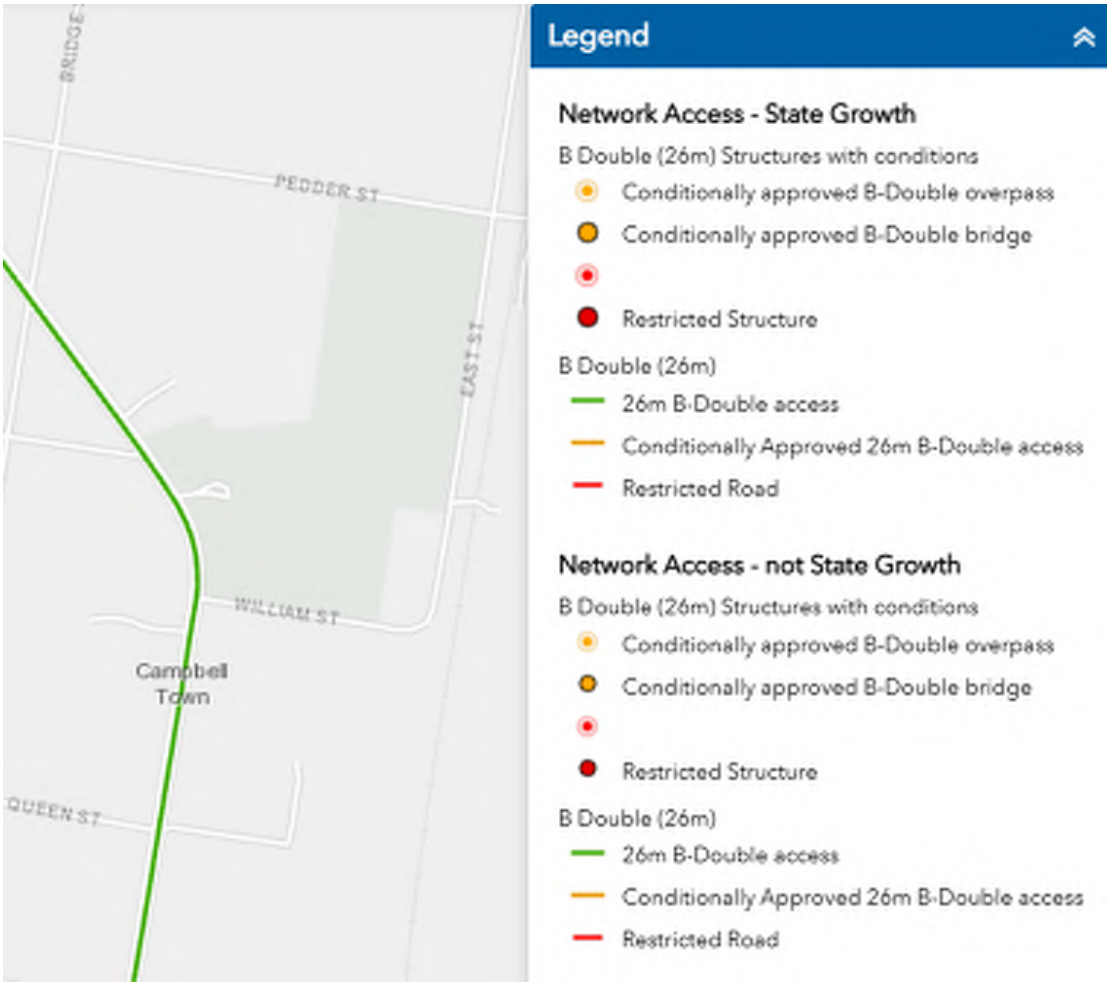
Estimated AADT 100vpd (2033) due to background Compound annual growth at 3.5%.

Appendix D - Level of Service Descriptions

Level of service A	A condition of free-flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.
Level of service B	In the zone of stable flow where drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is a little less than with level of service A.
Level of service C	Also in the zone of stable flow, but most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience declines noticeably at this level.
Level of service D	Close to the limit of stable flow and approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems.
Level of service E	Traffic volumes are at or close to capacity, and there is virtually no freedom to select desired speeds or to manoeuvre within the traffic stream. Flow is unstable and minor disturbances within the traffic stream will cause breakdown.
Level of service F	In the zone of forced flow, where the amount of traffic approaching the point under consideration exceeds that which can pass it. Flow breakdown occurs, and queuing and delays result.

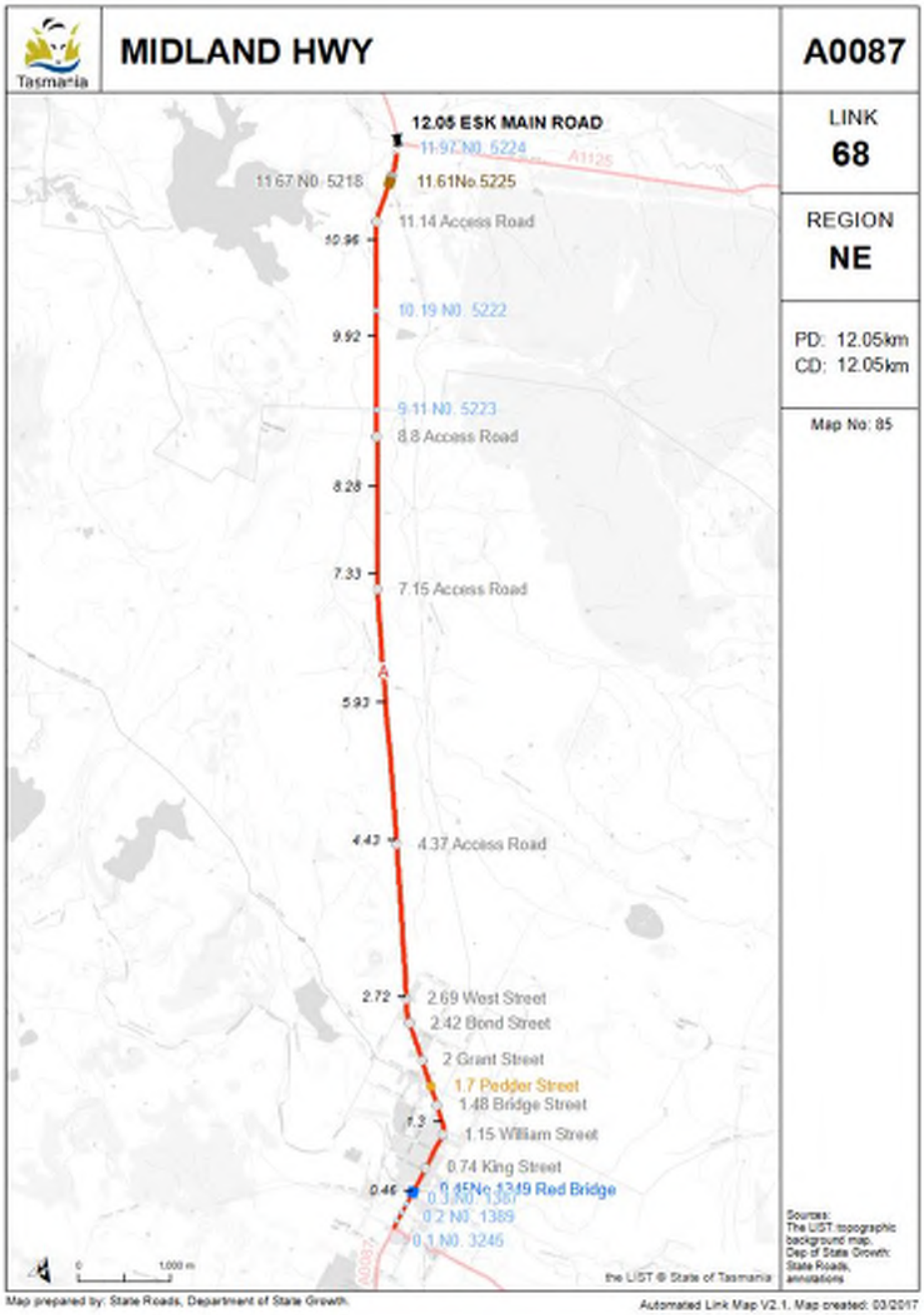
Exhibited

Appendix E - Tas. 26m B Double Network



Exhibited

Appendix F - Midlands Highway – Link 68



HYDRODYNAMICA

44 Penquite Road
LAUNCESTON TAS 7250
M: 0431 208 450
E: cameron.oakley@h-dna.com.au
ABN: 169 442 993 50

MEMO **14 July 2023**

Re: 7a William Street Subdivision Flood Prone Area Code Response Memo

1. Introduction:

Grange Vista Pty Ltd is proposing a subdivision of 7a William Street, Campbell Town, which will create 15 new residential lots. Figure 1 shows the proposed layout:

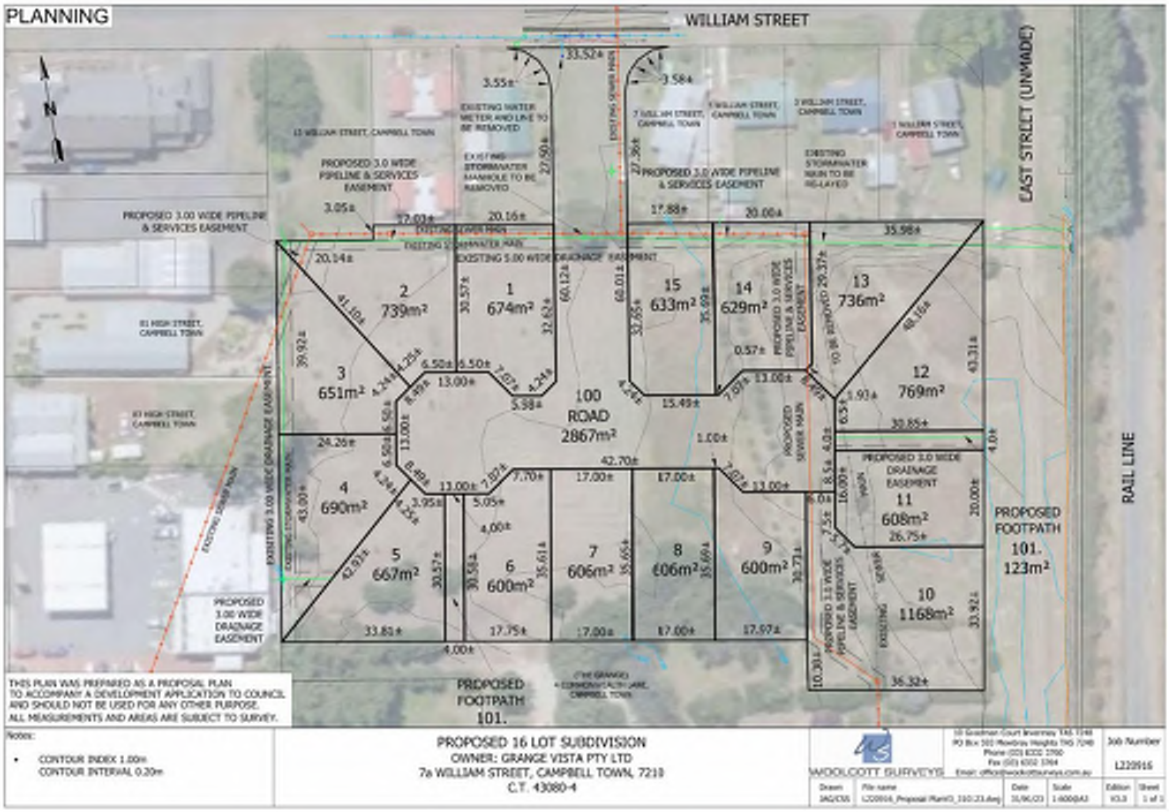


Figure 1. Proposed residential subdivision (ref. Woolcott Surveys L220916 Proposal Plan 310123 V3)

Northern Midlands Council (NMC) provided the following RFI:

Received
17/07/2023

HYDRODYNAMICA

44 Penquite Road
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ABN: 169 442 993 50

Council's Stormwater System Flood and Risk Study, available at https://mapping.nmc.tas.gov.au/IntraMaps99/ shows that part of 7A William Street and the stormwater discharge points in East Street adjacent to the railway are subject to flooding. It is therefore reasonably believed, in accordance with clause C12.2.5, that the land is subject to risk from flood and has the potential to cause increased risk from flood. Please provide a flood hazard report in accordance with clause C12.2.3. The flood hazard report is to:

- Show the flood extent on the plan of subdivsion.
- Demonstrate compliance with clause C12.6.1 P1.1 and P1.2.
- Demonstrate compliance with clause C12.7.1 P1 for each lot proposed in the plan of subdivision within the flood prone hazard area.

I note that clause C12.6.1 P1.2 (a) requires the flood hazard report to demonstrate that the works will not cause or contribute to flood on adjacent land or public infrastructure.

Council's urban flood mapping layer is shown below, which is derived from the North Campbell Town Stormwater System Flood and Risk Study (H-DNA, 2020):

Figure 2. NMC urban flood mapping layer

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ABN: 169 442 993 50

2. Pre-development Assessment:

Figure 3 shows the original modelling results contained in the North Campbell Town Stormwater System Flood and Risk Study (H-DNA, 2020) from which the urban flood mapping layer for this area was derived. It shows the following flood depths on the eastern side of undeveloped 7a William Street:

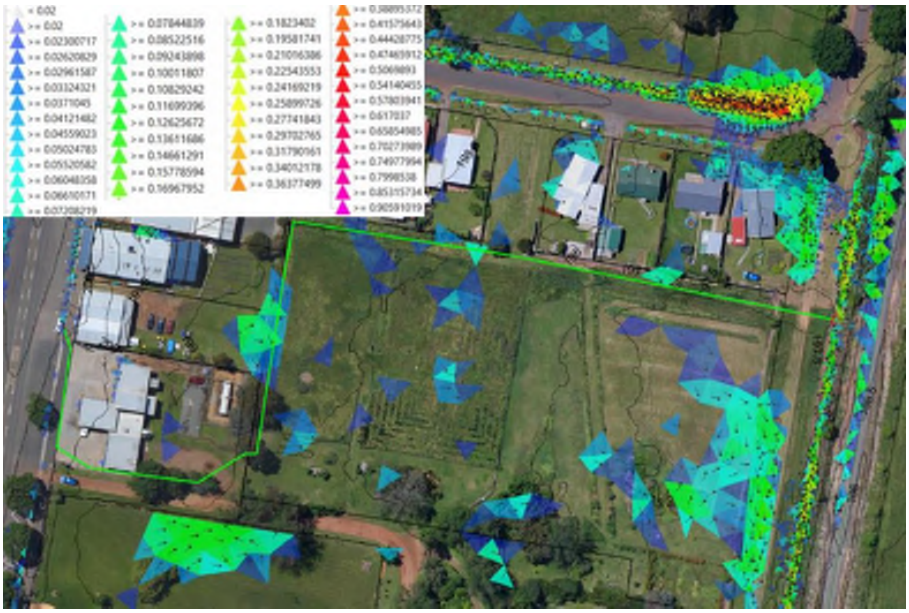

Figure 3. NMC urban flood mapping layer

This modelling displays 1% AEP flooding, with predicted flood depths of 200mm and under.

