

**Bushfire Risk Assessment &
BAL Assessment
453 Midland Highway, Huntly**



February 2021

Bushfire Risk Assessment and BAL Assessment – 453 Midland Highway, Huntly

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Report by Julian Drummond
Mapping by Julian Drummond

Cover Image: Eastern boundary of the site viewed from the Midland Highway.

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1. INTRODUCTION

Practical Ecology was commissioned by Conceptz Town Planners on behalf of Ample Investments to provide bushfire assessments for the proposed subdivision at 453 Midland Highway, Huntly. It is proposed that the site be subdivided into 72 residential lots with internal roads and a drainage reserve (basin).

1.1 Subject site

The site consists of an irregular rectangle containing multiple parcels of land and with an easement running through the south-west corner. Map 1 provides an overview of the subject site.

This easement contains an irrigation channel which continues along the western boundary of the site. The site is approximately 17.7 ha and contains pasture and some scattered agricultural structures.

The site is predominantly Low-Density Residential Zone (LDRZ) with some Farming Zone (FZ) along the western boundary. It is also subject to the following overlays:

- Development Plan Overlay – Schedule 4 (DPO4)
- Land Subject to Inundation Overlay – Schedule 1 (LSIO1)
- Special Building Overlay – Schedule 2 (SBO2)

1.2 Application requirements

While the site is not within *Clause 44.06 Bushfire Management Overlay (BMO)*, *Clause 13.02 Bushfire* requires all subdivisions greater than 10 lots within Bushfire Prone Areas to have bushfire risk considered when assessing planning applications. *Clause 53.02 Planning for Bushfire* provides requirements to be met for applications under the BMO which, while not being required for this site, provide an excellent benchmark for bushfire safety. These requirements will therefore be submitted as recommendations as an assessment of bushfire risk.

Applications under the BMO require an assessment with the components below. These assessments are considered to be a very comprehensive assessment of bushfire risk and will therefore be used for this site.

- A **bushfire hazard site assessment** including a plan that describes the bushfire hazard within 150 metres of the proposed development. The description of the hazard must be prepared in accordance with Sections 2.2.3 to 2.2.5 of AS3959:2018 Construction of buildings in bushfire prone areas (Standards Australia) excluding paragraph (a) of section 2.2.3.2. Photographs or other techniques may be used to assist in describing the bushfire hazard.

- A **bushfire hazard landscape assessment** including a plan that describes the bushfire hazard of the general locality more than 150 metres from the site. Photographs or other techniques may be used to assist in describing the bushfire hazard. This requirement does not apply to a dwelling that includes all of the approved measures specified in Clause 53.02-1.
- A **bushfire risk assessment** describing how the proposed development responds to the requirements in this clause. If the application recommends an alternative measure, the assessment must explain how the alternative measure meets the relevant objective. A Bushfire Attack Level assessment suitable for the subsequent building permit will also be provided within this section.

Clause 53.02 details the objectives, approved measures, alternative measures and decision guidelines and is divided into three sections (Clause 53.02-3, 4 and 5). Clause 53.02-3 applies to an application to construct a single dwelling or construct or carry out works associated with a single dwelling if all of the following requirements are met:

- The land is zoned Neighbourhood Residential Zone, General Residential Zone, Residential Growth Zone, Urban Growth Zone, Low Density Residential Zone, Township Zone or Rural Living Zone.
- There is only one dwelling on the lot.
- The application meets all of the approved measures contained in Clause 53.02-1.

Clause 53.02-4 applies to all other applications and Clause 53.02-5 contains the tables with site specific requirements (to be determined through site assessment and evaluation of Clause 53.02-1 or 2).

Relevance to Proposal

If this site were within the BMO, the subdivision would require an assessment under Clause 53.02-4 with subsequent requirements within this section in regard to subdivision applications. These sections will be applied to the site as a benchmark for bushfire safety and recommendations based on these requirements will be made. As this site is not within the BMO, a Bushfire Management Plan is not required.

Settlement planning under Clause 13.02 requires all lots to be able to provide dwellings of BAL-12.5 as per *Australian Standards 3959-2018 Building in Bushfire Prone Areas* (AS3959-2018) (Standards Australia 2018). This will be confirmed with the final layout of the proposed subdivision and a BAL Assessment will be performed as per AS3959-2018 for the subsequent building permits.

In addition, as the site is within a Bushfire Prone Area, the bushfire hazard site assessment will only extend 100m from the site as opposed to 150m as this additional 50m is only required under the BMO and not AS3959-2018.

1.3 Executive summary

A summary of the Approved and Alternative Measures of Clause 53.02, including those which apply to the site, and those which are met by this proposal is presented in Table 1.

The site is a managed paddock containing a dwelling and scattered agricultural infrastructure. The Midland Highway runs along the eastern boundary and Buckleys Lane and Sargeants Road run along the northern and southern boundaries, respectively. The site and the surrounding areas are completely flat and classified vegetation includes Grassland covering the site, on the adjacent property to the north-west, opposite the Midland Highway; opposite Sargeants Road, Woodland in a few small patches to the south; and Shrubland in a very small patch to the south-east. The remaining areas along the road reserves, on the adjacent properties to the south-west and opposite the Midland Highway and Buckleys Lane is managed and considered Low Threat.

The wider landscape is also on level terrain and consists of farmland to the north, denser vegetation within the Greater Bendigo National Park to the east and west and denser urban areas within the City of Bendigo to the south. There have been a few small scattered bushfires in the wider landscape but most burns in this area have been planned. Bushfire can potentially approach from the north-west and south-west through existing paddocks but considering the Midland Highway is directly adjacent and provides immediate access to refuge; this is considered a Type 2 Landscape as per Planning Practice Note 65.

The requirements of Clause 53.02 have been employed as recommendations and as measures of bushfire safety. Approved Measure 2.1 and 2.2 are employed through Approved Measure 5.2 and Approved Measure 2.1 easily met considering the low risk from the surrounding landscape (mostly managed paddocks with significant separation from larger patches of vegetation). Approved Measure 2.2 can be met considering the proposed internal road network, the presence of three existing road reserves along the northern, eastern, and southern boundaries and the appropriate setbacks where applicable.

Approved Measure 5.2 provides the requirement for defensible space and BAL construction standards as per AS3959-2018. Assuming the entire site will be managed as defensible space; BAL-12.5 can be obtained for all lots as per Clause 13.02 as long as setbacks are provided for twelve of the proposed lots (Lots 116, 213-216, 309-310, 312, 314-315, and 320-321). A full BAL assessment for the property has been provided (see Section 4.6.1). It should also be noted that each of the proposed residential lots are within General Residential Zone.

Approved Measure 4.1 is also incorporated into Approved Measure 5.2 to provide the requirements for water supplies and access. The size of each lot would require 10,000L static water supplies under the Bushfire Management Overlay but under these circumstances and with hydrants available (to be installed as part of this proposal); 5,000L is recommended. The size of the lots also indicates that driveways will be greater than 30m in length but are unlikely to be greater than 100m.

Perimeter roads are present along the northern, eastern, and southern boundaries which is considered sufficient considering the low risk to the site and enough to meet Approved Measure 5.4. Landscaping within the proposed road reserves will be managed by the City of Greater Bendigo and will be sufficient to meet Approved Measure 5.3.

Overall, this proposal meets the requirements of Clause 53.02 enough to attain approval if it were within the Bushfire Management Overlay so this assessment should be sufficient response to bushfire at the planning level as required under Clause 13.02.

Table 1. Summary of Approved/Alternative Measures to Clause 53.02

Approved/Alternative Measure	Relevant to proposal?		Met by proposal?		Further comments
AM 1.1	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Requirements of Clause 52.03-4 to be met
AM 1.2	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Requirements of Clause 52.03-4 to be met
AM 1.3	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Requirements of Clause 52.03-4 to be met
AM 2.1	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Applied under AM 5.2
AM 2.2	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Applied under AM 5.2
AM 2.3	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Not required for a subdivision application
AM 3.1	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Not required for a subdivision application
AM 3.2	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Not required for a subdivision application
AltM 3.3	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Not required for a subdivision application
AltM 3.4	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Not required for a subdivision application
AltM 3.5	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Not required for a subdivision application
AltM 3.6	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Not required for a subdivision application
AM 4.1	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Applied under AM 5.2
AM 4.2	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		AM 4.1 applies
AM 5.1	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		AM 5.2 applies
AM 5.2	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
AM 5.3	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
AM 5.4	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
AltM 5.5	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A		Not required

2. BUSHFIRE HAZARD SITE ASSESSMENT

The bushfire hazard site assessment documents the bushfire hazard on and near the site. Map 1 provides an overview of the subject site and Map 3 includes the land within 100 metres of site as per AS3959–2018.

2.1 Site shape, dimensions, and size

The shape of the site is:	Irregular rectangle
The dimensions of the site are:	Approximately 355m x 855m
The site has a total area of:	Approximately 17.7ha

2.2 Planning controls

The zoning of the site is:	Low Density Residential Zone (LDRZ) & Farming Zone (FZ)
The planning scheme overlays that apply to the site are:	<ul style="list-style-type: none"> • Development Plan Overlay – Schedule 4 (DPO4) • Land Subject to Inundation Overlay – Schedule 1 (LSIO1) • Special Building Overlay – Schedule 2 (SBO2)

2.3 Existing use and development on the site

The current use of the site	Residential and agricultural
The buildings or works located on the site are:	<p>The site currently consists of several agricultural paddocks containing pasture and some livestock with all paddocks and site boundaries currently fenced. There is an existing access track along the western boundary accessing Sargeants Road south of the site.</p> <p>There are three dwellings on/near the site with two halfway down the western boundary and one along the southern boundary. There are some scattered sheds and agricultural structures onsite as well. Two of the dwellings are separate from the site while one is within the site boundaries. There is also the Huntly Volunteer Fire Station on the north-west corner of the property (outside the site boundary).</p>

2.4 Existing access and utilities

Roads and access	The existing dwellings on or near the site have driveway access and there is an access track along the western boundary of the site connecting to Sargeants Road south of the site. The Midland Highway, Buckleys Lane and Sargeants Road run along the eastern, northern and southern boundaries respectively.
Power	The site is connected to mains power
Water	The site is connected to mains water
Nearest fire hydrant	There are no hydrants currently available for the entire site but there is a hydrant on the north-west corner of the site next to the Huntly Volunteer Fire Station.
Sewerage	The site is connected to reticulated sewerage

2.5 Adjacent land

Map 2 and Figure 1 show the adjacent landscape around the site.