In order to provide better resolution of this flooding this same model was updated, with mesh sizing reduced to a maximum 1 m^2 per triangle. The 2017 digital elevation model (DEM) which was used in the original urban flood modelling was used in the pre-development scenario. Hydrology was the same as that described in the North Campbell Town Stormwater System Flood and Risk Study. 1D subcatchments for the surrounding residential and commercial properties were also updated.

The modelled 1% AEP rainfall was also updated to be inclusive of climate change. Australian Rainfall and Runoff (ARR) Data Hub interim climate change factors for the RCP8.5 scenario to 2090 give a 16.3% increase in rainfall depths. The Pitt and Sherry *Climateasyst* tool gives a 28.32% difference in rainfalls in 2085 compared to those in 2025. The larger *Climateasyst* climate change factor was therefore adopted.

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The revised pre-development results are shown in Figure 4, with a depth key provided:

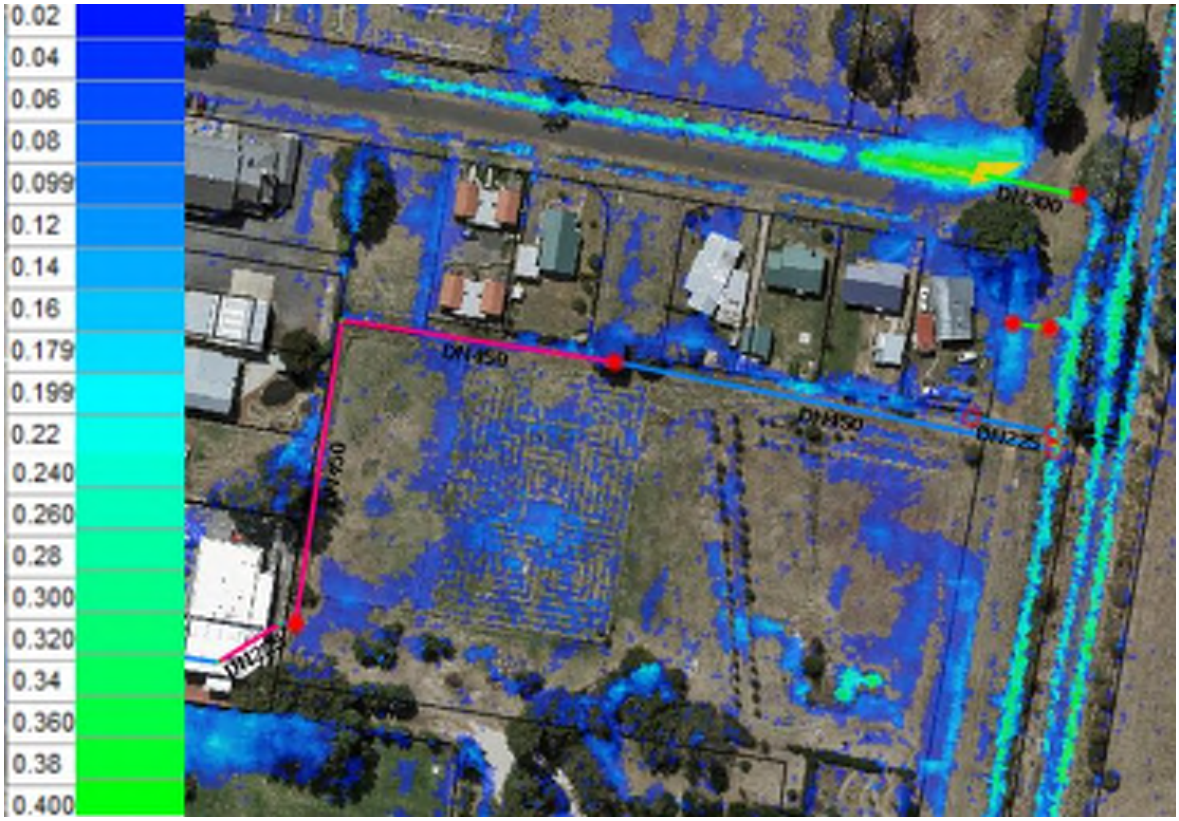

Figure 4. Updated pre-development results (1% AEP climate change)

Some ponding is noted on the site, peaking at 344mm deep in the small depression near the south-eastern corner of the property. Flooding over the remainder of the site peaks at 207mm. All flooding is in the H1 Hazard Vulnerability Classification which is 'generally safe for vehicles, people, and buildings' (Australian Rainfall and Runoff, 2019).

3. Post-development Assessment:

The pre-development model was updated to include the proposed stormwater works infrastructure changes, earthworks, and developed surfaces. Refer to Rare's Development Approval drawing series 231007 Revision A. The propose earthworks, including road formation, were patched into the latest base 1m DEM available on ELVIS (https://elevation.fsdf.org.au/) which dates to 2019.

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The new lots were assumed to be 60% impervious, with road and verges a combined 80% impervious. Hydrology was otherwise the same as in the pre-development model.

The post-development results are shown in Figure 5:

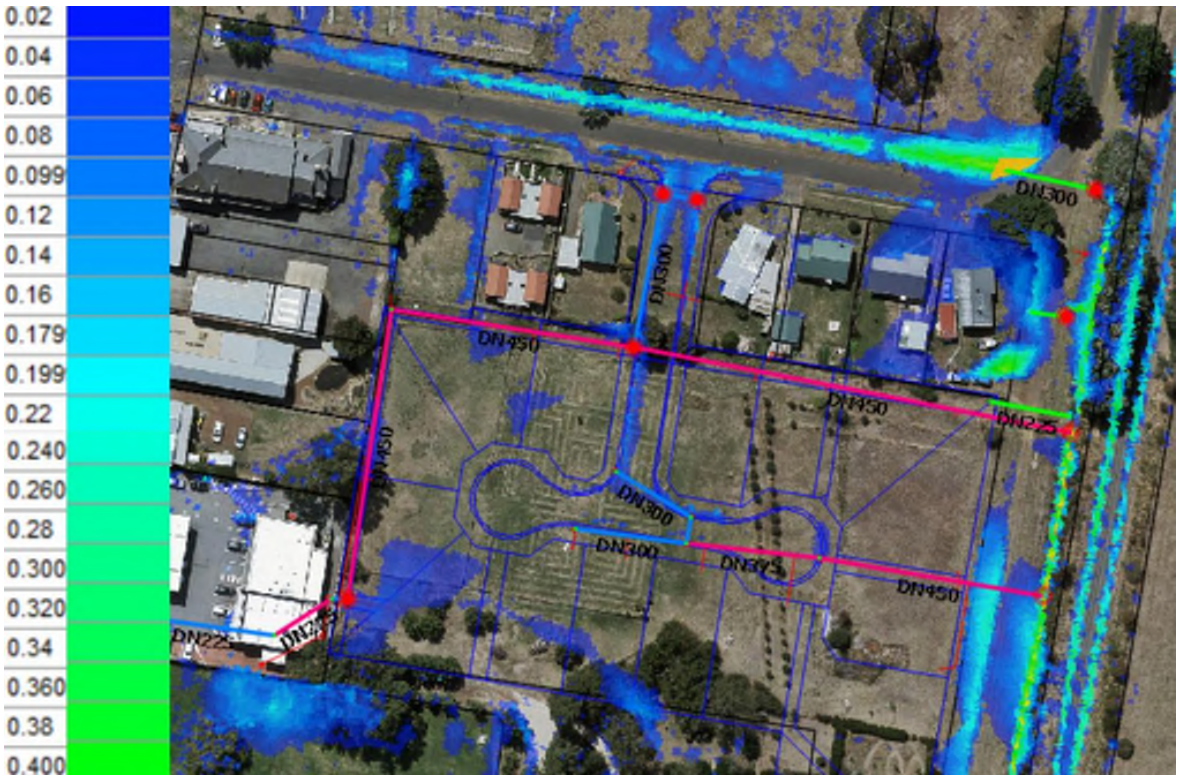

Figure 5. Post-development results (1% AEP climate change)

The post-development results show less surface water within the development footprint due to direct plumbing to the proposed stormwater network and storage within the proposed roadway.

Again, all surface water on the site is in the H1category. Roadway ponding peaks at 171mm near the proposed intersection of the new road with William Street, private property surface water peaks at 108mm at the southern boundary of proposed lots 7 and 8.

No special requirements are necessary for the dwellings on the subdivision, assuming finished floor levels (FFLs) are 100mm above the finished surface level (FSL) as per the Building Code. The

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exception are proposed Lots 7 and 8, which are recommended FFLs a minimum of 150mm above FSL.

4. Comparison of Pre and Post-development Results:

When comparing Figures 4 and 5 there are three observed differences. The first of these is around and in the open drain on the northern side of William Street and nos. 1 and 3 William Street. The footprint is larger in the post-development scenario, refer to Figure 6:

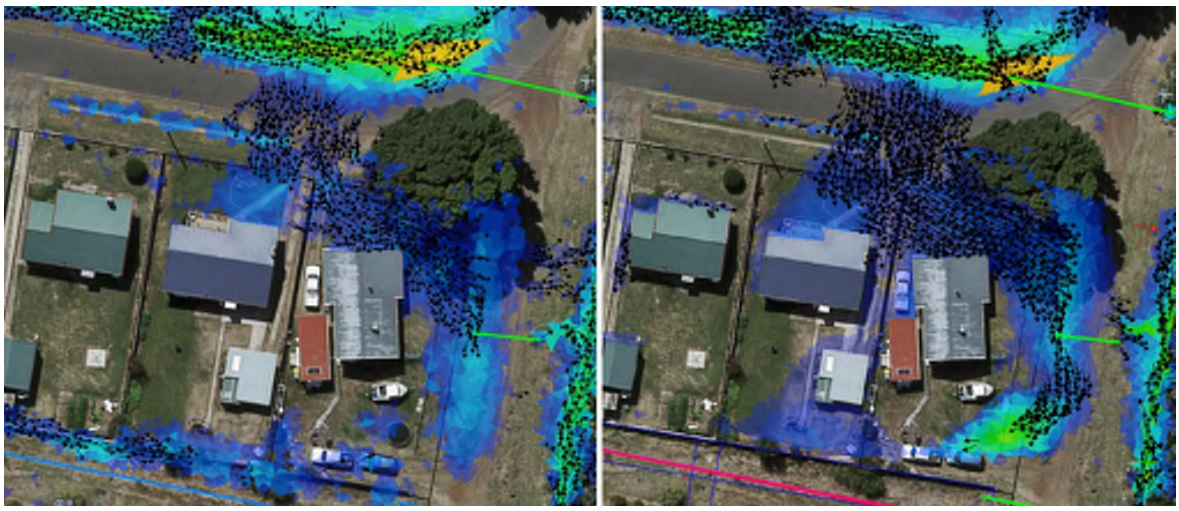

Figure 6. Pre and post-development comparison

Upon examination this is not due to the development, but is an artefact of the modelling. No subdivision runoff is directed to this open drain Flooding escaping the open drain and passing towards 1 and 3 William Street peaks at 71 L/S in the pre-developed scenario. This increases to 136 L/S in the post-development scenario, despite not being influenced by the development. This must be due to changes to the upstream catchment influencing the operation of the pre-development model, which used a 2017 DEM compared to the post-development model, which used a 2019 DEM.

The second difference is the deeper flood depth near the south-east corner of no. 1 William Street. The surface level at its deepest point is 197.44m AHD in the pre-development (2017 DEM) mesh. This compares to a surface level of 196.86m AHD in the post-development (2019 DEM). This is a difference of 580mm. Obviously, some alteration in the landform has occurred in the time between the two DEMs were captured and is certainly not a byproduct of the proposed development.

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This third difference is a larger footprint within unmade East Street, refer to Figure 7. Breakout from the existing open drain occurs, however the only impact is a larger flood footprint in the road easement. No impacts are noted on the rail line.

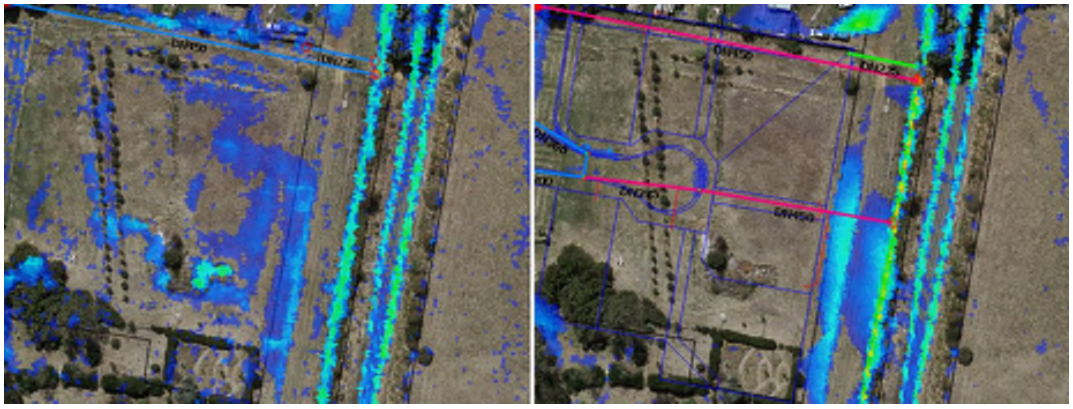

Figure 7. Pre and post-development comparison

It is understood NMCs Works and Infrastructure Department have plans to undertake an upgrade of this existing open drain. This will help reduce flooding in the unmade road easement in the 1% AEP climate change event. Breakout flooding from the open drain has a H1 Hazard Vulnerability Classification, and so is tolerable in the unmade road in the 1% climate change event, refer to Figure 8:

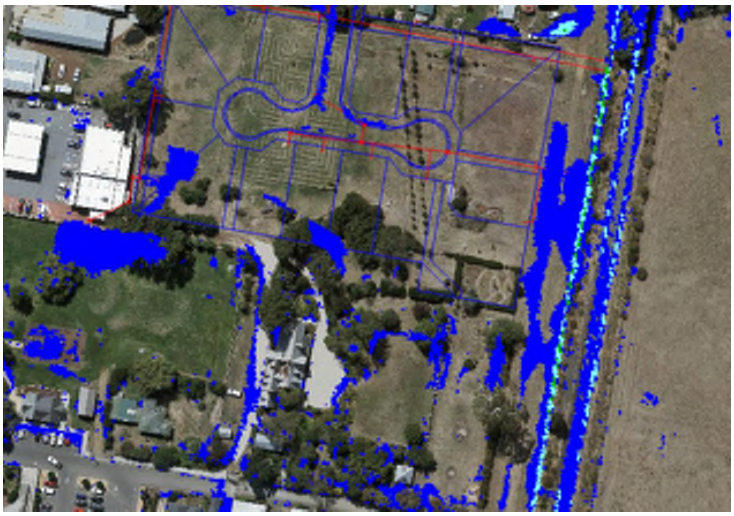

Figure 8. Post-development Hazard (H1=dark blue, H2=cyan, H3 = green)

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Peak flooding in unmade East Street occurs during the 15 minute storm event. Flooding in the unmade road has significantly retracted within 45 minutes of the completion of the storm, see Figure 9:

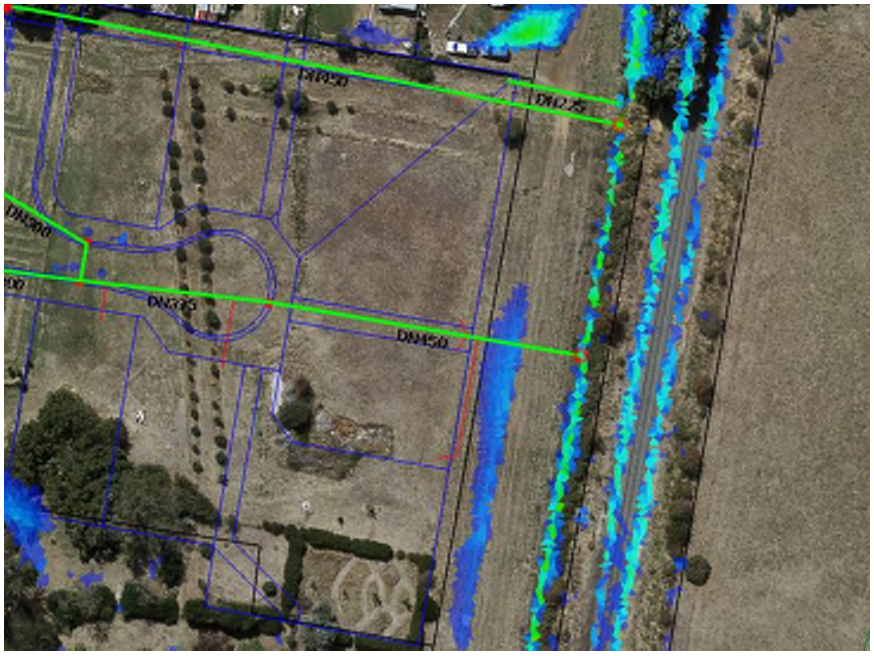

Figure 9. Post-development comparison, 45 minutes after storm completion

5. Flood Prone Areas Hazard Code Assessment

C12.6.1 is the appropriate code for a proposed subdivision:

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C12.6.1 Buildings and works within a flood-prone hazard area

Objective:	That: (a) building and works within a flood-prone hazard area can achieve and maintain a tolerable risk from flood; and (b) buildings and works do not increase the risk from flood to adjacent land and public infrastructure.

Acceptable Solutions	Performance Criteria
A1 No Acceptable Solution.	**P1.1** Buildings and works within a flood-prone hazard area must achieve and maintain a tolerable risk from a flood, having regard to: (a) the type, form, scale and intended duration of the development; (b) whether any increase in the level of risk from flood requires any specific hazard reduction or protection measures; (c) any advice from a State authority, regulated entity or a council; and (d) the advice contained in a flood hazard report. **P1.2** A flood hazard report also demonstrates that the building and works: (a) do not cause or contribute to flood on the site, on adjacent land or public infrastructure; and (b) can achieve and maintain a tolerable risk from a 1% annual exceedance probability flood event for the intended life of the use without requiring any flood protection measures.

Performance Criteria P1.1:

a) Modest reshaping of the site ensures that the 1% AEP climate change storm events have a very limited impact on the subdivision site. Surface water, which is expected over significant proportions of the catchment in this extreme event, is shallow, safe, and tolerable. Acceptable.
b) No specific hazard reduction measures are required, other than finished floor levels (FFLs) of future dwellings on Lots 7 and 8 being to be a minimum 150mm above the finished surface level (FSL). Acceptable.
c) No advice. Acceptable.
d) No further advice. Acceptable.

Performance Criteria P1.2:

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a) The subdivision, when fully developed, will contribute to modest flooding of unmade East Street. As per Figures 8 and 9 the resultant flooding is safe, and will not be present for extended periods. No impacts are predicted on the rail line. Acceptable.
b) The evidence provided in this report shows a tolerable risk is present and maintained for the life of the development. Acceptable.

The proposed development is therefore acceptable under C12.6.1 P1.1 and P1.2.

C12.7.1 is the appropriate code for a proposed subdivision:

C12.7.1 Subdivision within a flood-prone hazard area

Objective:	That subdivision within a flood-prone hazard area does not create an opportunity for use or development that cannot achieve a tolerable risk from flood.
Acceptable Solutions	**Performance Criteria**
A1 Each lot, or a lot proposed in a plan of subdivision, within a flood-prone hazard area, must: (a) be able to contain a building area, vehicle access, and services, that are wholly located outside a flood-prone hazard area; (b) be for the creation of separate lots for existing buildings; (c) be required for public use by the Crown, a council or a State authority; or (d) be required for the provision of Utilities.	**P1** Each lot, or a lot proposed in a plan of subdivision, within a flood-prone hazard area, must not create an opportunity for use or development that cannot achieve a tolerable risk from flood, having regard to: (a) any increase in risk from flood for adjacent land; (b) the level of risk to use or development arising from an increased reliance on public infrastructure; (c) the need to minimise future remediation works; (d) any loss or substantial compromise by flood of access to the lot, on or off site; (e) the need to locate building areas outside the flood-prone hazard area; (f) any advice from a State authority, regulated entity or a council; and (g) the advice contained in a flood hazard report.

Performance Criteria P1:

a) 1% AEP climate change flooding on the adjacent unmade road increases, however this is contained within the road easement and has a safe H1 Hazard Vulnerability Classification. This is a tolerable risk and there is no increased risk to private property or to the rail line. Acceptable.
b) As per P1(a). Acceptable.
c) There is no need for future remediation works, however it is understood NMC have plans to improve the existing open drain, which will help reduce the flood footprint. Acceptable.

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d) Access to lots is unaffected. Acceptable.
e) No need for buildings to be located outside flood-prone hazard area. Dwellings on Lots 7 and 8 to have FFLs a minimum 150mm above FSL. Acceptable.
f) No advice.
g) No further advice provided. Acceptable.

The proposed development is therefore acceptable under C12.7.1 P1.

Cameron Oakley

CONSULTING ENGINEER

B.Tech, B.Eng (Hons), MBA

Licensed Building Services Provider No. 949718126

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EAST COAST SURVEYING

BUSHFIRE HAZARD REPORT

15 Lot Subdivision

7a William Street, Campbell Town

April 2023

Job number: L220916
WS118
Prepared by: James Stewart (james@woolcottsurveys.com.au)
Town Planner & Bushfire Hazard Practitioner 157

Rev. no	Description	Date
1	FINAL	05/04/2023
2	UPDATE	02/05/2023

Disclaimer
This report deals with the potential bushfire risk only, all other statutory assessments sit outside of this report. This report is not to be used for future or further development on the site, other then what has been specifically provided for in the certified plans attached. Woolcott Surveys Pty Ltd accepts no responsibility to any purchaser, prospective purchaser or mortgagee of the property who in any way rely on this report. This report sets out the owner's requirements and responsibilities and does not guarantee that buildings will survive in the event of a bushfire event. If characteristics of the property change or are altered from those which have been identified, the BAL classification may be different to that which has been identified as part of this report. In this event the report is considered to be void.

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Executive Summary

Development of a 15 lot residential subdivision is proposed for 7a William Street, Campbell Town. The development will be completed over one stage. Access to lots will be via William Street, which adjoins the property to the north.

The site is entirely within the boundary of a bushfire prone area shown on an overlay of a planning scheme map for the *Tasmanian Planning Scheme – Northern Midlands*. A bushfire event at this site or within the immediate area is likely to impact on future buildings at this location and subject development to considerable radiant heat and ember attack.

A bushfire hazard management plan has been prepared and is provided as an appendix to this report. The plan sets out the owner's responsibilities to maintain a managed area for each lot, taking into consideration the relevant requirements under Australian Standard *AS3959-2018 Construction of buildings in bushfire-prone areas*.

Conclusions and recommendations

a) Hazard management areas meeting the requirements of BAL 19 can be achieved for lots 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14. Lots 1-3, and Lot 15 meet the requirements of BAL LOW, being over 50m from any bushfire prone vegetation.

b) Future dwellings on lots 1-15 must maintain Hazard Management Areas and follow recommendations as outlined in the Bushfire Hazard Management Plan and section 5.2 of this report. Maintenance of these hazard management areas is to be in perpetuity.

c) The proposed road must be in compliance with Table C13.1, Element A, outlined in section 5.3 of this report, with the exception of a 12m outer radius turning head. No standing signage is to be provided at both ends of the cul-de-sac.

d) New hydrants are required in accordance with the TasWater supplement to Water Supply code of Australia WAS 03-2011-3.1 MRWA Edition 2:0. Hydrants to have a separation of not more than 60m.

e) All lots are to be treated as a hazard management area in accordance with section 5.2 of this report. Maintenance of all hazard management areas must be in perpetuity.

f) Prior to the sealing of the final plan, solid metal fencing to a height of 2.4m is required along the eastern boundary of lots 10, 11 and 12, and solid fencing to a height of 2.1m is required along the southern boundary of lot 7, 8, 9, and 10, as shown on the Bushfire Hazard Management Plan. Fencing should not be constructed across the eastern boundary of lot 101.

Signed:

Author: James Stewart
Accreditation No: BFP-157

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1. Introduction

This Bushfire Hazard Report and Bushfire Hazard Management Plan (BHMP) has been prepared in support of a proposed 15 lot subdivision at 7a William Street, Campbell Town.

1.1 The subject site

The following is a summary of the application information:

Property address	7a William Street, Campbell Town.
Certificate of title	CT43080/4
Property ID (PID)	9240372
Property Owners	Grange Vistas Pty Ltd
Existing Use and Development	Vacant Land
Existing Zoning	General Residential.
Planning Scheme	Tasmanian Planning Scheme – Northern Midlands
Identified on a Bushfire Overlay Map	Yes
Priority Habitat identified	Yes
Proposed Works	15 Residential lots, cul de sac road and two pedestrian linkages.
Water Supply	Reticulated water supply.
Vehicular Access	William Street.

1.2 Bushfire Assessment

A bushfire assessment is a process of analysing information about the potential impacts on a proposed development that is likely to occur in a bushfire hazard scenario. A 'bushfire-prone area' is an area where a bushfire event is potentially likely to occur, and that may result in significant adverse impact on buildings and/or lives.

In Tasmania, most local Councils have a planning scheme overlay map that identifies bushfire-prone areas. Subdivision within a bushfire-prone area triggers the assessment of the Bushfire-Prone Areas Code under the planning schemes and subsequently requires assessment against the provisions of the Code. The assessment generally requires a BHMP to be provided as part of the application.

The bushfire assessment will determine the Bushfire Attack Level (BAL) for the future lots, which measures the possible exposure of a building to bushfire hazard. The BAL is assessed in accordance with Australian Standard *AS 3959-2018 construction of buildings in bushfire-prone areas.*

The subject site falls within the municipal area of Northern Midlands. The assessment has been undertaken in accordance with C13.0 Bushfire-Prone Areas Code and to accompany a subdivision application under the *Tasmanian Planning Scheme – Northern Midlands.* Please refer to Section 6 of the report for detail.

A BAL assessment is required to understand the fuel management requirements for the subject site and to demonstrate that future new buildings within each proposed new lots can be constructed to a BAL19 level under the *Building Act 2016*.

1.3 References

The following documents were referred in the preparation of, and should be read in connection with, this bushfire assessment report:

- Tasmanian Government, Director's Determination – Requirements for Building in Bushfire Prone Areas Version 2.2.
- Tasmanian Government, Director's Determination – Bushfire Hazard Areas Version 1.1
- Tasmanian Planning Scheme – Northern Midlands. C13.0 – Bushfire-Prone Areas Code
- Australian Standard, AS3959-2018 construction of buildings in bushfire-prone areas.
- Building Act 2016
- Tasmanian Fire Service, Bushfire Hazard Advisory Notes

2. Site Description

2.1 Site context

A 15-lot subdivision is being undertaken at 7a William Street, Campbell Town. The subdivision will be undertaken in one stage. The site consists of one regular shaped internal lot, which has a total area of 1.3ha. The land is located on the eastern side of the existing urban area of Campbell Town, within the general residential area of the township.

The site is currently vacant land. There is informal access provided via an unformed access strip onto William Street. The site adjoins the TasRail line and reserve to the east of the site.

The site adjoins residential land to the north and commercial development to the west. Land to the south appears to be residential, although does contain a permanently listed heritage building, 'The Grange'.

The site is generally flat, with the site sitting at the 200m AHD contour.

Figure 1 – Aerial view of the subject site and its surrounding area (source: The LISTMap)

The subject site will be serviced by a reticulated water supply maintained by TasWater which runs from William Street to the north.

2.2 Planning controls

The site is within the municipal area of the Northern Midlands Council. Therefore, the planning instrument is the *Tasmanian Planning Scheme – Northern Midlands* (The Scheme).

The subject site is currently within the General Residential Zone. There are two small portions of land within the open space zone. The subject site adjoins the General Residential zone to the north, general business zone to the west, community purpose land to the south, and utilities zone to the east.

The subject site entirely falls within the Bushfire-Prone Areas Overlay

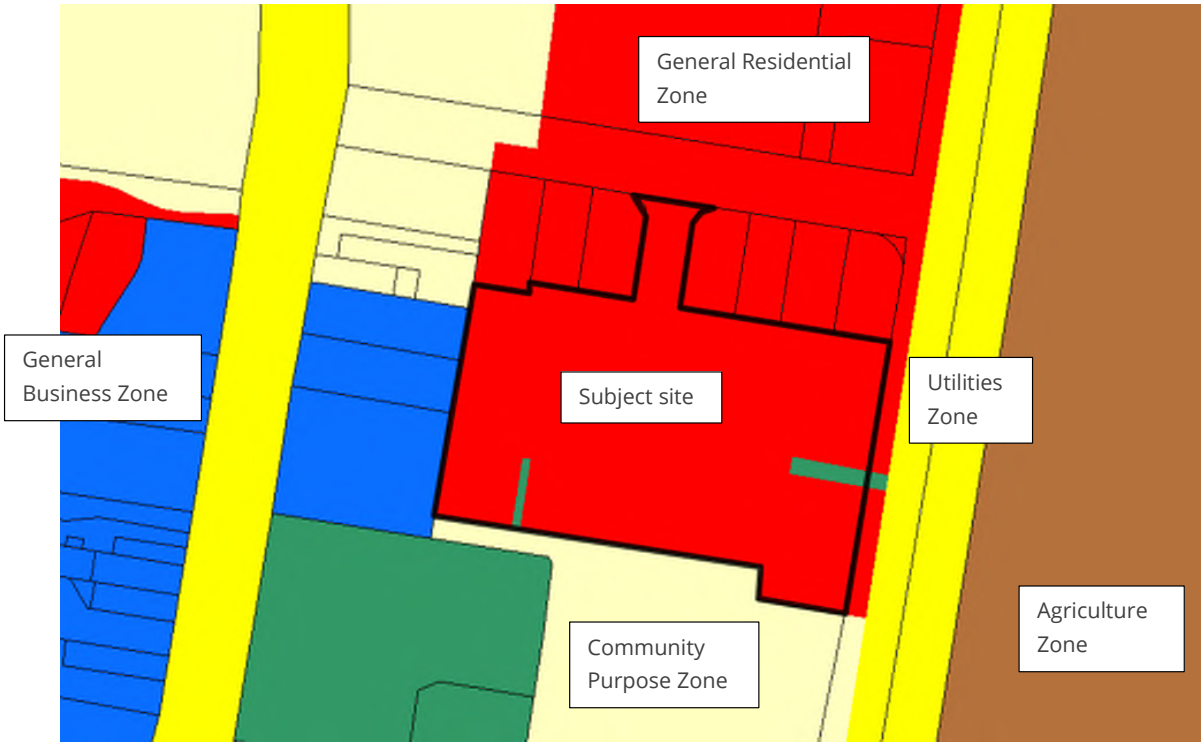


Figure 2 – Zoning Map (source: The LIST Map)

3. The Proposal

It is proposed to subdivide the subject site into 15 residential lots. The lots are intended for residential development. Lots range in size from 600m^2 up to 1168m^2. A new cul-de-sac road will be developed from William Street, providing access via two cul-de-sac heads across the subject site. Solid metal fencing will be provided on the eastern boundary of lots 10, 11 and 12, and the southern boundary of lots 7-10 to provide a greater BAL 19 compliant building areas.