The site and most of the adjacent landscape consist of pastured areas with some complete/partially complete residential areas to the east and north-east of the site. The adjacent landscape to the west is also pasture but this area has no residential development present. Further east of the pasture/residential development is the Deniliquin Rail Line and vegetated areas of State Park. Further west of the farmland areas are some vegetated areas around the Bendigo Creek, but it is still primarily pasture and farmland.

Most of the site and the land to the east is Low Density Residential Zone (LDRZ) with scattered patches of Industrial Zone (IN3Z) and Public Conservation and Resource Zone (PCRZ) around the State Forest areas further east. Most of the land to the west, and some areas onsite, is Farming Zone (FZ) with another area of PCRZ around the Bendigo Creek. There are multiple overlays on the site and adjacent landscape and the Bushfire Management Overlay is approximately 500m to the east.

The placement of current development and the zoning within the adjacent landscape indicates that the land to the east of the site will become much lower risk as the residential development observed there is completed and more development occurs within currently pastured areas (presence of LDRZ and level of current development indicates this will occur over the next five years). The adjacent land to the west will likely remain as farmland due to the zoning present and the fact that no development has been observed on this side. This will mean that any bushfire risk generated from the western side of the site is unlikely to be reduced over time.

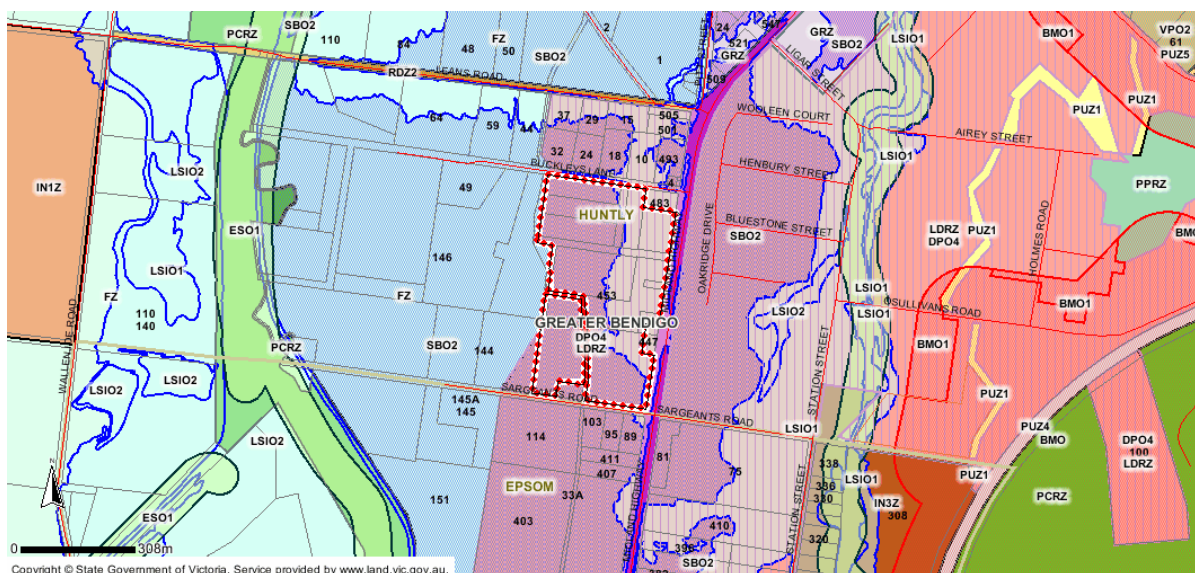


Figure 1. Surrounding land zoning

2.6 Vegetation and topography

Map 3 shows the existing conditions across the site including classified vegetation within 100m of the site and Table 2 for an assessment of the vegetation within 100m of the site as per AS3959–2018. The site and the surrounding land within the assessment area is flat with no slopes which could influence bushfire behaviour. Classified vegetation as per AS3959–2018 within 100m of the site includes Grassland, Shrubland and Woodland vegetation.

Table 2. Bushfire hazard site assessment

Direction	North	East	South-East	South	South	West
Vegetation type	Low Threat	Grassland	Shrubland	Woodland	Grassland	Grassland
Effective slope (up/down)	Flat	Flat	Flat	Flat	Flat	Flat
Effective slope (degrees)	0°	0°	0°	0°	0°	0°
Patch ID	7	3	6	4 & 5	2	1

Grassland vegetation is the most common vegetation type observed within the assessment area. Grassland vegetation as per AS3959–2018 is dominated by grass and herb species and can contain canopy and elevated fuel layers of varying heights if the foliage cover is less than 10%. Areas with coverage greater than 10% of canopy trees or of shrubs were considered Woodland and Shrubland as per AS3959–2018, respectively.

Grassland is present across the site (area was tilled at the time of this assessment) and in the paddocks to the north-west (Patch 1, see Figure 2, Figure 3 and Figure 4), on paddocks to the south of the site (Patch 2, see Figure 5) and on paddocks to the west of the site (Patch 3, see Figure 6). Pasture is normally allowed to regenerate following tilling and/or grazing to create more feed for livestock so while these areas were relatively free of vegetation during our assessment, it will be Grassland soon.

Vegetation within the assessment area also included two small patches of Woodland along Sargeants Road to the south of the site (Patches 4 and 5, see Figure 7). This consists of a canopy layer of between 10–30m tall (can be less than 10m) with foliage cover of between 10–30%. The only other patch of classified vegetation was a patch of Shrubland to the south–west (Patch 6, see Figure 8).

Low Threat vegetation as per AS3959–2018 consists of vegetation managed to minimal fuel conditions including maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and wind breaks. Areas matching this description form a single patch (Patch 7) and include the surrounding road reserves (see Figure 9), the agricultural facility to the south–west (see Figure 10) and residential areas to the north–east and north (see Figure 11).

2.7 Photographs of the site and assessment area



Figure 2. Grassland vegetation in the northern half of the site (Patch 1)



Figure 3. Grassland vegetation in the southern half of the site (Patch 1)



Figure 4. Grassland vegetation north–west of the site alongside irrigation channel (Patch 1)



Figure 5. Grassland vegetation south of the site (Patch 2)



Figure 6. Grassland vegetation to the east of the site (Patch 3)



Figure 7. Woodland vegetation to the south of the site (Patches 4 and 5)



Figure 8. Shrubland vegetation south-east of the site (Patch 6)



Figure 9. Low Threat areas along the Midland Highway (Patch 7)



Figure 10. Low Threat areas south-west of the site (Patch 7)



Figure 11. Low Threat areas north of the site along Buckleys Lane (Patch 7)

3. BUSHFIRE HAZARD LANDSCAPE ASSESSMENT

The bushfire hazard landscape assessment provides information on the bushfire hazard more than 100 m away. This information is presented in Map 4 and discussed further below.

3.1 Landscape

Map 4 and Figure 12 show the wider landscape surrounding the site.

The site is on the northern edge of the City of Greater Bendigo with denser urban and residential development south of the site. There are two large patches of vegetation to the east and south-east (the Bendigo State Forest) and to the west and north-west (Greater Bendigo National Park) but these are separated from the site by low density residential development to the east and farmland to the west. The landscape immediately north of the site is a mixture of residential development and farmland moving further away from Bendigo and the remaining landscape further north and north-east is farmland and pasture.

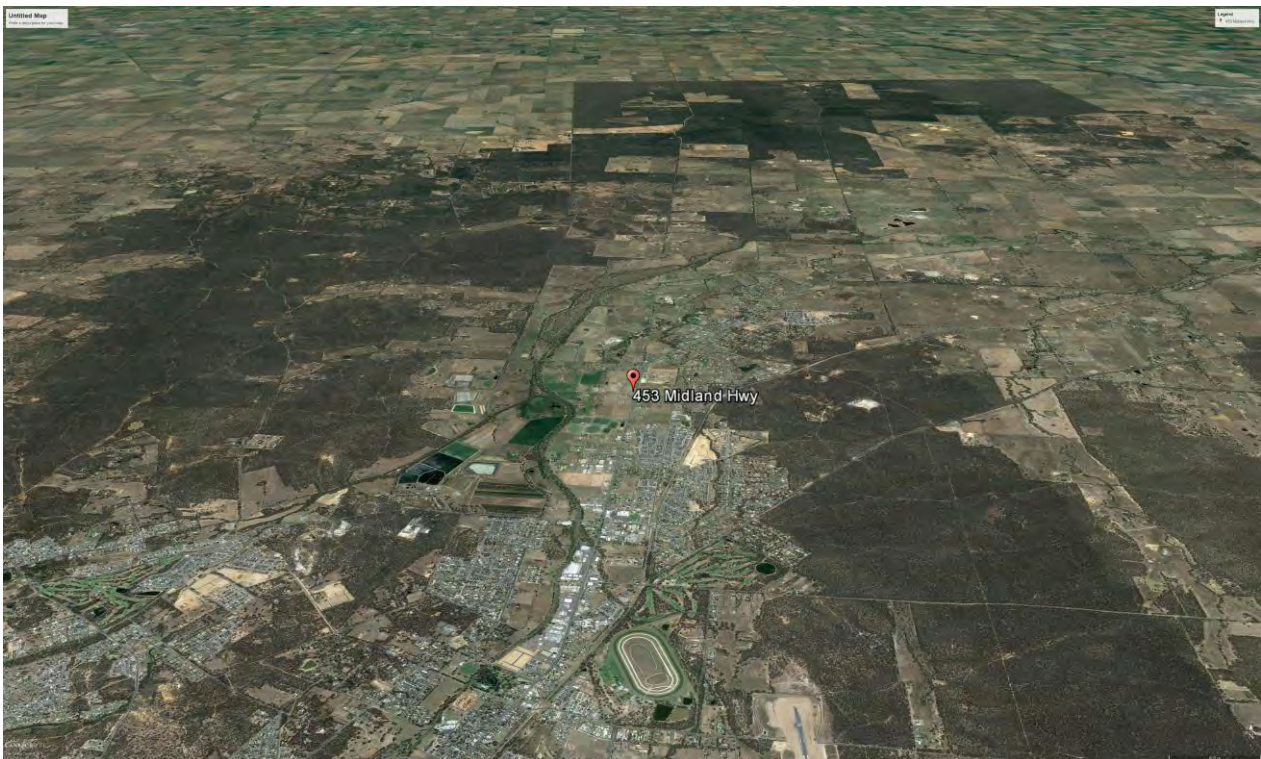


Figure 12. Landscape context

3.2 Bushfire history

The surrounding landscape has been extensively exposed to fire, but the majority of the activity is planned burns within the Bendigo State Forest and Greater Bendigo National Park from 1983 to 2013. There have been a few small bushfires within these areas in 1998, 2009, 2012, 2013, 2014 and 2016 but nothing within 1–2 km of the site.

3.3 Bushfire scenarios

During bushfire season, powerful north-westerly winds propel bushfires before a cooler south-westerly change arrives which can turn an existing bushfire or push a new bushfire front to the north-east. These south-westerly winds are generally cooler due to the more humid air being brought in from over the Southern Ocean but as the site is more than 200km inland, these winds will remain hot and dangerous for a significant period before cooler air arrives.

The Bendigo State Park is south-east of the site and separated by residential area, so this area poses little to no threat under prevailing conditions. A bushfire within the Greater Bendigo National Park would be pushed towards the site by prevailing conditions (from the north-west or south-west) and threaten the site with embers. These fronts are unlikely to reach the site however as the pasture and farmland separating the national park from the site would provide ample opportunity for containment and suppression.

A grassfire spreading from the national park area or, far more likely, being ignited from an ember from an approaching fire is the most likely scenario to threaten the site directly. These fires are less intense than bushfires but move more quickly and could threaten properties along the western boundary of the site. The chance of a grassfire reaching the site is low considering the amount of managed land present and the likelihood of quick suppression, but precautions should be considered along the western boundary and the dwellings placed there. The patches of Woodland south of the site could be ignited but they are small enough to not constitute a significant risk.

3.4 Shelter and refuge options

During a bushfire emergency, evacuation may not be required as the development proposed for the site will provide a low threat area for refuge. The site also has direct access to the Midland Highway which can accommodate evacuating residents and emergency vehicles easily. Residents who wish to evacuate should proceed south along the Midland Highway into the denser residential areas around the City of Greater Bendigo. Residents can then proceed to the Neighbourhood Safer Places (NSP) at the Bendigo Showgrounds (North Bendigo NSP) or seek refuge elsewhere within Bendigo.

3.5 Landscape typology

Planning Practice Note 65 provides a typology of bushfire landscapes (see Table 3).

This site is best characterised as a Type 2 due to the vegetation present within the wider landscape and the immediate access to refuges and safer areas. The presence of the Bendigo State Park and Greater Bendigo National Park eliminate the possibility of Type 1 despite the amount of pasture present around the site.

Type 3 could be considered as a grassfire could approach from the north-west or south-west (more than one aspect). Most of the surrounding landscape is managed to grassland or to minimal fuel condition however and the presence of the Midland Highway along the eastern boundary guarantees immediate access to shelter. The site could also be viewed as a shelter once it and the surrounding residential areas are developed. Considering these factors, Type 2 is the best option for classifying the landscape typology of this site.

Table 3. Landscape typology as presented in Planning Practice Note 65 (DTPLI 2014)

Type 1	Type 2	Type 3	Type 4
<ul style="list-style-type: none"> - There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation). - Extreme bushfire behaviour is not possible. - The type and extent of vegetation is unlikely to result in neighbourhood scale destruction of property. - Immediate access is available to a place that provides shelter from bushfire. 	<ul style="list-style-type: none"> - The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site. - Bushfire can only approach from one aspect and the site is located in a suburban, township or urban area managed in a minimum fuel condition. - Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area. 	<ul style="list-style-type: none"> - The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site. - Bushfire can approach from more than one aspect. - The site is located in an area that is not managed in a minimum fuel condition. - Access to an appropriate place that provides shelter from bushfire is not certain. 	<ul style="list-style-type: none"> - The broader landscape presents an extreme risk. - Evacuation options are limited or not available.

4. BUSHFIRE RISK ASSESSMENT

As stated earlier, only an assessment of bushfire risk is required to show it was considered alongside the planning permit as per Clause 13.05. We have performed this risk assessment as per the requirements of Clause 53.02 as this is considered the best benchmark for bushfire risk and ensures all the relevant areas are considered. This section describes how the proposed development responds to the requirements in Clause 53.02–2 in order to determine the bushfire risk to the property and whether the proposed designs adequately respond to it. Recommendations for bushfire protection measures will also be proposed.

4.1 Definition of objectives and measures

To fulfil the purpose and allow application of Clause 53.02 of the Planning Scheme, objectives, measures to address the objectives, and decision guidelines are detailed within the Clause. These are defined below:

- **Objectives.** An objective describes the outcome that must be achieved in a completed development.
- **Approved measures (AM).** An approved measure meets the objective.
- **Alternate measures (AltM).** An alternative measure may be considered where the responsible authority is satisfied that the objective can be met. The responsible authority may consider other unspecified alternative measures.
- **Decision guidelines.** The decision guidelines set out the matters that the responsible authority must consider before deciding on an application, including whether any proposed alternative measure is appropriate.

4.2 Development proposal

Appendix 3 shows the proposed development plans.

The landowners are proposing to subdivide the land into 72 residential lots with internal roads and a drainage reserve (basin) for excess stormwater. It should also be noted that the proposed residential lots and internal access roads will be built within General Residential Zone while the drainage reserve will be built within Farming Zone in the north–west corner of the site.

The proposed internal access road will connect to Buckleys Lane north of the site and Sargeants Road south of the site with three smaller ‘No Through Roads’ accessing lots on the western side of the site. The lots on the eastern boundary will be accessed via longer driveways onto the proposed internal road so no lot will need driveway access onto the Midland Highway.

4.3 Relevant Objectives and Approved Measures

Clause 53.02–5.4 provides the objectives and approved measures for Subdivisions. They are detailed in the table below.

Table 4. Approved measures to meet Clause 53.02–4.4 subdivision objectives

Clause 53.02–4.4 Subdivision objectives		
Measure	Requirement	Applicable
	<p>To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.</p> <p>To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.</p>	
AM5.1	<p>An application to subdivide land, other than where AM 5.2 applies, demonstrates that each proposed lot is capable of meeting:</p> <ul style="list-style-type: none"> The defensible space in accordance with Table 2 Columns A, B or C and Table 6 Clause 53.02–5. The approved measures in Clause 53.02–4.1 and Clause 53.02–4.3. 	No – 5.2 applies
AM5.2	<p>An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:</p> <ul style="list-style-type: none"> Each lot satisfies the approved measure in AM 2.1. A building envelope for a single dwelling on each lot that complies with AM 2.2 and provides defensible space in accordance with: <ul style="list-style-type: none"> Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots. <p>The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02–5 must be noted on the building envelope</p> <ul style="list-style-type: none"> Defensible space wholly contained within the boundaries of the proposed subdivision. Defensible Space may be shared between lots within the subdivision. Defensible space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defensible space. Vegetation management requirements in accordance with Table 6 to implement and maintain the defensible space required under this approved measure. Water supply and access that complies with AM 4.1 	Yes – requires consideration
AM 5.3	An application to subdivide land to create 10 or more lots provides a perimeter road adjoining the hazardous vegetation to support firefighting.	Yes – requires consideration
AM 5.4	A subdivision manages the bushfire risk to future development from existing or proposed landscaping, public open space and communal areas.	Yes – requires consideration

AM 5.2 includes the application of AM 2.1, 2.2 and 4.1. These are presented in Section 4.4, 4.5 and 4.7 respectively along with the appropriate response. The remaining points within AM 5.2 pertain to defensible space, the BAL construction standards and vegetation management and are presented and responded to in Section 4.6. AM 5.3 is addressed as part of the access requirements in Section 4.7.2 and Section 4.6.3 addresses AM 5.4.

4.4 Landscape risk objectives

Clause 53.02–4.4 Subdivision objectives

To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.

To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.

AM 5.2

An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:

- **Each lot satisfies the approved measure in AM 2.1.**
- A building envelope for a single dwelling on each lot that complies with **AM 2.2** and provides defensible space in accordance with:
 - Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or
 - Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots.

The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02–5 must be noted on the building envelope

- Defensible space wholly contained within the boundaries of the proposed subdivision.
- Defensible Space may be shared between lots within the subdivision. Defensible space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defensible space.
- Vegetation management requirements in accordance with Table 6 to implement and maintain the defensible space required under this approved measure.
- Water supply and access that complies with AM 4.1

AM 2.1

The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.

The landscape conditions are detailed in Section 3 of this report.

The presence of denser vegetation within the Bendigo State Park and Greater Bendigo National Park creates the Type 2 landscape with elements of Type 3 as the proximity to Grassland along the western boundary means a grassfire can approach from the north–west or south–west. Despite this, the larger patches of vegetation are well separated from the site and the adjacent grassland is pasture and farmland and should pose less threat than naturally occurring Grassland due to the regular management by stock and regular irrigation.

In addition, once the site is developed then it will be considered Low Threat. The installation of fire hydrants is highly recommended to reduce risk further and aid this proposal in meeting AM 2.1. At present however, the risk from the surrounding landscape is reduced significantly by the proximity to developed areas and the reduced risk from the adjacent Grassland/pasture.

4.5 Subdivision design

Clause 53.02–4.4 Subdivision objectives

To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.

To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.