Cul-de-sac roads will be compliant with LGAT standards, with a recommendation to provide no standing signage on the cul-de-sac. The development will be serviced via reticulated water with hydrants installed as per engineering design and TasWater requirements.

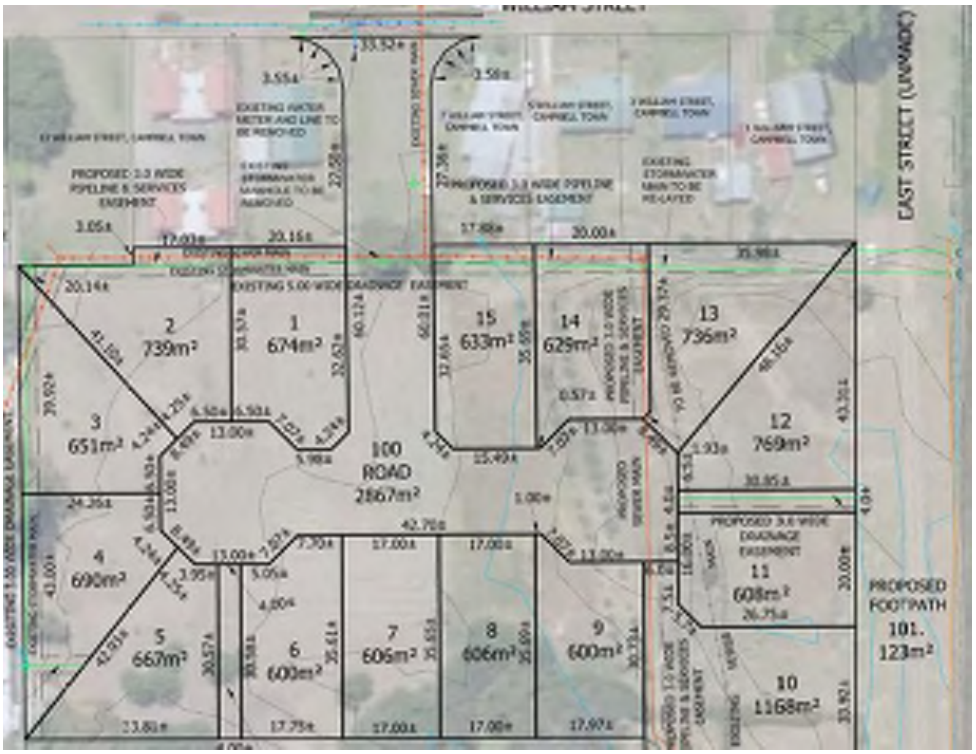


Figure 3 – Proposed subdivision layout. Refer to Annexure 2 for detail.

4. Bushfire Site Assessment

4.1 Vegetation Analysis

4.1.1 TasVeg Mapping

The TasVeg map 4.0 provides general information indicating potential bushfire prone vegetation in the area.

The mapping shows the vegetation community across the subject site as FAG (Agricultural Land). Land to the north, south and west are classified as Urban (FUM) land. The mapping appears to be generally be an accurate portrayal of mapping on site. A site visit noted that land to the south, adjoining lots 6-10 was classified as grassland and wasn't currently managed by the Grange residential property.

No other vegetation classifications other than grassland has been identified within 120m of the subject site.

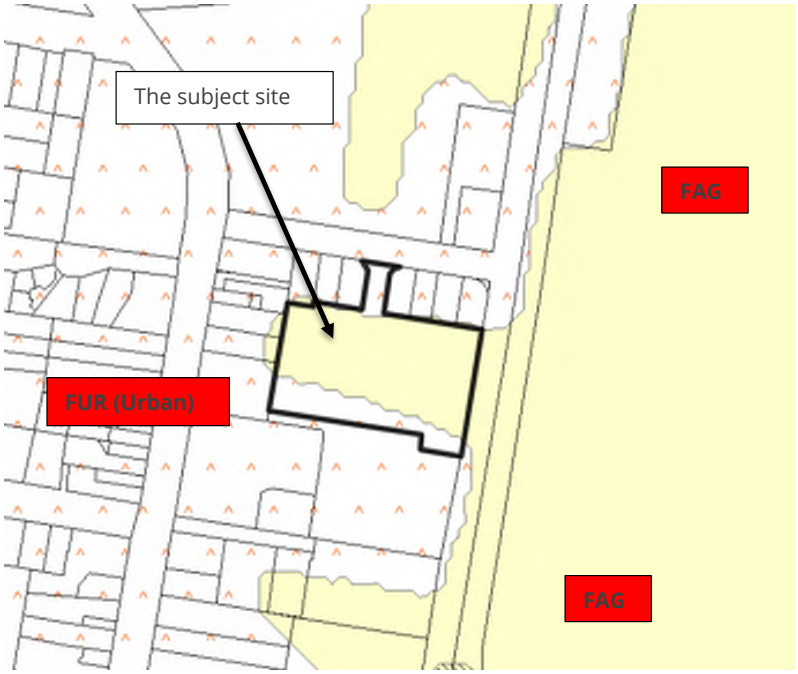


Figure 4 – TasVeg 4.0 map (source: The LISTMap)

4.1.2 Vegetation Type and Separation

A site visit was conducted on the 9th of March 2023. An analysis of the land and bushfire prone vegetation within 120m from the subject site is provided below.

Direction	Analysis
North	Land directly north of the access onto William Street, contained grassland for 100m+. The grassland was used for grazing purposes at the time of inspection. It adjoined the recreation complex to the north west.
East	Grassland for 100m+. Part of a large and active farming estate. The road reserve directly adjoining the site wasn't managed and was assessed as a bushfire threat.
South	Land to the south of lots 7-10 was classified as grassland for a distance of approximately 5m - 15m. This portion of land was privately owned and part of the heritage listed 'Grange' estate. The site visit showed that this portion of the land wasn't managed with the remainder of the site and was assessed as a potential threat. Land to the south of lots 5 and 6 provided an unused gravel track. There were some vegetation plantings within this access strip to the south. There was no unmanaged understory through this section, with the strip of trees having a width of 8m. Land beyond the strip to the south was managed as the Campbell Town park. The balance of the land to the south was considered as managed.
West	Managed for 100m+

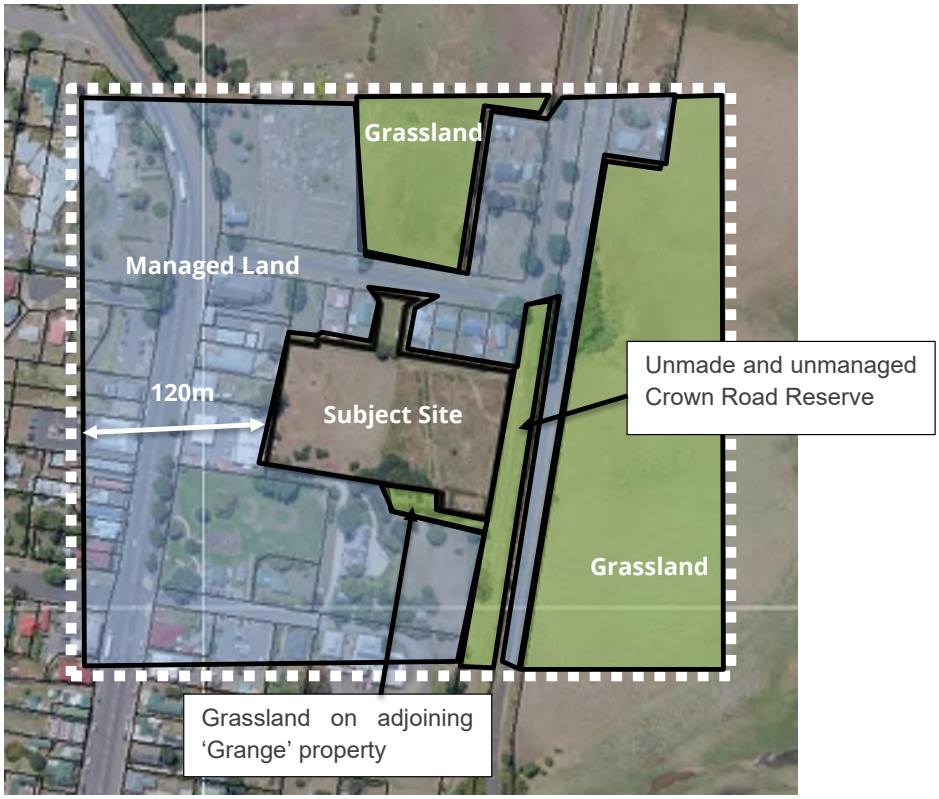


Figure 5 – Vegetation analysis within 100m – 120m of site.

4.2 Slope Analysis

Figure 6 below shows the slope of land under the classified vegetation **in relation to** the subject site. The identified bushfire prone vegetation occurs on land that is generally flat. There is no obvious slope within the surrounding area.

Figure 6 – Effective slope of site and surrounding bushfire prone vegetation.

4.3 Photos

Figure 7 – view across the subject site, looking south west.

Figure 8 – Unmanaged grassland on property to the south, adjoining lots 7-10.

Figure 9 – Unmanaged road reserve to the east. Classified as grassland.

Figure 10 – Managed portion of land on the property to the south, the grassland identified on this site (figure 8) is to the right of this photo.

Figure 11 – Vegetation on the southern sides of lots 5 and 6. Not classified as bushfire prone due to lack of understory and minimal width. Not within 20m of other bushfire prone vegetation and adjoins park.

Figure 12 – managed park, public land that adjoins the access strip to the south of lots 5 and 6.

5. Bushfire Protection Measures

5.1 BAL Rating and Risk Assessment

The purpose of the BAL assessment is to identify the minimum separation between the bushfire prone vegetation and a building area within each proposed lot. The assessment aims to achieve the minimum requirements of **BAL 19**.

The definition of BAL 19 is highlighted as follows:

Bushfire attack level (BAL)	**Predicted bushfire attack and exposure level**
BAL-LOW	Insufficient risk to warrant specific construction requirements
BAL-12.5	Ember attack, radiant heat below 12.5kW/m^2
BAL-19	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 12.5-19kW/m^2
BAL-29	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 19-29kW/m^2
BAL-40	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 29-40kW/m^2
BAL-FZ	Direct exposure to flames radian heat and embers from the fire front.

The distances from each lot to the classified vegetation is presented below, along with the slope and type of vegetation. To better demonstrate the required separation as hazard management areas, a 10m x 15m building area is shown on each lot. As per the analysis in Section 4.1, the only vegetation around the subject site is grassland.

Lots 1-3 and lot 15 have been assessed as BAL LOW. This is on the basis that lots are over 50m form grassland, which is the only identified bushfire prone vegetation within 100m of the subject site.

Lot 4	**North**	**East**	**South East**	**West**
Vegetation within 100m of site	0m-100m+ Managed	0m-100m+ Managed	0m-40m+ Managed 40m-60m Grassland 60m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	NA	Flat	NA
BAL 19 Setbacks	NA	NA	NA	NA
BAL 12.5 Setbacks	NA	NA	NA	NA

Lot 5	North	East	South East	West
Vegetation within 100m of site	0m-100m+ Managed	0m-100m+ Managed	0m-20m+ Managed 20m-40m Grassland 40m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	NA	Flat	NA
BAL 19 Setbacks	NA	NA	NA	NA
BAL 12.5 Setbacks	NA	NA	NA	NA

Lot 6	North	East	South East	West
Vegetation within 100m of site	0m-100m+ Managed	0m-85m Managed 85m-100m+ Grassland	0m-6m+ Managed 6m-20m Grassland 20m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	NA	6m	NA
BAL 12.5 Setbacks	NA	NA	9m	NA

Lot 7	North	East	South	West
Vegetation within 100m of site	0m-100m+ Managed	0m-70m Managed 70m-100m+ Grassland	0m-6m+ Managed 6m-20m Grassland 20m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	NA	6m	NA
BAL 12.5 Setbacks	NA	NA	9m	NA

Lot 8	North	East	South	West
Vegetation within 100m of site	0m-100m+ Managed	0m-55m Managed 55m-100m+ Grassland	0m-6m+ Managed 6m-20m Grassland 20m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	NA	6m	NA
BAL 12.5 Setbacks	NA	NA	9m	NA

Lot 9	North	East	South	West
Vegetation within 100m of site	0m-100m+ Managed	0m-40m Managed 40m-100m+ Grassland	0m-6m+ Managed 6m-20m Grassland 20m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	NA	6m	NA
BAL 12.5 Setbacks	NA	NA	9m	NA

Lot 10	North	East	South	West
Vegetation within 100m of site	0m-100m+ Managed	0m-5.5m Managed 5.5m-100m+ Grassland	0m-6m+ Managed 6m-20m Grassland 20m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	5.5m	6m	NA
BAL 12.5 Setbacks	NA	9m	9m	NA

Lot 11	North	East	South	West
Vegetation within 100m of site	0m-100m+ Managed	0m-7.5m Managed 7.5m-100m+ Grassland	0m-30m+ Managed 30m-44m Grassland 44m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	7.5m	NA	NA
BAL 12.5 Setbacks	NA	10.5m	NA	NA

Lot 12	North	East	South	West
Vegetation within 100m of site	0m-60m Managed 60m-100m+ Grassland	0m-7.5m Managed 7.5m-100m+ Grassland	0m-55m+ Managed 55m-69m Grassland 69m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	7.5m	NA	NA
BAL 12.5 Setbacks	NA	10.5m	NA	NA

Lot 13	North	East	South	West
Vegetation within 100m of site	0m-60m Managed 60m-100m+ Grassland	0m-7.5m Managed 7.5m-100m+ Grassland	0m-60m+ Managed 60m-74m Grassland 74m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	6m	NA	NA
BAL 12.5 Setbacks	NA	9m	NA	NA

Lot 14	North	East	South	West
Vegetation within 100m of site	0m-60m Managed 60m-100m+ Grassland	0m-38m Managed 38m-100m+ Grassland	0m-55m+ Managed 55m-69m Grassland 69m-100m+ Managed	0m-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	NA	NA	NA
BAL 12.5 Setbacks	NA	NA	NA	NA

5.2 Hazard Management Areas

As outlined in the *Planning Directive 5.1 – Bushfire-Prone Areas Code*, a Bushfire Hazard Management Area (BHMA) will be managed in accordance with the provided plan. Existing vegetation needs to be strategically modified and then maintained within this area in accordance with the BHMP to achieve the following outcomes:

- to reduce the quantity of windborne sparks and embers reaching buildings;
- to reduce radiant heat at the building; and
- to halt or check direct flame attack.

The BHMA will be developed within and up to the property boundaries to provide access to a fire front for firefighting, which is maintained in a minimal fuel condition and in which there are no other hazards present that will significantly contribute to the spread of a bushfire.