AM 5.2

An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:

- Each lot satisfies the approved measure in AM 2.1.
- **A building envelope for a single dwelling on each lot that complies with AM 2.2** and provides defensible space in accordance with:
 - Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or
 - Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots.

The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02–3 must be noted on the building envelope

- Defensible space wholly contained within the boundaries of the proposed subdivision.
- Defensible Space may be shared between lots within the subdivision. Defensible space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defensible space.
- Vegetation management requirements in accordance with Table 6 to implement and maintain the defensible space required under this approved measure.
- Water supply and access that complies with AM 4.1

AM 2.2

A building is sited to ensure the site best achieves the following:

- The maximum separation distance between the building and the bushfire hazard.
- The building is in close proximity to a public road.
- Access can be provided to the building for emergency service vehicles

The majority of the lots are well separated from the western boundary which contains Grassland and the southern boundary which has a small patch of Woodland (all other patches of classified vegetation are adequately separated from the site or will be managed as part of the proposal) and can therefore provide maximum separation. There are lots along the north–western boundary which are directly adjacent to the bushfire threat. Setbacks are recommended to meet AM 2.2 and will be required to achieve BAL–12.5 and BAL–19.

The proposed internal roads provide adequate access for residents and emergency services and the proposed slipways along the Midland Highway significantly reduces the risk for residents and emergency services accessing the road from the highway. This proposal can therefore easily meet AM 2.2 as long the appropriate BAL setbacks are maintained along the western boundary of certain lot (a full list of the lots requiring setbacks is provided in Section 4.6.1).

4.6 Defendable space and construction

Clause 53.02–4.4 Subdivision objectives

To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.

To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.

AM 5.2

An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:

- Each lot satisfies the approved measure in AM 2.1.
- A building envelope for a single dwelling on each lot that complies with AM 2.2 **and provides defendable space in accordance with:**
 - Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or
 - Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots.

The bushfire attack level that corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02–3 must be noted on the building envelope

- Defendable space wholly contained within the boundaries of the proposed subdivision.
- Defendable Space may be shared between lots within the subdivision. Defendable space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defendable space.
- Vegetation management requirements in accordance with Table 6 to implement and maintain the defendable space required under this approved measure.
- Water supply and access that complies with AM 4.1

An assessment of the required defendable space from the site boundaries is displayed on Map 5.

As this site is not within the BMO but is within a Bushfire Prone Area, a BAL assessment will be required for the subsequent building permit. This assessment is provided below and indicates that the proposed lots will be able to provide BAL–12.5 or BAL–19 as per AM 5.1 (Columns A or B of Table 2 to Clause 53.02–5). Other recommendations based on the requirements of AM 5.1 are listed below. BAL–12.5 can also technically be provided for each lot as per Clause 13.02.

Setbacks will be required to achieve these BAL ratings on some lots along the western boundary and southern boundary but as this proposal does not need to meet AM 5.2 as a requirement, it will be up to the landowners as to whether they want to meet these setbacks from the western boundary or build to BAL–19 or BAL–29 to avoid them. The installation of a 2m tall non-combustible fence along

the western boundary could also negate the need for setbacks (will be at the discretion of the CFA and the City of Greater Bendigo).

The management of the onsite Grassland and the subsequent development of the land into dwellings, roadways and managed gardens will be sufficient management to meet the vegetation management requirements of Table 6 to Clause 53.02–5 (see Section 1.1.1). The fact that this management will be observed across the entire site will allow for defensible space to be shared between lots but also within the subdivision boundaries. In regard to the proposed drainage reserve, as the site is not within the BMO and the area will be considered a wetland, setbacks for adjacent lots or fuel reduction management within this reserve is not considered necessary.

4.6.1 BAL assessment

Document date & version	18/02/2021 – Version 3.0
Assessor	Julian Drummond
FPAAC Accreditation	BPAD Level 2 VIC – BPAD44709
Assessors Contact	Email: juliand@practicalecology.com.au Phone: (03) 9484 1555

Site Details

Municipality	Greater Bendigo
Address	453 Midland Highway, Huntly, Victoria, 3551
Applicant/Owner	Ample Investments Pty Ltd PO Box 1089, Torquay, Victoria, 3228 Email: accounts@ampleig.com.au
Zoning	Low Density Residential Zone (LDRZ) & Farming Zone (FZ)
Overlays	<ul style="list-style-type: none"> • Development Plan Overlay – Schedule 4 (DPO4) • Land Subject to Inundation Overlay – Schedule 1 (LSIO1) • Special Building Overlay – Schedule 2 (SBO2)
Bushfire Prone Area	Yes
Description of building work	See Appendix 3
Date site visited	14/03/2019

AS3959–2018 Method 1

Patch ID	1	2	3	4	5	6	7
Fire Danger Index	100	100	100	100	100	100	100
Vegetation type	Grassland	Grassland	Grassland	Woodland	Woodland	Shrubland	Low threat
Exclusions (from section 2.2.3.2 b, c, d, e or f)	N/A	N/A	N/A	N/A	N/A	N/A	e & f
Effective Slope (up/down)	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Slope (degrees)	0°	0°	0°	0°	0°	0°	0°
Defendable space for BAL 12.5 (m)	19	19	19	33	33	19	N/A
Defendable space for BAL 19 (m)	13	13	13	24	24	13	N/A
Defendable space for BAL 29 (m)	9	9	9	16	16	9	N/A
Defendable space for BAL 40 (m)	6	6	6	12	12	6	N/A
Distance of vegetation to from site boundary (m)	0	20	44	11	12	44	0
BAL at site boundary	Flame Zone	12.5	12.5	40	40	12.5	12.5

Prescribed BAL rating for each lot

Lot	BAL	Boundary setback location	Shielding provision (section 3.5 to AS3959–2018)	Lot	BAL	Boundary setback location	Shielding provision (section 3.5 to AS3959–2018)	Lot	BAL	Boundary setback location	Shielding provision (section 3.5 to AS3959–2018)
1	12.5	N/A	N/A	25	12.5	N/A	N/A	49	12.5	Western boundary	N/A
2	12.5	N/A	N/A	26	12.5	N/A	N/A	50	12.5	Western boundary	N/A
3	12.5	N/A	N/A	27	12.5	N/A	N/A	51	12.5	Western boundary	N/A
4	12.5	N/A	N/A	28	12.5	N/A	N/A	52	12.5	N/A	N/A
5	12.5	N/A	N/A	29	12.5	Southern boundary	N/A	53	12.5	N/A	N/A
6	12.5	N/A	N/A	30	12.5	Southern boundary	N/A	54	12.5	N/A	N/A
7	12.5	N/A	N/A	31	12.5	Southern boundary	N/A	55	12.5	N/A	N/A
8	12.5	N/A	N/A	32	12.5	N/A	N/A	56	12.5	N/A	N/A
9	12.5	N/A	N/A	33	12.5	N/A	N/A	57	12.5	N/A	N/A
10	12.5	N/A	N/A	34	12.5	Southern boundary	N/A	58	12.5	N/A	N/A
11	12.5	N/A	N/A	35	12.5	Southern boundary	N/A	59	12.5	Western boundary	N/A
12	12.5	N/A	N/A	36	12.5	N/A	N/A	60	12.5	N/A	N/A
13	12.5	N/A	N/A	37	12.5	N/A	N/A	61	12.5	N/A	N/A
14	12.5	N/A	N/A	38	12.5	N/A	N/A	62	12.5	N/A	N/A
15	12.5	N/A	N/A	39	12.5	N/A	N/A	63	12.5	N/A	N/A
16	12.5	N/A	N/A	40	12.5	North-western boundary	N/A	64	12.5	N/A	N/A
17	12.5	N/A	N/A	41	12.5	North-western boundary	N/A	65	12.5	N/A	N/A
18	12.5	N/A	N/A	42	12.5	N/A	N/A	66	12.5	N/A	N/A
19	12.5	N/A	N/A	43	12.5	N/A	N/A	67	12.5	N/A	N/A
20	12.5	N/A	N/A	44	12.5	N/A	N/A	68	12.5	N/A	N/A
21	12.5	N/A	N/A	45	12.5	N/A	N/A	69	12.5	N/A	N/A
22	12.5	N/A	N/A	46	12.5	N/A	N/A	70	12.5	N/A	N/A
23	12.5	N/A	N/A	47	12.5	N/A	N/A	71	12.5	N/A	N/A
24	12.5	N/A	N/A	48	12.5	South-western boundary	N/A	72	12.5	N/A	N/A

4.6.2 Defendable Space and management standards

Table 6 to Clause 53.02–5 requires that defendable space is provided and is managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Unless specified in a schedule or otherwise agreed in writing to the satisfaction of the relevant fire authority. As this site is not within the Bushfire Management Overlay however and will become part of a fully urban area, we are proposing the implementation of managed gardens, road reserves and dwellings occupying the majority of the proposed lots will be sufficient vegetation management.

4.6.3 Landscaping

AM 5.4

A subdivision manages the bushfire risk to future development from existing or proposed landscaping, public open space and communal areas

The internal roads will be considered public road reserve and will be managed by the City of Greater Bendigo and the proposed drainage reserve will be managed by a body corporate. The road reserves will be managed to minimal fuel conditions and will pose no threat to the proposed subdivision.

The proposed drainage reserve will be managed to provide adequate stormwater drainage for the proposed residential area and for conservation purposes. However, considering that this area will contain wetland vegetation and above average moisture levels, this should pose minimal threat to the surrounding vegetated areas and no additional management for bushfire safety should be required.

4.7 Water supply and access

Clause 53.02–4.4 Subdivision objectives

To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.

To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.

Measure	Requirement
---------	-------------

AM5.2	An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:
--------------	--

- Each lot satisfies the approved measure in **AM 2.1**.
- A building envelope for a single dwelling on each lot that complies with **AM 2.2** and provides defensible space in accordance with:
 - Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or
 - Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots.