The BHMA will be achieved by adoption of the following strategies:

Maintenance of Fuel Management Areas

It is the responsibility of the property owner to maintain and manage the landscaping in accordance with the Bushfire Hazard Management Plan and the current Guidelines for Development in Bushfire-Prone Areas of Tasmania.

This area is to be regularly managed and maintained. Landscaping in this area will be minimised:

- Grass maintained to a maximum height of 100mm, with fuel loads kept to less than 2 tonnes per hectare which will be maintained at this level.
- Trees and any undergrowth will be clear of (BCA) class 1 – 9 buildings on all sides.
- All undergrowth and understorey of trees (up to 2m) will be removed within the bushfire hazard management area.
- Select larger trees can be retained within the BHMA, ensuring a minimum 5m canopy separation is provided between each established tree.
- Pathways to 1 metre surrounding the buildings and landscaping material, will be non-combustible (stone, pebbles etc.).
- The total shrub cover will be a maximum of 20% of the available area.
- There will be a clear space from the buildings of at least four (4) times the mature height of any shrubs planted.
- Shrubs will not be planted in clumps, this is to avoid build-up of debris and dead vegetation materials.

Landscaping

- vegetation along the pathways to comprise non-flammable style succulent ground cover or plants (avoid plants that produce fine fuel which is easily ignited, plants that produce a lot of debris, trees and shrubs which retain dead material in branches or which shed long strips of bark, rough fibrous bark or drop large quantities of leaves in the spring and summer, vines on walls or tree canopies which overhang roofs)
- timber woodchip and flammable mulches cannot be used and brush and timber fencing should be avoided where possible

5.3 Roads

Table C13.1 - Roads must be constructed as per the following table. In this instance, performance criteria have been addressed due to the size of the cul-de-sac outer radius.

Element		Requirement
A.	Roads	Unless the development standards in the zone require a higher standard, the following apply: (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 7 meters in width; (j) dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and 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*.

5.4 Access

Table C13.2 Private access roads must be constructed as per the following table:

Element		Requirement
A.	Property access length is less than 30m; or access is not required for a fire appliance to access a fire fighting water point.	There are no specified design and construction requirements.

5.5 Fire Fighting Water Supply

Table C13.4 Reticulated water supply for firefighting.

Element		Requirement
A.	Distance between building area to be protected and water supply.	The following requirements apply: (a) the building area to be protected must be located within 120m of a fire hydrant; 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.	Design criteria for fire hydrants	The following requirements apply: (a) fire hydrant system must be designed and constructed in accordance with *TasWater Supplement to Water Supply Code of Australia WSA 03 – 2011-3.1 MRWA 2nd Edition*; and (b) fire hydrants are not installed in parking areas.
C.	Hardstand	A hardstand area for fire appliances must be: (a) no more than 3m from the hydrant, measured as a hose lay; (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.

6. Bushfire-Prone Areas Code Assessment

An assessment of C13.0 Bushfire-Prone Areas Code under the Scheme is provided as follows.

C13.6 Development Standards for Subdivision

C13.6.1 Subdivision: Provision of hazard management areas

Objective	
Subdivision provides for hazard management areas that: (a) facilitate an integrated approach between subdivision and subsequent building on a lot; (b) provide for sufficient separation of building areas from bushfire-prone vegetation to reduce the radiant heat levels, direct flame attack and ember attack at the building area; and (c) provide protection for lots at any stage of a staged subdivision.	
Performance Criteria	**Proposed solutions**
P1 A proposed plan of subdivision shows adequate hazard management areas in relation to the building areas shown on lots within a bushfire-prone area, having regard to: a) the dimensions of hazard management areas; b) a bushfire risk assessment of each lot at any stage of staged subdivision; c) the nature of the bushfire-prone vegetation including the type, fuel load, structure and flammability; d) the topography, including site slope; e) any other potential forms of fuel and ignition sources; f) separation distances from the bushfire-prone vegetation not unreasonably restricting subsequent development; g) an instrument that will facilitate management of fuels located on land external to the subdivision; and h) any advice from the TFS.	P1 Performance criteria is relied upon due to relying on Colorbond fencing to increase the potential build area. a) An adequate hazard management area has been provided for lots along the southern and eastern sides. Each lot is required to maintain the entire lot as a hazard management area. b) The subdivision will not be staged. c) The bushfire prone vegetation is grassland. Its fuel load, structure and flammability is considered low. d) The bushfire prone vegetation is on land with no slope. It is level/upslope from the site. e) There are no other identified forms of fuel and ignition sources. f) The separation distances do not restrict subsequent development. g) There is no need to have a part 5 agreement or easement on land external to the subdivision. The TFS has reviewed the proposal.

C13.6.2 Subdivision: Public and firefighting access

Objective

Access roads to, and the layout of roads, tracks and trails, in a subdivision:

(a) allow safe access and egress for residents, fire fighters and emergency service personnel;

(b) provide access to the bushfire-prone vegetation that enables both property to be defended when under bushfire attack and for hazard management works to be undertaken;

(c) are designed and constructed to allow for fire appliances to be manoeuvred;

(d) provide access to water supplies for fire appliances; and

(e) are designed to allow connectivity, and where needed, offering multiple evacuation points.

Acceptable solutions	Proposed solutions
P1 A proposed plan of subdivision shows access and egress for residents, fire-fighting vehicles and emergency service personnel to enable protection from bushfires, having regard to: a) appropriate design measures, including: i) two way traffic; ii) all weather surfaces iii) height and width of any vegetation clearances iv) load capacity v) provision of passing bays vi) traffic control devices vii) geometry, alignment and slope of roads, tracks and trails viii) use of through roads to provide for connectivity ix) limits on the length of cul-de-sacs and dead-end roads x) provision of turning areas xi) provision for parking areas xii) perimeter access; and xiii) fire trails b) the provision of access to i) bushfire-prone vegetation to permit the undertaking of hazard management works; and ii) fire fighting water supplies; and any advice from the TFS.	P1) Performance criteria is relied upon due to the outer radius of the proposed cul-de-sac. It is proposed to have standard kerb and channel, thus not providing 12m outer radius suitable for turning. A more detailed response to the criteria is provided later in this report.

C13.6.3 Subdivision: Provision of water supply for firefighting purposes

Objective Adequate, accessible and reliable water supply for the purposes of fire fighting can be demonstrated at the subdivision stage and allow for the protection of life and property associated with the subsequent use and development of bushfire-prone areas.	
Acceptable solutions	**Proposed solutions**
A1 In areas serviced with reticulated water by the water corporation: (a) TFS or an accredited person certifies that there is an insufficient increase in risk from bushfire to warrant the provision of a water supply for fire fighting purposes; (b) A proposed plan of subdivision showing the layout of fire hydrants, and building areas, is included in a bushfire hazard management plan approved by the TFS or accredited person as being compliant with Table E4; or (c) A bushfire hazard management plan certified by the TFS or an accredited person demonstrates that the provision of water supply for fire fighting purposes is sufficient to manage the risks to property and lives in the event of a bushfire.	A1 a) Not applicable b) The acceptable solution is achieved, noting that the BHMP shows the indicative location of hydrants. This will be determined as part of the final engineering design. Building areas are compliant with table C13.4, being within 120m of a hydrant.
A2 In areas that are not serviced by reticulated water by the water corporation: (a) The TFS or an accredited person certifies that there is an insufficient increase in risk from bushfire to warrant provision of a water supply for fire fighting purposes; (b) The TFS or an accredited person certifies that a proposed plan of subdivision demonstrates that a static water supply, dedicated to fire fighting, will be provided and located compliant with Table E5; or (c) A bushfire hazard management plan certified by the TFS or an accredited person demonstrates that the provision of water supply for fire fighting purposes is sufficient to manage the risks to property and lives in the event of a bushfire.	A2 Not applicable as the subject site is serviced by reticulated water.

7. Justification of Cul-De-Sacs

As noted in section 6 of this report, the application relies on performance criteria due to the cul-de-sacs not proposing a 12m outer radius turning head. The cul-de-sac has instead proposed to be constructed in accordance with LGAT standards, being a 9m outer radius head with regular kerb and channel.

In providing justification on a reduced standard, it is noted that all parts of the access standards can be achieved as compliant with Table C13.1, with the exclusion of the cul-de-sac radius.
The current cul-de-sac is proposed to be 9m outer radius, with regular kerb and channel, consistent with the remainder of residential areas in Campbell Town

In arguing that a cul-de-sac constructed to urban standards is appropriate, the following is noted:

- Lots 1-3 and 15 are considered insufficient increase in risk, being over 50m from bushfire prone vegetation (grassland). The majority of remaining lots can be developed at BAL 12.5.
- The surrounding area is not bushland, but predominantly urban and agricultural in character, made up of residential uses and grazing land. The closest bushfire prone vegetation is 30m from the end of the eastern cul -de-sac.
- All lots can provide compliant accesses, as building areas for each of these lots is less than 30m from a road.
- Hydrants will be installed along the new cul-de-sac road, as well as on the surrounding road networks which adjoin the site.

It is subsequently argued that an urban cul-de-sac outer radius of 9m is appropriate for the location, given the nature of the lots and surrounding area, compliant accesses, and water provisions.

The safety of fire fighters has been considered when making this assessment. The generally urban environment to the north, south and west ensures there will be no unmanaged fuels in these areas. The road reserve to the east provides vehicular access for fire trucks in an emergency event.

A detailed response to the performance criteria of clause C13.6.2 Subdivision: Public and firefighting access is provided below.

P1) Performance criteria is relied upon as:

a) The cul-de-sac head will be constructed in accordance with LGAT Standard drawings, having a radius of 9m. The acceptable solution requires a radius of 12m for cul-de-sacs within a bushfire prone area.

i. The road provides for two way traffic, including access for fire vehicles in a bushfire event.

ii. The road will be sealed as per LGAT standards. The road will be suitable for use in all weather conditions.

iii. There is no vegetation above the road. The road has a horizontal separation to any potential grassland threat to the south of minimum 30m to the east. There is an additional threat to the south, approximately 30m from the eastern cul-de-sac.

iv. The road has an appropriate load capacity to facilitate fire vehicles in a bushfire event.

v. Passing is achievable given the width of the road (5.5m) and road reserve (14m).

vi. There are no recommended traffic control devices as part of the subdivision.

vii. The cul-de-sac head is level, and on a flat surface. The bushfire threat is on flat land in this part of the adjoining site.

viii. The road is a cul-de-sac road and is within an urban area.

ix. The cul-de-sac has a length of approximately 80m. It is considered there is ample opportunity for vehicles to exit to the north in a bushfire event.

x. Turning area is provided. There are numerous access strips in the end of the proposed road, allowing for a three-point turn if required.

xi. Parking areas at the end of the cul-de-sac will be limited due to the number access strips in this part. No standing signage has been recommended for both the eastern and western end of the cul de sac.

xii. Perimeter access is provided to the east on the crown road reservation, however given the nature of the bushfire vegetation, is not seen as a requirement. The surrounding land to the north, west and generally south has been developed.

xiii. There are no proposed fire trails, the road reserve to the east could provide vehicular access should it be required.

b) The TFS can access the bushfire prone vegetation on the surrounding lots should a bushfire event occur.

c) The application has been referred to TFS for comment who have confirmed they are satisfied with the reduced sized cul-de-sac.

The bushfire threat in this area is assessed as generally low. The lots will be cleared in their entirety to provide for residential development. The entire lot will be treated as a bushfire hazard management area. The development is within an established urban environment. The requirements to provide a cul-de-sac with 12m radius would be out of character with this area, and not considered warranted given the level of threat. The risk is considered low based on the site characteristics and nature of the area.

Performance criteria is achieved.

8. Conclusions and Recommendations

The proposal seeks planning approval for a 15-lot subdivision at 7a William Street, Campbell Town.

All of the lots have demonstrated that a building area can be provided in an area meeting the requirements of BAL 19. Despite this, bushfire fencing has been provided on the eastern and southern sides of the lots to provide a greater usable area for future dwellings to develop. Fire hydrants on the new cul-de-sac road provide sufficient protection, with building envelopes being within 120m of a hydrant. No access requirements are needed due to the hydrants being located on proposed roads.

a) Hazard management areas meeting the requirements of BAL 19 can be achieved for lots 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14. Lots 1-3, and Lot 15 meet the requirements of BAL LOW, being over 50m from any bushfire prone vegetation.

b) Future dwellings on lots 1-15 must maintain Hazard Management Areas and follow recommendations as outlined in the Bushfire Hazard Management Plan and section 5.2 of this report. Maintenance of these hazard management areas is to be in perpetuity.

c) The proposed road must be in compliance with Table C13.1, Element A, outlined in section 5.3 of this report, with the exception of a 12m outer radius turning head. No standing signage is to be provided at both ends of the cul-de-sac.

d) New hydrants are required in accordance with the TasWater supplement to Water Supply code of Australia WAS 03-2011-3.1 MRWA Edition 2:0. Hydrants to have a separation of not more than 60m.

e) All lots are to be treated as a hazard management area in accordance with section 5.2 of this report. Maintenance of all hazard management areas must be in perpetuity.

f) Prior to the sealing of the final plan, solid metal fencing to a height of 2.4m is required along the eastern boundary of lots 10, 11 and 12, and solid fencing to a height of 2.1m is required along the southern boundary of lot 7, 8, 9, and 10, as shown on the Bushfire Hazard Management Plan. Fencing should not be constructed across the eastern boundary of lot 101.

Annexure 1 – Bushfire Hazard Management Plan

Roads

Unless the development standards in the zone require a higher standard, the following apply:

(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 7 meters in width;

Reticulated Water Supply for Fire Fighting.

The following requirements apply:

(a) the building area to be protected must be located within 120m of a fire hydrant; 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.

The following requirements apply:

(a) fire hydrant system must be designed and constructed in accordance with TasWater Supplement to Water Supply Code of Australia WSA 03 – 2011-3.1 MRWA 2nd Edition; and
(b) fire hydrants are not installed in parking areas.