The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02–3 must be noted on the building envelope

- Defensible space wholly contained within the boundaries of the proposed subdivision.
- Defensible Space may be shared between lots within the subdivision. Defensible space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defensible space.
- Vegetation management requirements in accordance with Table 6 to implement and maintain the defensible space required under this approved measure.
- **Water supply and access that complies with AM 4.1**

AM 4.1

A building used for a dwelling (including an extension or alteration to a dwelling), a dependant person's unit, industry, office or retail premises is provided with:

- A static water supply for fire fighting and property protection purposes specified in Table 4 to Clause 53.02–3.
- Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02–3.

The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for firefighting water supplies.

Water supply and access requirements are detailed in Sections 4.7.1 and 4.7.2 below and guidance is detailed in Appendix 1.

4.7.1 Water supply

The static water supply requirements under AM 4.1 are detailed in Table 5 below.

Table 5. Minimum static water supply requirements for buildings in BMO (Clause 53.02–3, table 4)

Minimum static water supply for office, retail, dwellings and dependent person's units			
Lot sizes (m ²)	Hydrant available	Effective capacity (L)	Fire authority fittings and access required
Less than 500	N/A	2,500	No
500–1,000	Yes	5,000	No
500–1,000	No	10,000	Yes
1,001 and above	N/A	10,000	Yes

Note 1: A hydrant is available if it is located within 120 meters of the rear of the building

Note 2: Fittings must be in accordance with the published requirements of the relevant fire authority

All of the proposed lots are greater than 1,001m² and, if the site were within the BMO, would be required a 10,000L tank with CFA access and the appropriate fittings (see Appendix 1). This is not a formal requirement as the site is only within a Bushfire Prone Area but we are highly recommending the installation of a fire hydrant system within the proposed subdivision. Fire hydrants will need to meet the following requirements:

- Hydrants will be within 120m of the rear of lots and will be no more than 200m apart
- Hydrants will be identified as per CFA specifications (see Figure 13)

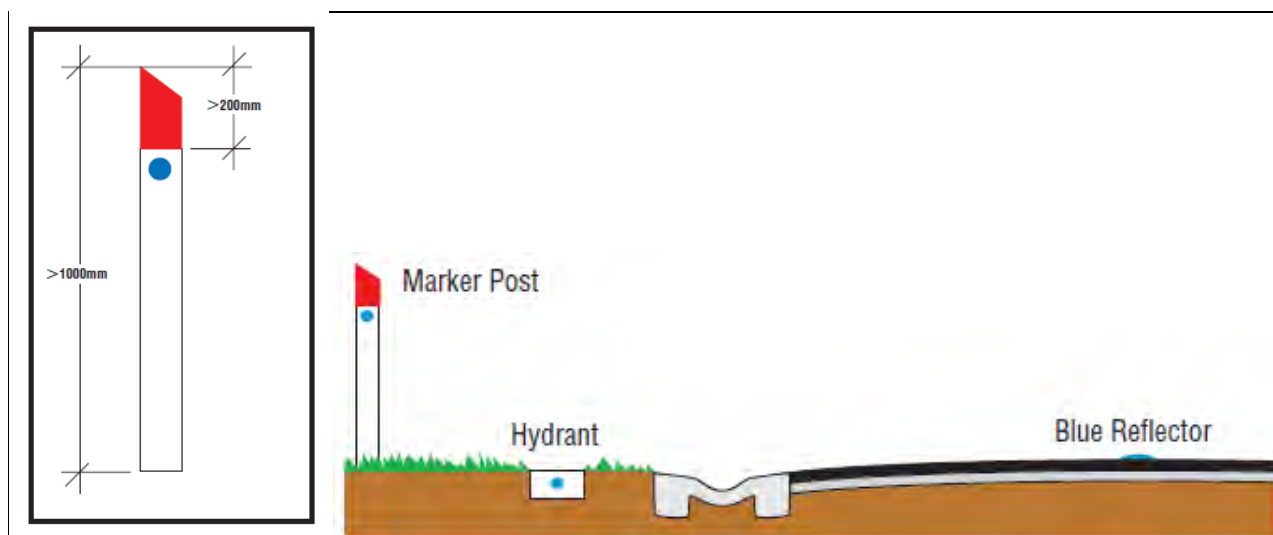


Figure 13. Water Supply Signage (CFA 2006).

A 5,000L static water supply is also recommended for future landowners as per Clause 52.03. This will not require CFA fittings or access but will act as a secondary water supply in the event that the usage of adjacent fire hydrants by emergency services reduces the pressure from the mains water supply. Static water supplies within lots should meet the following requirements:

- 5,000 L static supply

- be stored in an above ground water tank constructed of concrete or metal.
- all fixed above-ground water pipes and fittings required for firefighting purposes must be made of corrosive resistant metal
- Include a separate outlet for occupant use

4.7.2 Access

Table 6 presents the access requirements of AM 4.1.

All proposed lots have immediate access to an existing main road, a proposed internal road or a proposed slipway. Lots are also, on average, 50–75m in length and should be easily able to provide an access length of less than 30m. In addition, none of the lots will require a static water supply which requires CFA access so no formal requirements for access are being recommended by this report.

Table 6. AM4.1 Vehicle access design and construction (Clause 53.02–5, table 5)

Access length	Design requirements
Length of access is less than 30m	There are no design and construction requirements if fire authority access to the water supply is not required under AM4.1.
Length of access is less than 30 metres	Where fire authority access to the water supply is required under AM4.1 fire authority vehicles should be able to get within 4 metres of the water supply outlet.
Length of access is greater than 30 metres	The following design and construction requirements apply: <ul style="list-style-type: none"> • All-weather construction. • A load limit of at least 15 tonnes. • Provide a minimum trafficable width of 3.5 metres. • Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically. • Curves must have a minimum inner radius of 10 metres. • The average grade must be no more than 1 in 7 (14.4%) (8.1°) with a maximum grade of no more than 1 in 5 (20%) (11.3°) for no more than 50 metres.
Length of access is greater than 100 metres	A turning area for fire fighting vehicles must be provided close to the building by one of the following: <ul style="list-style-type: none"> • A turning circle with a minimum radius of eight metres. • A driveway encircling the dwelling. • The provision of other vehicle turning heads – such as a T or Y head – which meet the specification of Austroad Design for an 8.8 metre Service Vehicle.
Length of access is greater than 200 metres	Passing bays must be provided at least every 200 metres. <ul style="list-style-type: none"> • Passing bays must be a minimum of 20 metres long with a minimum trafficable width of six metres.

Note 1: The length of access should be measured from a public road to either the building or the water supply outlet, whichever is longer.

AM 5.3

An application to subdivide land to create 10 or more lots provides a perimeter road adjoining the hazardous vegetation to support firefighting.

The northern, eastern and southern aspects of the site are flanked by Buckleys Lane, the Midland Highway and Sargeants Road respectively so a perimeter around these boundaries is already provided. The western boundary does not contain a boundary road on the proposed layout or the adjacent land but as this site is not within the BMO, it is not formally required.

The properties west of the site contain open pasture and an agricultural facility designed to accommodate large vehicles. Buckleys Lane and Sargeants Road extend further west from the north and south respectively so there are multiple areas from which emergency services can establish staging areas for oncoming grassfires so the risk along the western boundary can be effectively reduced without a boundary road as long as the other recommendations are followed.

4.8 Interim management

The vegetation observed onsite was considered Grassland despite being tilled at the time of this assessment on the assumption that it will be allowed to regenerate as pasture or crop. The establishment of internal roads and the earthworks required to supply amenities (water and sewerage) to each lot will result in all onsite vegetation being cleared. Any vegetation which regenerates after these works but before lots are sold/developed should be monitored and potentially managed to reduce the bushfire risk to developed lots and/or dwellings under construction.

4.9 Ongoing management and community awareness

This report provides a full BAL assessment for each lot which should be sufficient for individual landowners applying for their building permits. Proposed dwelling plans can be applied on each lot with the appropriate setbacks and BAL ratings and constructed accordingly. Once these have been finalised, additional supporting documentation should be provided to new residents to ensure that they understand the bushfire risk at the site and their obligations to manage it, including prescriptions and advice regarding the Landscape Design Guidelines.

Residents need to also be aware that the measures in this assessment cannot guarantee safety during an extreme fire event; buildings are only designed to withstand fire up to a Fire Danger Index (FDI) of 100 (i.e. not designed for Code Red Fire Danger), and even below this threshold building survival cannot be guaranteed. Residents should develop a Personal Bushfire Plan to clearly understand and plan for how they are going to act in response to a potential and actual fire event. Residents should refer to CFA's Fire Ready Kit (CFA 2011) to help plan for such events.

5. REFERENCES

CFA (2006) *Requirements for Water Supplies and Access for Subdivisions in Residential 1 and 2 and Township Zones 2006*. Country Fire Authority, East Burwood.

CFA (2011) *Prepare. Act. Survive. Fire Ready Kit*. Country Fire Authority, Burwood East, Victoria.

CFA (2014a) *Water Supply Requirements (Bushfire Management Overlay)*. Country Fire Authority, Victoria.

CFA (2014b) *Access Requirements (Bushfire Management Overlay)*. Country Fire Authority, Victoria.

DTPLI (2014) *Practice Note 65: Preparing and Assessing a Planning Application under the Bushfire Provisions in Planning Schemes, July 2014*. Department of Transport, Planning and Local Infrastructure, Government of Victoria, Melbourne.

Standards Australia (2018) *Australian Standard 3959-2018 Construction of buildings in bushfire-prone areas (incorporating Amendment No. 1)*. SAI Global, Sydney.

Appendix 1. Water supply and access guidance

Water supply guidance

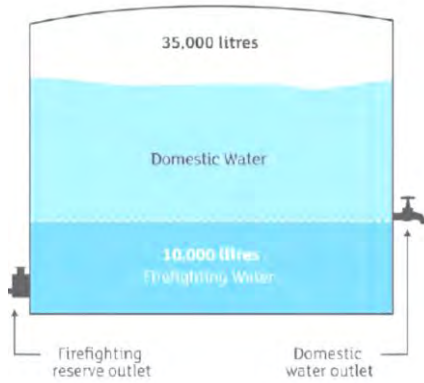


Figure 14. Firefighting water and domestic water can be in shared tank (DTPLI 2014)

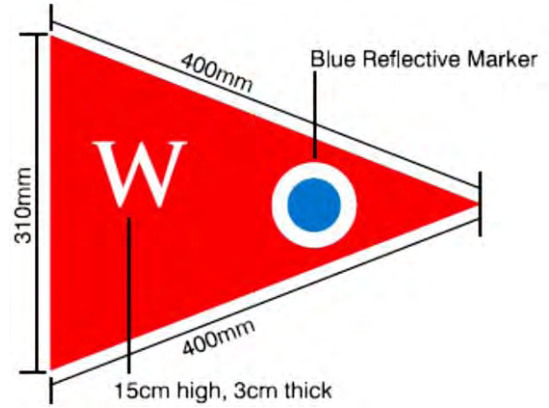


Figure 15. Water supply identification (CFA 2014a)

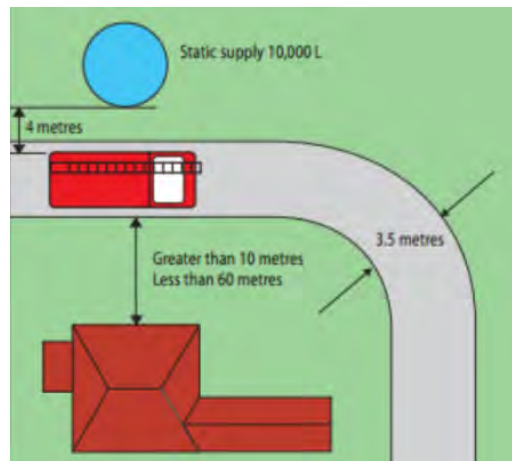


Figure 16. Water supply location (CFA 2014a)

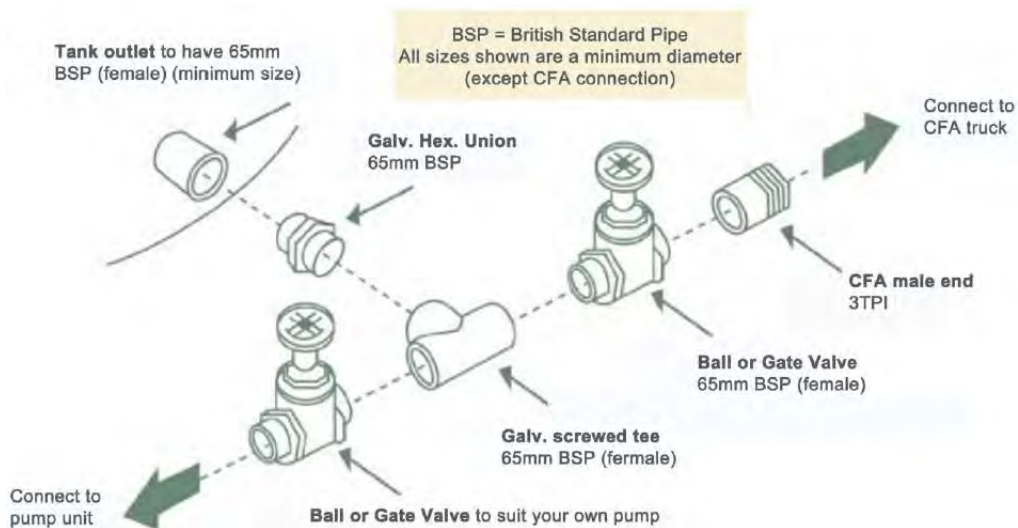


Figure 17. Requirements for water supply outlet, pipe work and valves (CFA 2014a)

Access guidance

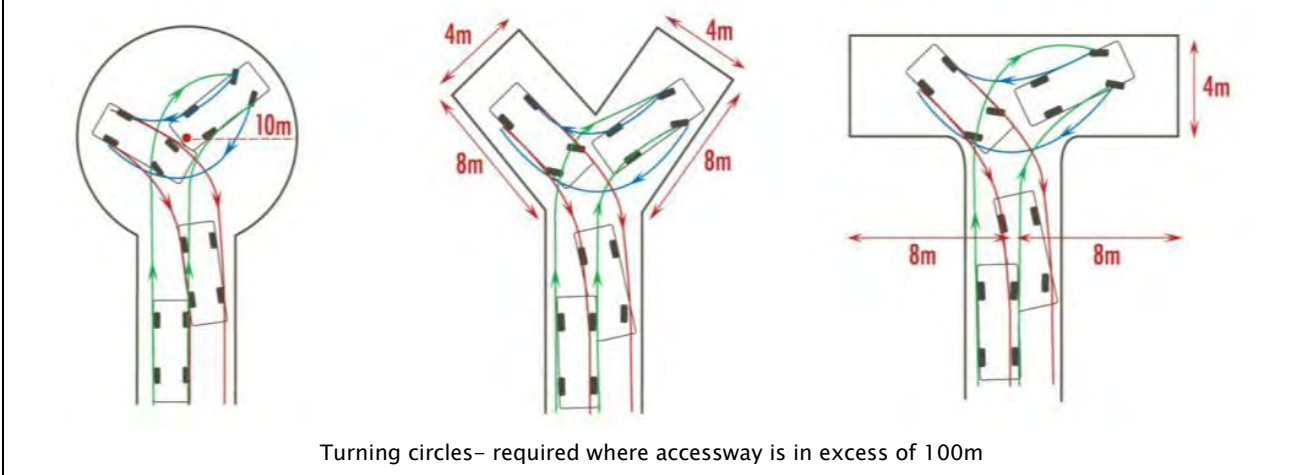
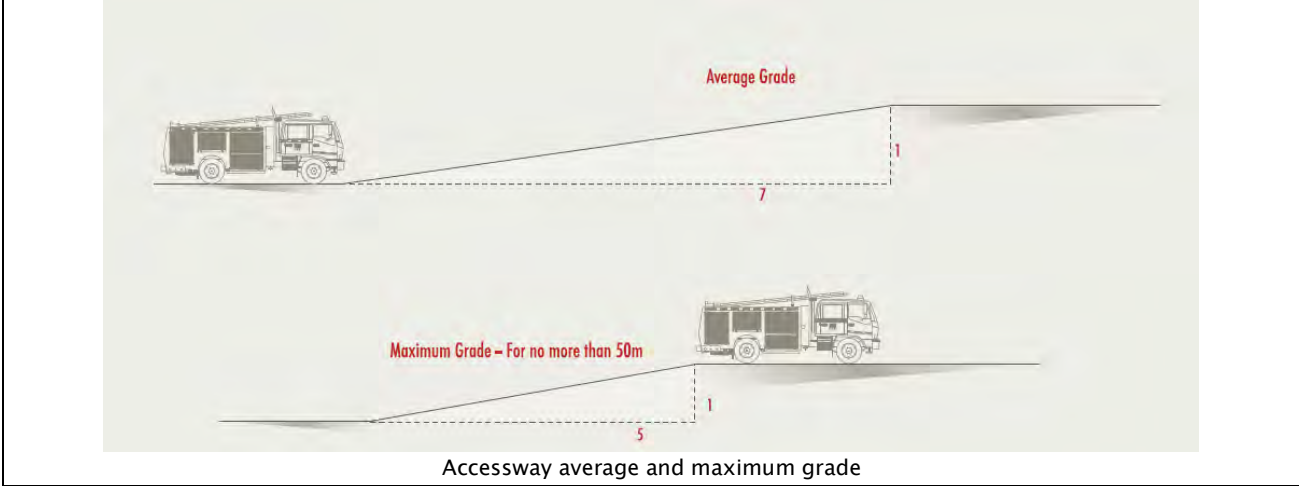
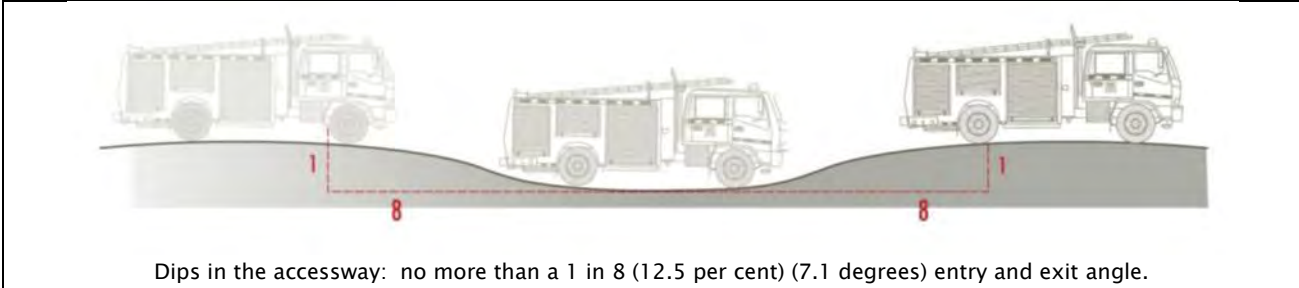
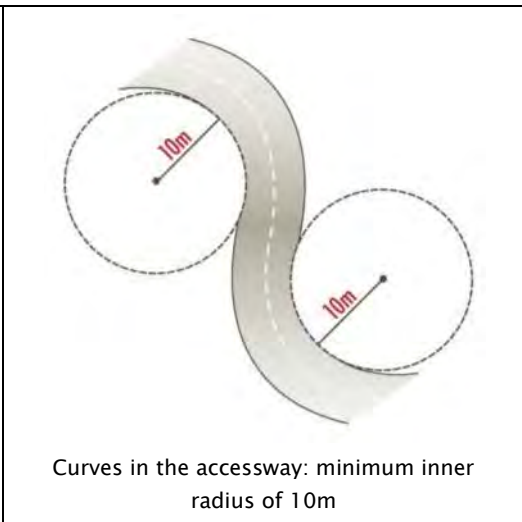
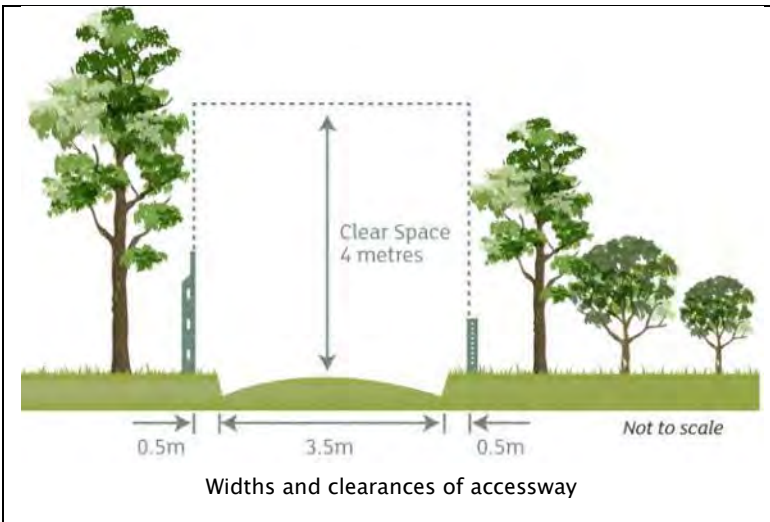




Figure 18. Access guidance (CFA 2014b)

Appendix 2. Maps



- Legend**
- Subject site
 - Parcels
 - Constructed watercourse

Disclaimer
 Practical Ecology bears no responsibility for the accuracy and completeness of this information and any decisions or actions taken on the basis of the map. While information appears accurate at publication, nature and circumstances are constantly changing.