Hazard Management – Vegetation Management

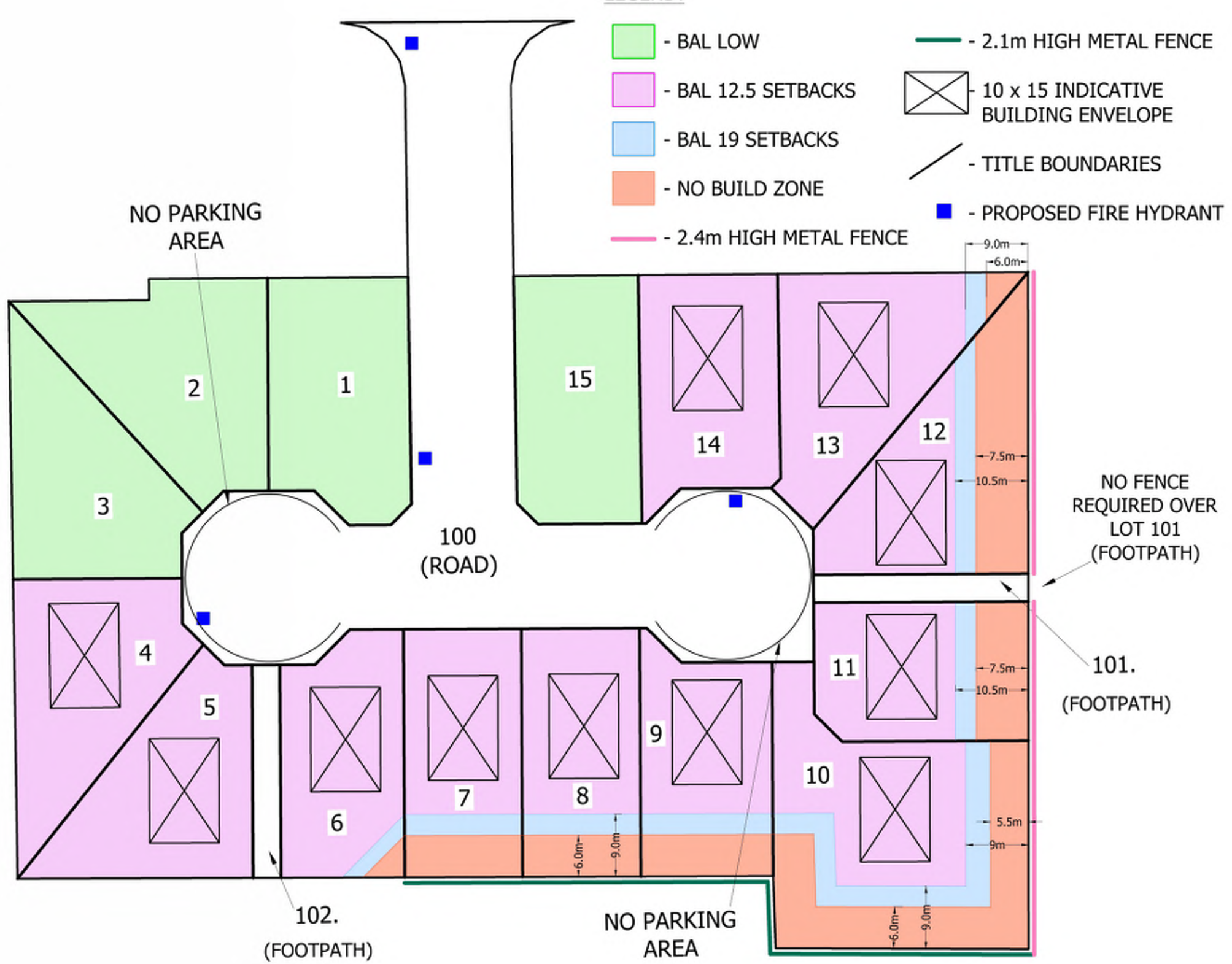
- Lots 1-15 in their entirety are to be treated and maintained as a bushfire hazard management area.
- Vegetation in the hazard management area (as dimensioned and shown) is to managed and maintained in a minimum fuel condition (refer to section 5.2 of Bushfire Hazard Management Report).

Solid Metal Bushfire Fencing

a) Solid metal fencing with a height of 2.4m must be constructed along the eastern boundary of lots 10, 11 and 12. Fencing is to be installed prior to the sealing of a final plan of survey.
b) Solid metal fencing with a height of 2.1m must be constructed along the southern boundary of lots 7, 8, 9 and 10. Fencing is to be installed prior to the sealing of a final plan of survey.

Notes:

1. Refer plans –Woolcott Surveys, proposed 16 Lot Subdivision, dated 31/01/23, version 3, Job No L220916
2. All future works to comply with Director's Determination – Bushfire Hazard Area's (v1.1). Table 1, 2, 3 and 4.
3. Plan to be read in conjunction with Bushfire Hazard Management Report dated 2/04/23



Bushfire Assessment Based on Stamped Plans

James Stewart – BFP: 157, Scope of Work: 1, 2, 3B, 3C.

WOOLCOTT SURVEYS

BUSHFIRE HAZARD MANAGEMENT PLAN
PROPOSED 15 LOT SUBDIVISION
OWNER: GRANGE VISTA PTY LTD
7a WILLIAM STREET, CAMPBELL TOWN, 7210
C.T.43080-4, PID 9240372

N

WOOLCOTT SURVEYS
10 Goodman Court Invermay TAS 7248
PO Box 593 Mowbray Heights TAS 7248
Phone (03) 6332 3760
Fax (03) 6332 3764
Email: office@woolcottsurveys.com.au

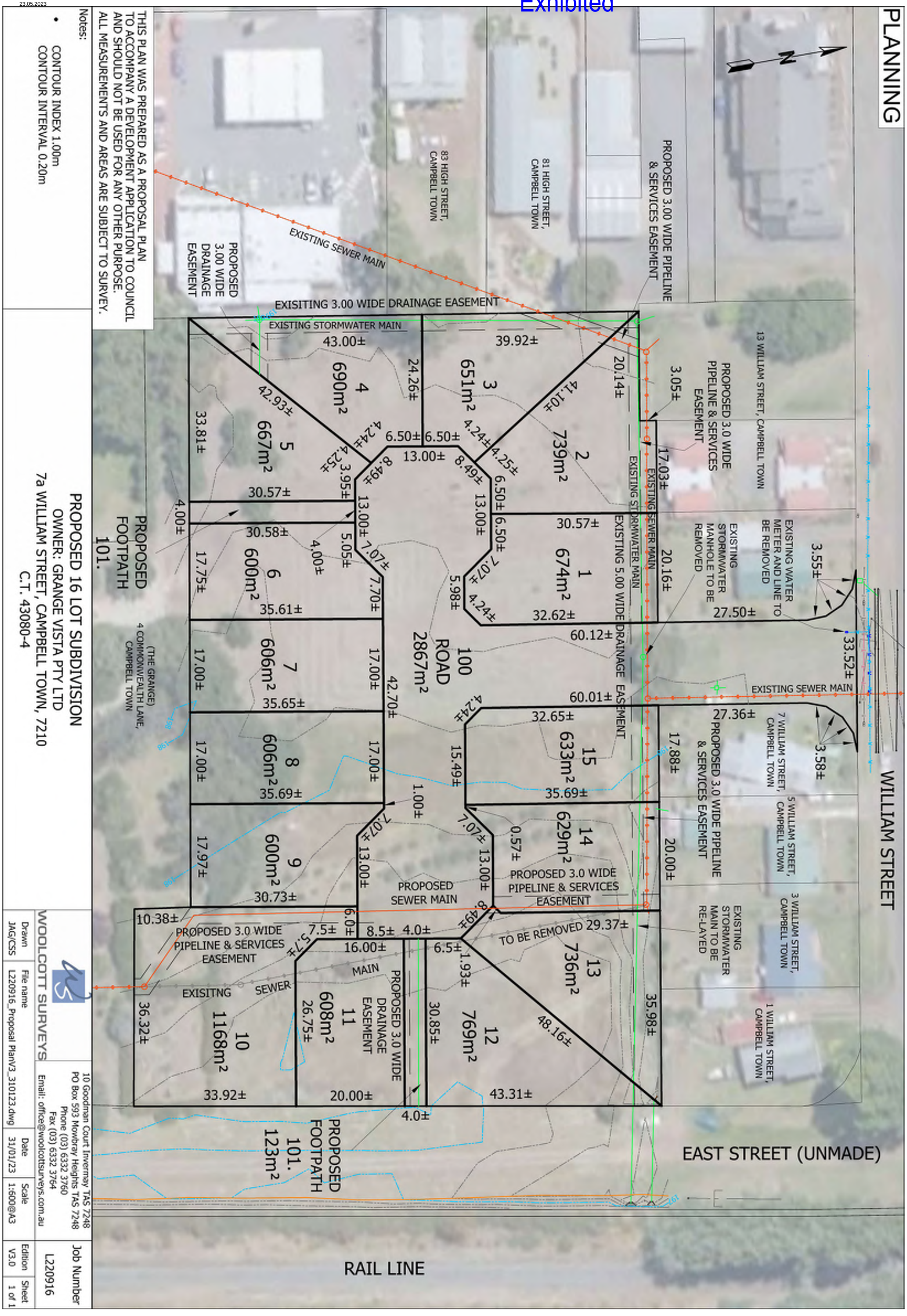
Job Number	Drawn	File name	Date	Scale	Edition	Sheet
L220916	JAG	L220916_BHMP_110423.dwg	11/04/23	1:600@A3	V1.0	1 of 1

Annexure 2 – Subdivision Proposal Plan

Received
23.05.2023

Exhibited

PLANNING



THIS PLAN WAS PREPARED AS A PROPOSAL PLAN TO ACCOMPANY A DEVELOPMENT APPLICATION TO COUNCIL AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE. ALL MEASUREMENTS AND AREAS ARE SUBJECT TO SURVEY.

Notes:

- CONTOUR INDEX 1.00m
  CONTOUR INTERVAL 0.20m

PROPOSED 16 LOT SUBDIVISION
OWNER: GRANGE VISTA PTY LTD
7a WILLIAM STREET, CAMPBELL TOWN, 7210
C.T. 43080-4

WOOLCOTT SURVEYS
10 Goodman Court Invermay TAS 7248
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Drawn	File name	Date	Scale	Edition	Sheet
JAG/CSS	L220916_Proposal PlanV3_310123.dwg	31/01/23	1:600@A3	V3.0	1 of 1

Job Number L220916

Annexure 3 – Planning Certificate

BUSHFIRE-PRONE AREAS CODE

CERTIFICATE[1] 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:	7a William Street, Campbell Town
Certificate of Title / PID:	**CT43080/4, PID9240372**

2. Proposed Use or Development

Description of proposed Use and Development:	15 Lot Subdivision + Road lot + footpath lots x 2
Applicable Planning Scheme:	Tasmanian Planning Scheme – Northern Midlands

3. Documents relied upon

This certificate relates to the following documents:

Title	Author	Date	Version
Bushfire Hazard Report	Woolcott Surveys	02/05/2023	2
Proposed 16 Lot Subdivision	Woolcott Surveys	31/01/2023	3
Bushfire Hazard Management Plan	Woolcott Surveys	11/04/2023	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:

☐	**E1.4 / C13.4 – Use or development exempt from this Code**	
	Compliance test	**Compliance Requirement**
☐	E1.4(a) / C13.4.1(a)	Insufficient increase in risk.

☐	**E1.5.1 / C13.5.1 – Vulnerable Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.1 P1 / C13.5.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.1 A2 / C13.5.1 A2	Emergency management strategy
☐	E1.5.1 A3 / C13.5.1 A2	Bushfire hazard management plan

☐	**E1.5.2 / C13.5.2 – Hazardous Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.2 P1 / C13.5.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.2 A2 / C13.5.2 A2	Emergency management strategy
☐	E1.5.2 A3 / C13.5.2 A3	Bushfire hazard management plan

☒	**E1.6.1 / C13.6.1 Subdivision: Provision of hazard management areas**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.1 P1 / C13.6.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.6.1 A1 (a) / C13.6.1 A1(a)	Insufficient increase in risk.
☒	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all lots
☐	E1.6.1 A1(c) / C13.6.1 A1(c)	Consent for Part 5 Agreement

☒	**E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access**	
	Acceptable Solution	**Compliance Requirement**
☒	E1.6.2 P1 / C13.6.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.*** *Performance criteria addressed for cul-de-sac turning heads.*
☐	E1.6.2 A1 (a) / C13.6.2 A1 (a)	Insufficient increase in risk.
☐	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access complies with relevant Tables

☒	**E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.3 A1 (a) / C13.6.3 A1 (a)	Insufficient increase in risk.
☒	E1.6.3 A1 (b) / C13.6.3 A1 (b)	Reticulated water supply complies with relevant Table
☐	E1.6.3 A1 (c) / C13.6.3 A1 (c)	Water supply consistent with the objective
☐	E1.6.3 A2 (a) / C13.6.3 A2 (a)	Insufficient increase in risk.
☐	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table
☐	E1.6.3 A2 (c) / C13.6.3 A2 (c)	Static water supply consistent with the objective

5. Bushfire Hazard Practitioner

Name:	James Stewart	**Phone No:**	0467 676 721
Postal Address:	PO BOX 593, Mowbray, Tas, 7248	**Email Address:**	james@woolcottsurveys.com.au
Accreditation No:	BFP – 157	**Scope:**	1, 2, 3B, 3C

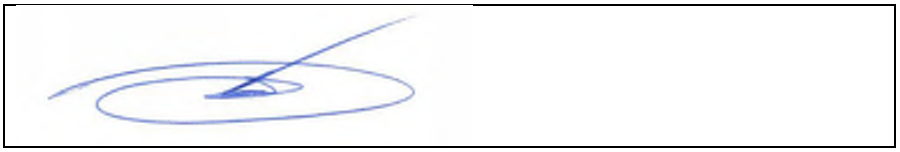
6. Certification

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: James Stewart **Date:** 23/05/2023

Certificate Number: WS-118
(for Practitioner Use only)

Annexure 4 – Bushfire Fencing Advice from Roger Fenwick BFP 162

Roger Fenwick Bush Fire Consultant
PO Box 86B
Kettering Tas 7155

James Stewart
Woolcott Surveys
james@woolcottsurveys.com.au

Dear James,

Performance calculations for proposed subdivision
7a William St, Campbell Town

The first table below shows the limiting combinations of metal fence height and setback (HMA width) for proposed lots adjoining defined unmanaged grassland, to satisfy BAL-19 specifications. A second table shows some BAL-12.5 combinations, and the third table indicates approximately what may be possible as a post-subdivision application to build to BAL-29 specifications.

I'm aware of and have adopted your preference for a 2.4m high fence beside the railway line, and for no more than 2.1m high fences beside the private property to the south, and (if necessary at all) beside the pedestrian footpaths. Those footpaths will be on what will become Council land, and therefore on Council's mowing schedule. As managed land the vegetation on them will be Low Threat, and only the flames in the adjoining unmanaged grass visible through the 4m wide gap in the 2.4m fence on the eastern side will be an issue.

Any fire within the unmanaged grass to the south of Lot 7 will project less than 50% of the radiant heat of a full 100m wide front on to a structure on Lot 6. With a 6m setback on Lot 6, the 100m wide radiant heat load would be 29.53kWm^{-2}, half of which is near enough to 15, safely within the BAL-19 limit. Thus there is no necessity to extend the southern fence beyond the western side of Lot 7.

A fire approaching the 4m wide gap in the fence where the footpath between Lots 11 & 12 is proposed would radiate 8.3kWm^{-2} directly ahead of it at a distance of 7.5m (and slightly less as measured to each side of central). This is 4.83 more than would be experienced with a full-width fence, ie 13.52 + 4.83 = 18.35. This is within the BAL-19 target, and shows that a house on Lot 11 or Lot 12 7.5m from their eastern boundary would meet BAL-19 specifications.