Details
 Date: 25/02/2019
 Version: 1
 Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from Nearmap (Jan 2019).



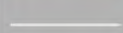
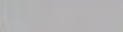
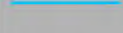
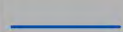
Map 1. Subject Site
 453 Midland Highway
 Huntly

Scale 1:2,000 (Page size A3)



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Legend

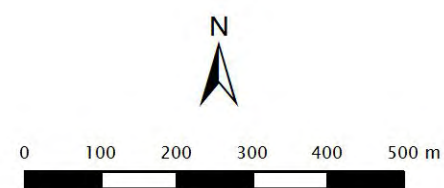
-  Subject site
-  Parcels
-  Contours (10m)
-  Constructed watercourse
-  Natural watercourse
-  Railways

Details

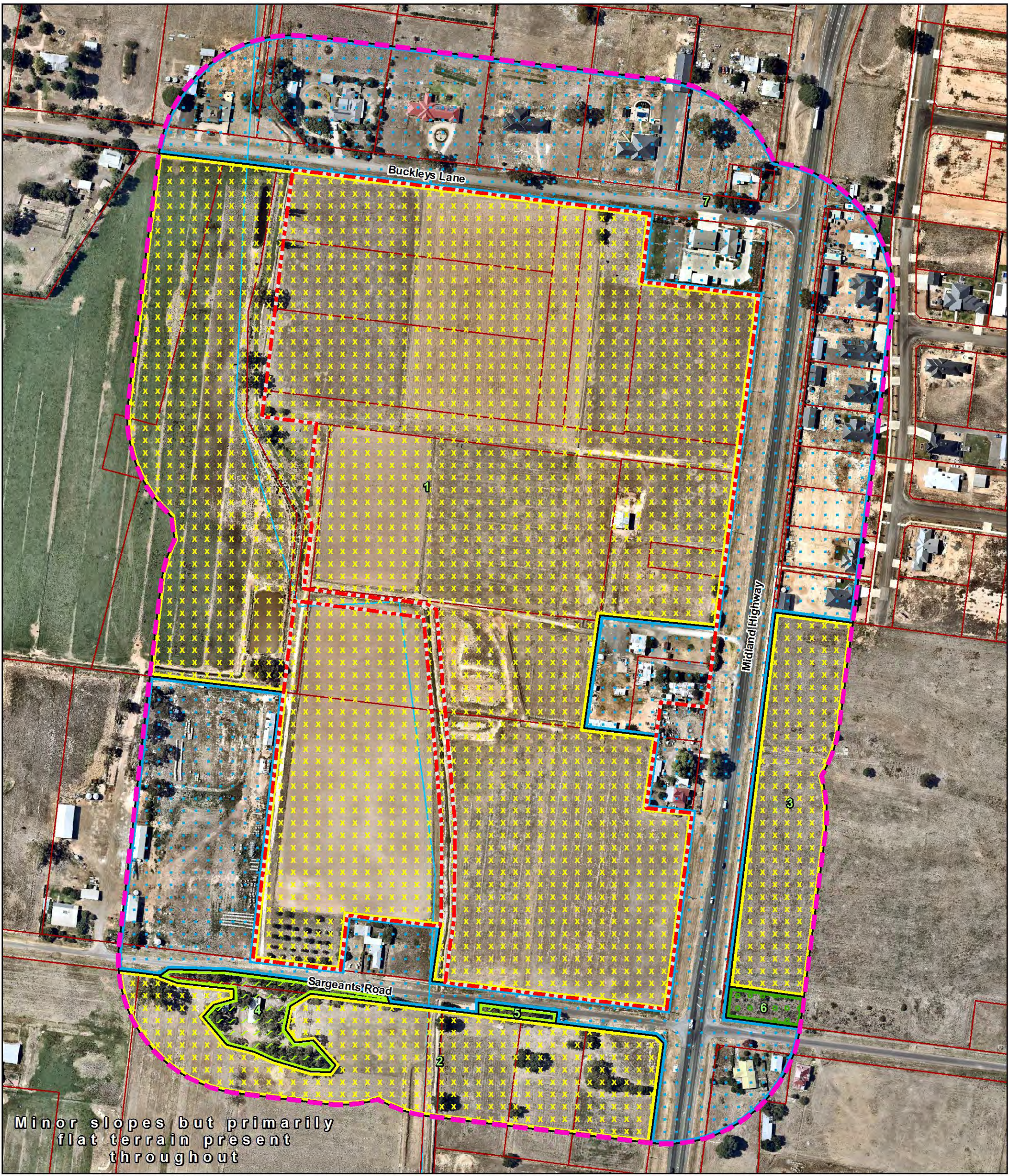
Date: 25/02/2019
 Version: 1

Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from ArcGIS World Imagery.

Map 2. Local Context
 453 Midland Highway
 Huntly



Scale 1:10,000 (Page size A3)



Minor slopes but primarily flat terrain present throughout



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Legend

- Subject site
- Assessment area (100m)
- Parcels
- Constructed watercourse
- Shrubland
- Woodland
- Low Threat
- Grassland

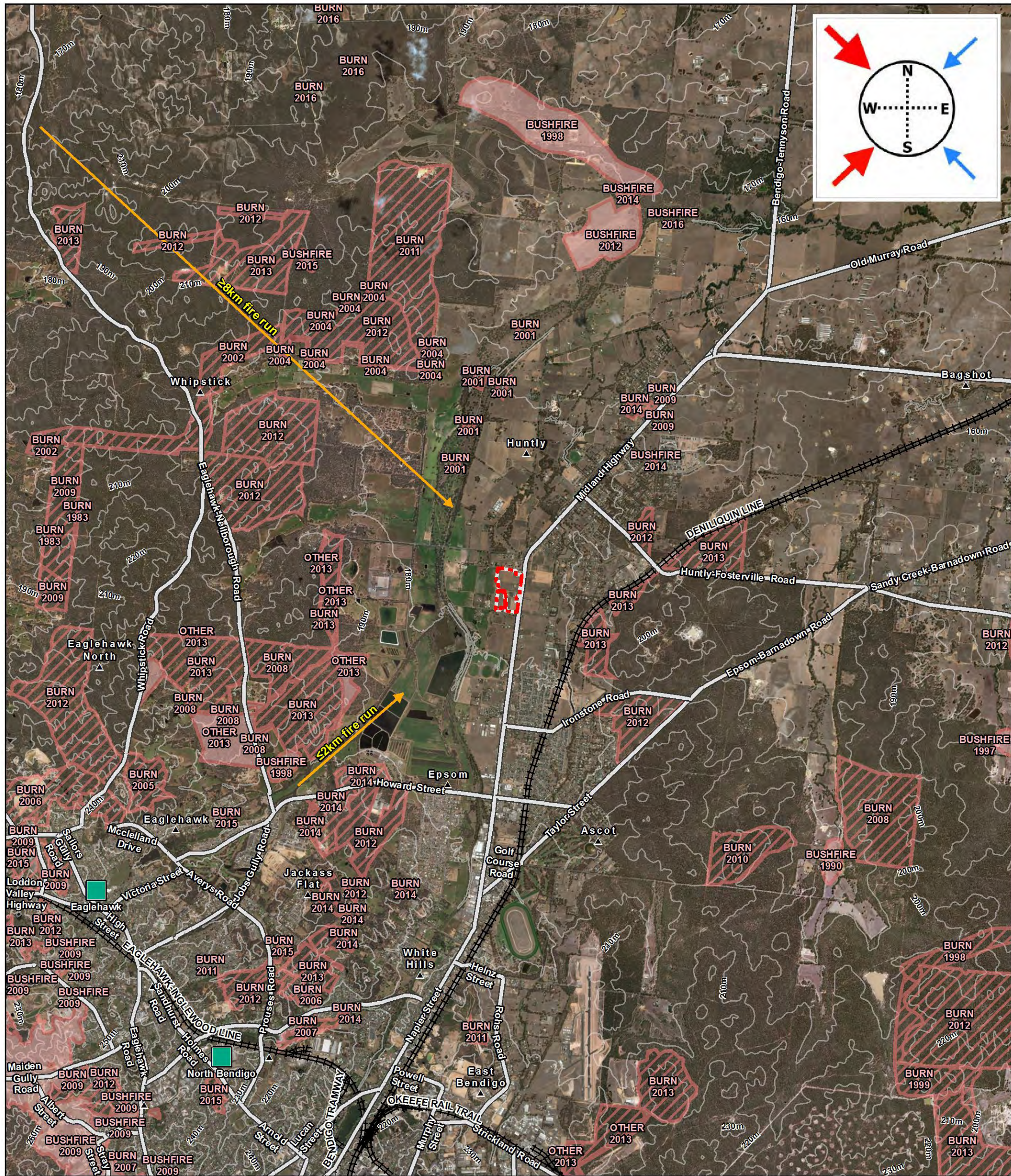
Vegetation type

Details
 Date: 15/03/2019
 Version: 1
 Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from Nearmap (Jan 2019).