A fire approaching the NE corner of the site from the northeast would project one half of its radiant heat load at and over the 2.4m high metal fence, and one half directly at a structure on Lot 13 visible 'around the corner' of the fence. An HMA 6m in width beside the eastern side of the fence would be 6 x 1.4 = 8.4m in effective width relative to a direct fire approach. Half of the heat received over the fence, plus half of the heat received around the edge of the fence, is 0.5*((21.35-9.24) + 21.35) = 16.73. This is less than the specified 19kWm^{-2} limit, and therefore no additional radiant heat protection is necessary beyond the northern end of Lots 12/13.

roger@bushfire-consultant.com.au 0411 609 906

Roger Fenwick Bush Fire Consultant
PO Box 86B
Kettering Tas 7155

Table 1 BAL-19 setbacks (DtS = 10m)

Setback (m)	Heat flux (no fence)	Heat flux blocked by 2.1m high fence	Net heat flux	Heat flux blocked by 2.4m high fence	Net heat flux
8.4	21.35			9.24	21.11
7.5	23.89			10.37	13.52
7.5, 4m wide	8.3			3.47	+4.83
7	25.55	9.63	15.92	11.12	14.38
6	29.53	11.2	18.33	12.99	16.56
5.5	31.94	12.17	19.79	14.12	17.82

Table 2 BAL-12.5 setbacks (DtS = 14m)

Setback (m)	Heat flux (no fence	Heat flux blocked by 2.1m high fence	Net heat flux	Heat flux blocked by 2.4m high fence	Net heat flux
11	16.18	6.07	10.11		
9	19.29	7.47	11.82		
8.5	21.11	7.92	13.18	9.13	11.98

Table 3 BAL-29 setbacks (DtS = 6m)

Setback (m)	Heat flux (no fence	Heat flux blocked by 2.1m high fence	Net heat flux	Heat flux blocked by 2.4m high fence	Net heat flux
5	34.7	13.33	21.4		
4	41.47	16.23	25.24	19.01	22.46
3	50.23	20.43	29.8	24.26	25.97

In summary, for BAL-19, the proposed subdivision should feature a 2.1m high metal (Colorbond or similar) fence along the southern boundary of lots 6 – 10, and a 2.4m high metal fence along the eastern boundary, apart from opposite the footpath between lots 11 & 12. The building setbacks adjoining unmanaged land to the south should be 6m for lots 6 – 10. Setbacks to the east must be 5.5m for Lot 10, 7.5m for lots 11 & 12., and 6m for Lot 13.

For BAL-12.5, with a 2.1m fence, the setbacks from the southern boundary are 9m. From the eastern boundary, Lots 10 & 13 require 9m setbacks and a 2.4m high fence. Lots 11 &

roger@bushfire-consultant.com.au 0411 609 906

Roger Fenwick Bush Fire Consultant
PO Box 86B
Kettering Tas 7155

12 require a 10.5m setback and a 2.4m high fence to compensate for the additional radiant heat flux through the 4m wide footpath opening.

Yours sincerely,

Roger Fenwick
6 April 2023

roger@bushfire-consultant.com.au 0411 609 906

Annexure 5 – TFS advice re cul-de-sac

From: Bushfire Practitioner <bfp@fire.tas.gov.au>
Sent: Thursday, 27 April 2023 3:00 PM
To: James Stewart <james@woolcottsurveys.com.au>
Cc: Bushfire Practitioner <bfp@fire.tas.gov.au>
Subject: RE: BFP 157 -15 Lot Subdivision, 7a William Street, Campbell Town - Report for Review

Hi James,

In response to section 7, we support the variation to reduce the size of the cul-de-sac turning heads, we don't think that the variation will significantly impact firefighter safety or operations. We note that the report recommends no standing signage in the eastern cul-de-sac and no parking signage in carriageways less than 7m wide. We would also like to see the signage requirements for the cul-de-sac included in section 7 as well.

Let me know if you have any further questions

Regards
Chris

Chris Moore
Planning & Assessment Officer
Bushfire Risk Unit

Tasmania Fire Service

Service | Professionalism | Integrity | Consideration

Northern Region Office | 339 Hobart Road Youngtown Tasmania 7249
Mobile 0418 336 446
bfp@fire.tas.gov.au | www.fire.tas.gov.au

Please note that I work Tuesday-Friday

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5 April 2023

Michelle Schleiger
Planner
Woolcott Surveys
10 Goodman Court
INVERMAY Tasmania 7248

Dear Michelle

Re: 7a William Street, Campbell Town - Railway Noise Assessment Rev1

This noise assessment has been prepared to support a development application for a proposed residential subdivision at 7a William Street, Campbell Town, (Title Reference: 43080/4). It is required as part of the proposed development falls within the 50m attenuation zone of the TasRail South Line.

Planning Scheme Requirements

The site, shown in Figure 1 below, is zoned as "General Residential" under the *Tasmanian Planning Scheme – Northern Midlands*, with one small section of "Open Space". Due to its location in the attenuation area, the development must meet the performance criteria P1 of the *Road and Railway Assets Code C3.7.1 Subdivision for sensitive uses within a road or railway attenuation zone*, reproduced below:

P1
A lot, or a lot proposed in a plan of subdivision, intended for sensitive uses within a road or railway attenuation area, must be sited, designed or screened to minimise the effects of noise, vibration, light and air emissions from the existing or future major road or rail network, having regard to:

(a) the topography of the site;
(b) any buffers created by natural or other features;
(c) the location of existing or proposed buildings on the site;
(d) the frequency of use of the rail network;
(e) the speed limit and traffic volume of the road;
(f) any noise, vibration, light and air emissions from the rail network or road;
(g) the nature of the road;
(h) the nature of the intended uses;
(i) the layout of the subdivision;
(j) the need for the subdivision;
(k) any traffic impact assessment;
(l) any mitigating measures proposed;
(m) any recommendations from a suitably qualified person for mitigation of noise; and
(n) any advice received from the rail or road authority.

Table C3.2 of the Code defines acceptable external noise levels for habitable buildings within a railway attenuation area to be a 24 hour L_{eq} noise level of 65 dB(A) and a L_{max} noise level of 87 dB(A) assessed as a single event maximum sound pressure level". The L_{eq}, relates to the equivalent continuous or "logarithmically averaged" noise level over a specified time period (in this case 24hours) and the L_{max} level relates to the maximum noise level recorded.

On-Site Noise Logging

Unattended noise logging was conducted between the 9th and 20th of March 2023, at a location on the eastern fence line of the site, approximately 31m from the centreline of the railway, using a Rion NL-42 noise logger, setup and operated in accordance with the *DEPHA Noise Measurement Procedures Manual, 2nd edition, 2008*.

Normally 6 trains pass the site, every day in each direction, between about 8pm and 5am, Monday to Friday. During the measurement period $L_{eq,24hr}$ values ranged between 45.2 and 54.2dB(A). This meets the $L_{eq,24hr}$ requirement of the Code by a wide margin.

L_{max} noise peaks at times when trains might be expected ranged between around 80 dB(A) and a maximum recorded L_{max} of 90.8dB(A). This exceeds the Code L_{max} limit of 87 dB(A) by about 4 dB(A).

Recommended Noise Mitigation Measures

The L_{max} noise level on the site can be reduced sufficiently to meet the code limit if a 2.4 metre solid fence is constructed along the full length of the eastern boundary facing the railway, with a break for a footpath between Lots 11 and 12. This could be built from heavy duty Colorbond steel, timber or masonry, but must be free from of any gaps or cracks, including between the fencing panels and the ground. All joints must be well sealed.

Ground Vibration

Levels of ground vibration from trains operating on the Tasmanian rail network are normally relatively low and diminish quickly with distance from the track. Vibration levels are unlikely to be sufficient to adversely affect residential amenity on the proposed subdivision site.

Conclusions

On this basis it may be concluded that residents of the proposed subdivision will not be adversely impacted by noise and vibration from the railway and the requirements of Clause C3.7.1 of the planning scheme will be met.

Please do not hesitate to get in contact if you have any further queries.

Yours sincerely,

Alexander Seen
Graduate Mechanical Engineer

Douglas Ford
Principal Mechanical Engineer/Noise Specialist

Received
10/07/2023

Exhibited

Figure 1 - Aerial image of site (Blue boundary) and surrounding area (base image from theList).

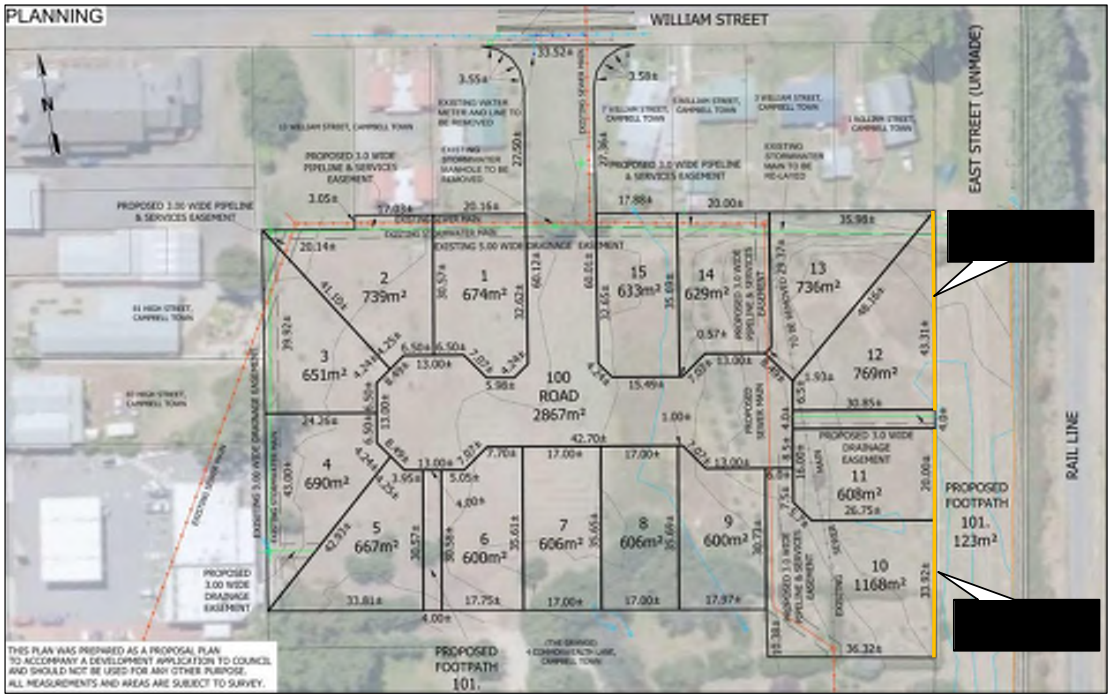


Figure 2 – Subdivision Plan, extracted from project drawings.

Rosemary Jones

From: Council Referrals <Council.Referrals@tasnetworks.com.au>
Sent: Friday, 16 June 2023 3:52 PM
To: NMC Planning
Subject: CN23-117572: referral of development application 7A William St Campbell Town

Follow Up Flag: Follow up
Flag Status: Flagged

Good AŰernoon

Thank you for your email on 06/06/2023 referring the abovementioned development.

Based on the information provided, the development is not likely to adversely affect TasNetworks' operations.

As with any subdivision, consideration should be given to the electrical infrastructure works that will be required to ensure a supply of electricity can be provided to each lot.

To understand what these requirements may entail, it is recommended you advise the proponent to contact TasNetworks on 1300 137 008 or our Subdivision team at subdivisionsteam@tasnetworks.com.au at their earliest convenience.

Kind Regards

Georgie

Georgie Coleman

Customer Relationship Specialist

Tasmanian Networks Pty Ltd

ABN 24 167 357 299

P 03 6324 7583

1 – 7 Maria Street, Lenah Valley 7008

PO Box 606, Moonah TAS 7009

www.tasnetworks.com.au

@TasNetworks

From: NMC Planning <planning@nmc.tas.gov.au>
Sent: Tuesday, 6 June 2023 11:45 AM

To: Council Referrals <Council.Referrals@tasnetworks.com.au>
Subject: FW: referral of development application 7A William St Campbell Town

Good morning,

Notice of Application to Relevant Entity (TasNetworks) under s. 44L of the Electricity Supply Industry Act 1995

Please be advised that the a? ached application has been received.

Your consideration and response under s44M91) is requested.

Kind regards,

Rosemary Jones

Community & Development | Northern Midlands Council
Council Office, 13 Smith Street (PO Box 156), Longford Tasmania 7301
T: (03) 6397 7303 | F: (03) 6397 7331
E: council@n,mc.tas.gov.au | W: www.northernmidlands.tas.gov.au
[northernmidlands.tas.gov.au]

Rosemary Jones

From: Jennifer Jarvis <Jennifer.Jarvis@tasrail.com.au>
Sent: Saturday, 17 June 2023 3:00 PM
To: NMC Planning
Subject: Attention Planning Department
Attachments: RE: Subdivision Proposal - 7A WIlliam Street Campbell Town

Follow Up Flag: Follow up
Flag Status: Completed

Your Reference PLN-23-0085 – 7A William Street Campbell Town – 18-Lot Subdivision (15 Residential 1 Road Lot 2 Footway Lots)

Thank you for notifying TasRail of the above application.

TasRail has reviewed the available documentation and through this email, TasRail advises that it objects to the application in its current form.

TasRail had already provided advice to Woolcott Surveys (acting obo the client) and to Council's Jonathan Galbraith that TasRail has concerns with this proposal in terms of stormwater treatment/discharge/inflows through the corridor. The advice made it clear that TasRail will require a hydrology assessment and forecast of stormwater discharge/inflows as well as any assumptions made about the capacity of the existing stormwater infrastructure. TasRail notes this information has not been provided and the submitted plans still shows stormwater being directed to the rail corridor. This is not acceptable to TasRail noting that this area is already subject to flooding and periodic inundation of the rail. It is TasRail's view that the existing infrastructure is already below capacity and therefore any additional inflows will service to heighten the risk to rail operations, infrastructure and assets.

TasRail had also advised both Woolcott Surveys and Council that if the requested information was not provided to TasRail prior to the DA being submitted, then TasRail would be requesting the information as an RFI through the planning process. I attach a copy of the email between TasRail and Council. There has been no communication from Woolcott Surveys since the initial discussion (prior to the Crown Landowner Consent (CLOC) being issued).

It should also be acknowledged that this application was subject to a CLOC which also noted that TasRail does not permit the discharge of stormwater or other run-off into State Rail Network land and/or the use of the rail drainage system for inflows. The CLOC also advised that access to State Rail Network land for any reason is not permitted without a TasRail Permit issued by property@tasrail.com.au (conditions apply).

In confirming TasRail's objection to the proposal in its current form, TasRail is also formalising an RFI for the requested information in relation to stormwater.

Kind regards

Jennifer Jarvis

TASRAIL 150 YEARS OF RAIL IN TASMANIA

Group Manager Property and Compliance | Property
Phone: 03 6335 2603 | Mobile: 0428 139 238
11 Techno Park Drive, Kings Meadows, Tasmania, 7249
Jennifer.Jarvis@tasrail.com.au

'Tasmania's trusted provider of safe and dependable rail logistics solutions'

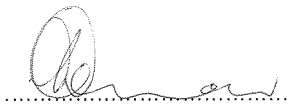
NORTHERN MIDLANDS COUNCIL

REPORT FROM:	**HERITAGE ADVISER, DAVID DENMAN**
DATE:	**4 August 2023**
REF NO:	**PLN-23-0085; 305100.155**
SITE:	**7A William Street & William St & East St, Campbell Town**
PROPOSAL:	**15 residential lot subdivision incl. filling of land, & 1 road lot & 2 footway lots, 2.4m high fence along East St boundary & infrastructure works in William St and East St**
APPLICANT:	**Woolcott Surveys**
REASON FOR REFERRAL:	**Local Historic Heritage Code**

Do you have any objections to the proposal: **No**

The layout of the proposed streets and lots is considered acceptable within the context of the site and will therefore have no adverse impact on the historic cultural significance of the precinct.

Email referral as word document to David Denman – david@denman.studio
Attach public exhibition documents
Subject line: Heritage referral PLN-23-0085 - 7A William Street & William St & East St, Campbell Town



David Denman (Heritage Adviser)

Date: 11/08/2023

Assessment against C6.0 (Local Historic Heritage Code)

C6.1 Code Purpose

The purpose of the Local Historic Heritage Code is:

C6.1.1 To recognise and protect:

a) the local historic heritage significance of local places, precincts, landscapes and areas of archaeological potential; and
b) significant trees.

C6.1.2 This code does not apply to Aboriginal heritage values.

C6.2 Application of this Code

C6.2.1 This code applies to:

a) development on land within any of the following, as defined in this code:
   i) a local heritage place;
   ii) a local heritage precinct;
   iii) a local historic landscape precinct; and
   iv) for excavation only, a place or precinct of archaeological potential; and
b) the lopping, pruning, removal or destruction of a significant tree as defined in this code.

C6.2.2 If a site is listed as a local heritage place and also within a local heritage precinct or local historic landscape precinct, it is only necessary to demonstrate compliance with the standards for the local heritage place unless demolition, buildings and works are proposed for an area of the site outside the identified specific extent of the local heritage place.

C6.2.3 This code does not apply to a registered place entered on the Tasmanian Heritage Register, unless for the lopping, pruning, removal or destruction of a significant tree as defined in this code.

C6.2.4 This code does not apply to use.

Comment: The site is within a local heritage precinct

C6.4 Development Exempt from this Code

C6.4.1 Development described in Table C6.4.1 is exempt from this code provided it meets the corresponding qualifications.

Table C6.4.1 Exempt Development

Exempt Development	**Qualifications**
Development within a local heritage place	(a) temporary structural stabilisation works as certified by a structural engineer; (b) permanent structural stabilisation works considered by a suitably qualified person to maintain the local historic heritage significance of the place; (c) building works, alterations and modifications required for compliance with fire regulation under the *Building Code of Australia*, which are not visible externally upon completion from any road or public open space adjoining the site; or (d) the pruning of a tree to improve its health or appearance provided its normal growth habit is not retarded
Development within a local heritage place, local	(a) a maximum of 1 mast for telecommunications and a single flagpole, provided each is not more than 6m in height and is not attached to any building specifically part of a

heritage precinct or local historic landscape precinct	local heritage place listed in the relevant Local Provisions Schedule; (b) the construction or demolition of: (i) side and rear boundary fences: a. not adjoining a road or public reserve; and b. not more than a total height of 2.1m above existing ground level, except where they are within a garden or grounds that is specifically part of a local heritage place listed in the relevant Local Provisions Schedule; or (ii) fencing of agricultural land or for protection of wetlands and watercourses; (c) the planting, clearing or modification of vegetation on pasture or cropping land, other than for plantation forestry on prime agricultural land; (d) electricity, optic fibre and telecommunications cables, water, sewerage and drainage connections and gas lines to individual buildings; (e) maintenance and repairs that do not involve removal, replacement or concealment of any external building fabric; (f) repainting or re-rendering of an exterior surface that has been previously painted or rendered, in a colour similar to the existing; (g) solar collector panels and photovoltaic cells aligned with the plane of a roof and located on a roof plane not visible from any road or public open space adjoining the site; (h) one satellite dish not more than 2m in diameter, and if on a local heritage place not visible from any road or public open space adjoining the site; or (i) minor upgrade by, or on behalf, of a State authority or a council, of infrastructure such as roads, rail lines, footpaths, cycle paths, drains, sewers, power lines and pipelines including: (i) minor widening or narrowing of existing carriageways or making, placing or upgrading kerbs, gutters, footpaths, roadsides or traffic control devices; and (ii) road markings, street lighting and landscaping, except where any of those elements are specifically part of a local heritage place listed in the relevant Local Provisions Schedule.
Development involving a place or precinct of archaeological potential	(a) development not involving ground disturbance; (b) works involving excavation within an area that has been assessed under a previous development application and the archaeological potential was realised when that permit was acted upon or the site was found not to be of archaeological sensitivity in that process; (c) minor excavations where a suitably qualified person has prepared an archaeological

	impact assessment and determined that there is no chance of disturbance to significant archaeological values; (d) removal of non-significant deposits by a suitably qualified person to test, confirm or refine an archaeological assessment and temporarily expose underlying deposits without disturbing them; (e) excavation of land to a depth of not more than 1m on a site provided it is within an existing building that is not listed as a local heritage place; or (f) excavation of land to a depth of not more than 0.3m and not more than 20m^2 in area on a site provided it is for the purposes of minor building works and structures.
Involving development to significant trees	The pruning of a tree to improve its health or appearance provided its normal growth habit is not retarded.
signs	All signs, excluding any associated excavation works on a place or precinct of archaeological potential, not exempt from this code[3].
Comment **The development does not qualify for an exemption.**	

C6.5 Use Standards

C6.5.1 There are no Use Standards in this code.

C6.6 Development Standards for Local Heritage Places

C6.6.1 Demolition

Objective:	That the demolition or removal of buildings do not cause an unacceptable impact on the local historic heritage significance of local heritage places.

Acceptable Solutions	**Performance Criteria**
A1 No Acceptable Solution.	**P1** Demolition or removal of buildings on a local heritage place must not cause an unacceptable impact on the local historic heritage significance of the place, having regard to: (a) the physical condition of the local heritage place; (b) the extent and rate of deterioration of the building or structure; (c) the safety of the building or structure; the streetscape or setting in which the building or structure is located; (e) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule,

	the historic heritage values as identified in a report prepared by a suitably qualified person; (f) any options to reduce or mitigate deterioration; (g) whether demolition is a reasonable option to secure the long-term future of a building or structure; and (d) any economic considerations.
Comment: N/a	

C6.6.2 Site coverage

Objective:	That site coverage is compatible with the local historic heritage significance of local heritage places.
Acceptable Solutions	**Performance Criteria**
A1 No Acceptable Solution.	**P1** The site coverage must be compatible with the local historic heritage significance of a local heritage place, having regard to: (a) the topography of the site; and (b) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report prepared by a suitably qualified person.
Comment: N/a	

C6.6.3 Height and bulk of buildings

Objective:	That the height and bulk of buildings are compatible with the local historic heritage significance of local heritage places.
Acceptable Solutions	**Performance Criteria**
A1 No Acceptable Solution.	**P1** The height and bulk of buildings must be compatible with the local historic heritage significance of a local heritage place, having regard to: (a) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report

	prepared by a suitably qualified person; (b) the character and appearance of the existing building or place; (c) the height and bulk of other buildings in the surrounding area; and (d) the setting of the local heritage place.
Comment: N/a	

C6.6.4 Siting of buildings and structures

Objective:	That the siting of buildings is compatible with the local historic heritage significance of local heritage places.

Acceptable Solutions	**Performance Criteria**
A1 No Acceptable Solution.	**P1** The front, side and rear setbacks of a building must be compatible with the local historic heritage significance of the place, having regard to: (a) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report prepared by a suitably qualified person; (b) the topography of the site; (c) the size, shape, and orientation of the lot; and (d) the setbacks of other buildings in the surrounding area.
Comment: N/a	

C6.6.5 Fences

Objective:	That fences are compatible with the local historic heritage significance of local heritage places.

Acceptable Solutions	Performance Criteria
A1 New fences and gates on local heritage places must be designed and constructed to match existing original fences on the site.	**P1** New fences and gates must be compatible with the local historic heritage significance of a local heritage place, having regard to: (a) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report prepared by a suitably qualified person; (b) the architectural style of the buildings on the site; (c) the dominant fencing style in the setting; (d) the original or previous fences on the site; and (e) the proposed height and location of the fence
Comment: N/a	

C6.6.6 Roof form and materials

Objective:	That roof form and materials are compatible with the local historic heritage significance of local heritage places.

Acceptable Solutions	Performance Criteria
A1 Replacement roofs on local heritage places which will be visible from any road or public open space adjoining the site, must be of a form and material to match the existing roof being replaced.	**P1** Roof form and materials must be compatible with the local historic heritage significance of a local heritage place, having regard to: (a) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report prepared by a suitably qualified person; (b) the design, period of construction and materials of the building on the site that the roof directly relates to; (c) the dominant roofing style and materials in the setting; and (d) the streetscape.

Comment: N/a

C6.6.7 Building alterations, excluding roof form and materials

Objective:	That building alterations, excluding roof form and materials, are compatible with the local historic heritage significance of local heritage places.

Acceptable Solutions	**Performance Criteria**
A1 No Acceptable Solution.	**P1** Building alterations, excluding roof form and materials, of an existing building that is a local heritage place must be compatible with and not detract from the local historic heritage significance of the place, having regard to: (a) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report prepared by a suitably qualified person; (b) the design, period of construction and materials of the building on the site that the building alterations most directly relate to; (c) the dominant external building materials in the setting; and (d) the streetscape.
Comment: N/a	

C6.6.8 Outbuildings and structures

Objective:	That the siting of outbuildings and structures are compatible with the local historic heritage significance of local heritage places.

Acceptable Solutions	**Performance Criteria**
A1 Outbuildings and structures on local heritage places must: (a) not be located in the front setback; (b) not be visible from any road or public open space adjoining the site; (c) not have a side that is longer than 3m; (d) have a gross floor area less than 9m^2; (e) have a combined total area of all outbuildings on	**P1** Outbuildings and structures must be compatible with the local historic heritage significance of a local heritage place, having regard to: (a) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report prepared by a suitably qualified person; (b) the bulk, form and size of buildings on the site;

the site of not more than 20m^2; (f) have a maximum height less than 2.4m above existing ground level; (g) not have a maximum change of level as a result of cut or fill of more than 1m; and (h) not encroach on any service easement or be located within 1m of any underground service.	(c) the bulk, form and size of the proposed outbuilding or structure; (d) the external materials, finishes and decoration of the outbuilding or structure; and (e) the visibility of the outbuilding or structure from any road or public open space adjoining the site.
Comment: N/a	

C6.6.9 Driveways and parking for non-residential purposes

Objective:	That driveways and parking for non-residential purposes are compatible with the local historic heritage significance of local heritage places.

Acceptable Solutions	**Performance Criteria**
A1 Parking areas for non-residential purposes on local heritage places must be located behind the building line of buildings located or proposed on a site.	**P1** Driveways and parking areas for non-residential purposes must be compatible with the local historic heritage significance of a local heritage place, having regard to: (a) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report prepared by a suitably qualified person; (b) the loss of any building fabric; (c) the removal of gardens or vegetated areas; (d) parking availability in the surrounding area; (e) vehicle and pedestrian traffic safety; and (f) the streetscape.
Comment: N/a	

C6.6.10 Removal, destruction or lopping of trees, or removal of vegetation, that is specifically part of a local heritage place

Objective:	That the removal, destruction or lopping of trees or the removal of vegetation that is specifically part of a local heritage place does not impact on the local historic heritage significance of the place.

Acceptable Solutions	Performance Criteria
A1 No Acceptable Solution.	**P1** The removal, destruction or lopping of trees or the removal of vegetation which is specifically part of a local heritage place listed in the relevant Local Provisions Schedule, must not cause an unreasonable impact on the local historic heritage significance of a local heritage place, having regard to: (a) the historic heritage values of the local heritage place as identified in the relevant Local Provisions Schedule, or if there are no historic heritage values identified in the relevant Local Provisions Schedule, the historic heritage values as identified in a report prepared by a suitably qualified person; (b) the age and condition of the tree or vegetation; (c) the size and form of the tree or vegetation; (d) the importance of the tree or vegetation to the local historic heritage significance of a local heritage place; and (e) any advice by a suitably qualified person.
Comment: N/a	

C6.7 Development Standards for Local Heritage Precincts and Local Historic Landscape Precincts

C6.7.1 Demolition within a local heritage precinct

Objective:	That demolition within a local heritage precinct does not have an unacceptable impact on the local historic heritage significance of the precinct.

Acceptable Solutions	Performance Criteria
A1 Within a local heritage precinct, demolition of a building, works or fabric, including trees, fences, walls and outbuildings must: (a) not be on a local heritage place; (b) not be visible from any road or public open space; and (c) not involve a value, feature or characteristic	**P1** Within a local heritage precinct, demolition of a building, works or fabric, including trees, fences, walls and outbuildings, must not cause an unacceptable impact on the local historic heritage significance of the local heritage precinct as identified in the relevant Local Provisions Schedule, having regard to: (a) the physical condition of the building, works, structure or trees;

specifically part of a precinct listed in the relevant Local Provisions Schedule.	(b) the extent and rate of deterioration of the building, works, structure or trees; (c) the safety of the building, works, structure or trees; (d) the streetscape in which the building, works, structure or trees is located; (e) the special or unique contribution that the building, works, structure or trees makes to the streetscape or townscape values of the local heritage precinct identified in the relevant Local Provisions Schedule; (f) any options to reduce or mitigate deterioration; (g) whether demolition is a reasonable option to secure the long-term future of a building. works or structure; and (h) any economic considerations.
Comment: N/a	

C6.7.2 Demolition within a local historic landscape precinct

Objective:	That demolition within a local historic landscape precinct does not have an unacceptable impact on the local historic heritage significance of the precinct.

Acceptable Solutions	**Performance Criteria**
A1 Within a local historic landscape precinct, demolition of a building, works, fabric or landscape elements including trees, fences, walls and outbuildings must: (a) not be on a local heritage place; (b) not be visible from any road or public open space; and (c) not involve a value, feature or characteristic specifically part of a precinct listed in the relevant Local Provisions Schedule.	**P1** Within a local historic landscape precinct, demolition of a building, works, fabric or landscape elements including trees, fences, walls and outbuildings, must not cause an unacceptable impact on the local historic heritage significance of the local historic landscape precinct as identified in the relevant Local Provisions Schedule, having regard to: (a) the physical condition of the building, works, structure or trees; (b) the extent and rate of deterioration of the building, works, structure or trees; (c) the safety of the building, works, structure or trees;

	(d) the special or unique contribution that the building, works, structure or trees makes to the landscape values of the local historic landscape precinct identified in the relevant Local Provisions Schedule; (e) any options to reduce or mitigate deterioration; (f) whether demolition is a reasonable option to secure the long-term future of a building, works or structure; and (g) any economic considerations.
Comment: N/a	

C6.7.3 Buildings and works, excluding demolition

Objective:	That development within a local heritage precinct or a local historic landscape precinct is sympathetic to the character of that particular precinct.

Acceptable Solutions	**Performance Criteria**
A1 Within a local heritage precinct or local historic landscape precinct, building and works, excluding demolition, must: (a) not be on a local heritage place; (b) not be visible from any road or public open space; and (c) not involve a value, feature or characteristic specifically part of a local heritage precinct or local historic landscape precinct listed in the relevant Local Provisions Schedule.	**P1.1** Within a local heritage precinct, design and siting of buildings and works, excluding demolition, must be compatible with the local heritage precinct, except if a local heritage place of an architectural style different from that characterising the precinct, having regard to: (a) the streetscape or townscape values identified in the local historic heritage significance of the local heritage precinct, as identified in the relevant Local Provisions Schedule; (b) the character and appearance of the surrounding area; (c) the height and bulk of other buildings in the surrounding area; (d) the setbacks of other buildings in the surrounding area; and (e) any relevant design criteria or conservation policies for the local heritage precinct, as identified in the relevant Local Provisions Schedule. **P1.2**