Map 3. Bushfire Hazard Site Assessment
 453 Midland Highway
 Huntly

0 25 50 75 100 m

Scale 1:2,600 (Page size A3)



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ecological restoration & consulting

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Legend

- Subject site
- Contours (10m)
- Railways
- Major Roads
- Town centre
- Neighbourhood Safer Place
- Potential fire runs

Fire history

Bushfire

- Bushfire Pre 1950
- Bushfire 1950-1979
- Bushfire 1980 onwards

Planned Burn

- Planned Burn Pre 1980
- Planned Burn 1980 onwards

Details

Date: 25/02/2019
Version: 1

Data Source: Base layers courtesy of VicMap, Copyright © State of Victoria. Aerial photography from ArcGIS World Imagery.

Map 4. Bushfire Hazard Landscape Assessment
453 Midland Highway
Huntly

0 500 1,000 1,500 2,000 2,500 m

Scale 1:50,000 (Page size A3)



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Legend	
	Subject site
	Assessment area (100m)
	Parcels
	Constructed watercourse
	Grassland
	Shrubland
	Woodland (exempt vegetation)
	Low Threat
	Proposed development
	Road
	Basin
	Defendable space (Grassland, Flat/Upslope)
	BAL-12.5 (19m)
	BAL-19 (13m)
	BAL-29 (9m)
	Defendable space (Woodland, Flat/Upslope)
	BAL-12.5 (33m)
	BAL-19 (24m)
	BAL-29 (18m)

Details
 Date: 18/02/2021
 Version: 1
 Data Source: Base layers courtesy of VicMap,
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 Aerial photography from Nearnmap (Jan 2019).

Map 5. Defendable Space Assessment
 453 Midland Highway
 Huntly

Scale 1:2,000 (Page size A3)

Appendix 3. Detailed design plans



10	Minor Amendments	26/11/2020
9	Updated Layout	16/11/2020
8	Amended Dwelling Envelopes	15/09/2020
7	Overall Set Revisions	05/06/2020
Ver	Revision Description	Date
Designed	Checked	Approved
G.McCoomb	P.Bowe	
Nov 2020	Nov 2020	

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Scale (m) H 1:2000 0 20 40

All lengths are in metres
and all levels are to Australian Height Datum
(Original Sheet Size is A3)

Drawing file: 15078 Layout 1.dwg
LTO Ref: -

City Of Greater Bendigo - Huntly
Aberdeen Huntly Pty Ltd
453 Midland Highway
Subdivision Layout Plan 1 with Aerial Photograph

Council Ref:	Water Auth. Ref:	Our Ref:	Version	Sheet
-	-	15078	10	1 of 8



10	Minor Amendments	26/11/2020
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Drawing file: 15078 Layout 2.dwg
LTO Ref: -

City Of Greater Bendigo - Huntly
Aberdeen Huntly Pty Ltd
453 Midland Highway
Subdivision Layout Plan 2 with Aerial Photograph

Council Ref:	Water Auth. Ref:	Our Ref:	Version	Sheet
-	-	15078	10	2 of 8



10	Minor Amendments	26/11/2020
9	Updated Layout	16/11/2020
8	Amended Dwelling Envelopes	15/09/2020
7	Overall Set Revisions	05/06/2020
Ver	Revision Description	Date
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G.McCoomb	P.Bowe	
Nov 2020	Nov 2020	

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Scale (m) H 1:2000 0 20 40

All lengths are in metres
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Drawing file: 15078 Layout 2.dwg

LTO Ref: -

City Of Greater Bendigo - Huntly					
Aberdeen Huntly Pty Ltd					
453 Midland Highway					
Subdivision Layout Plan					
Council Ref:	Water Auth. Ref:	Our Ref:	Version	Sheet	
-	-	15078	10	3 of 8	



/// indicates Dwelling Envelopes
 XXX indicates Building Exclusion Zone

10	Minor Amendments	26/11/2020
9	Updated Layout	16/11/2020
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7	Overall Set Revisions	05/06/2020
Ver	Revision Description	Date
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G.McCoomb	P.Bowe	
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Scale (m) H 1:2000 0 20 40

All lengths are in metres
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 (Original Sheet Size is A3)



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City Of Greater Bendigo - Huntly
 Aberdeen Huntly Pty Ltd
 453 Midland Highway

Subdivision Layout Plan with Dwelling Envelopes

Council Ref:	Water Auth. Ref:	Our Ref:	Version	Sheet
-	-	15078	10	4 of 8

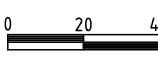


-  indicates Dwelling Envelopes
-  indicates Building Exclusion Zone

10	Minor Amendments	26/11/2020
9	Updated Layout	16/11/2020
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7	Overall Set Revisions	05/06/2020
Ver	Revision Description	Date
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G.McCoomb	P.Bowe	
Nov 2020	Nov 2020	

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Scale (m)  H 1:2000

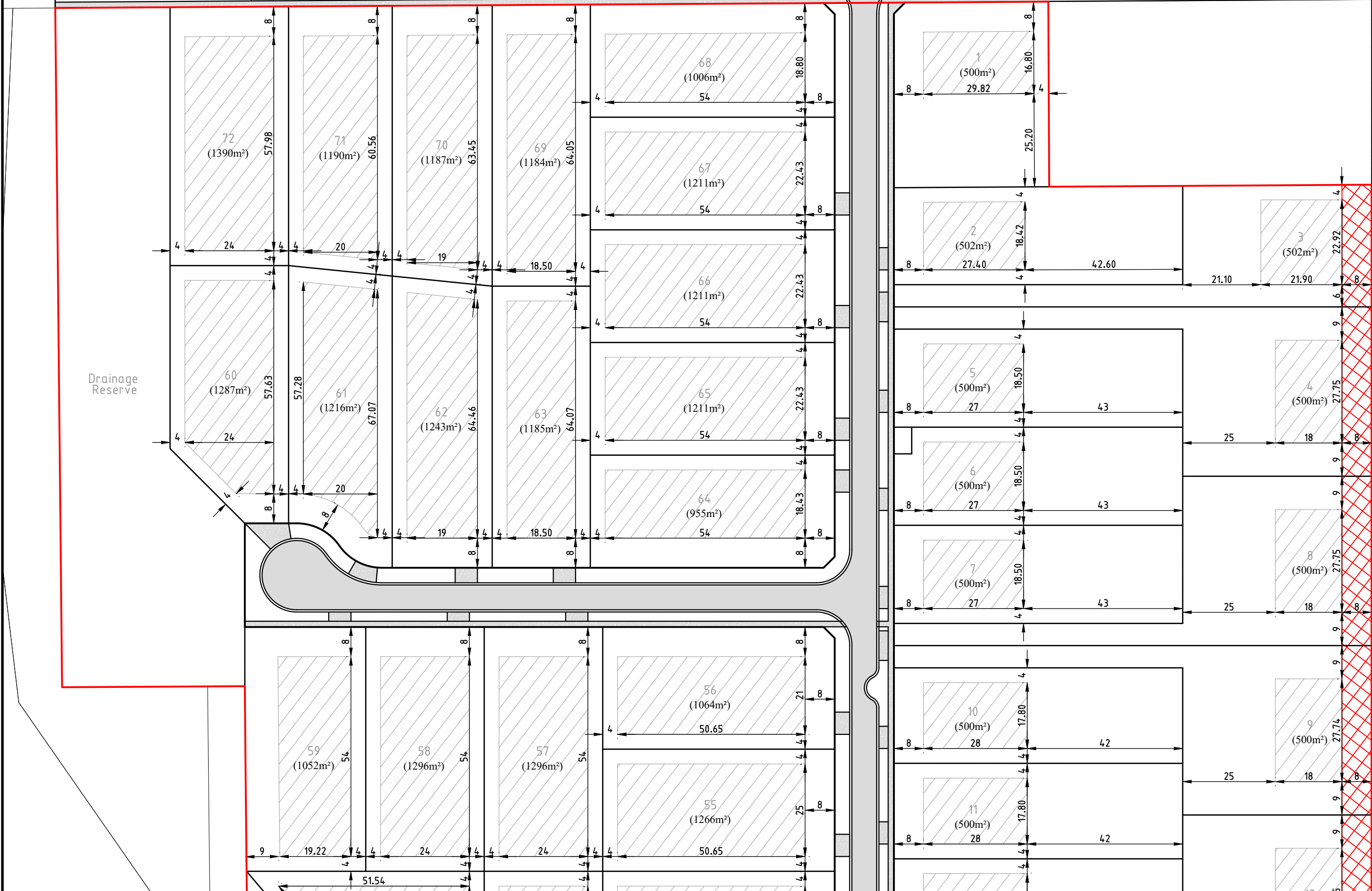
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(Original Sheet Size is A3)

Drawing file: 15078 Dwelling Envelope.dwg
LTO Ref: -

City Of Greater Bendigo - Huntly
Aberdeen Huntly Pty Ltd
453 Midland Highway
Proposed Plan of Subdivision with Dwelling Envelopes

Council Ref:	Water Auth. Ref:	Our Ref:	Version	Sheet
-	-	15078	10	5 of 8

Buckleys Ln



10	Minor Amendments	26/11/2020
9	Updated Layout	16/11/2020
8	Amended Dwelling Envelopes	15/09/2020
7	Overall Set Revisions	05/06/2020
6	Include 114 Sargeants Rd	01/06/2020
5	Footpath Single Sided Only	18/05/2020
4	Update Stage Boundaries	12/05/2020
Ver	Revision Description	Date

Designed	G.McCoomb	Nov 2020
Checked	P.Bowe	Nov 2020
Approved		

Notes/Legend	
	indicates Dwelling Envelopes
	indicates Building Exclusion Zone

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Scale (m)

H 1:1000

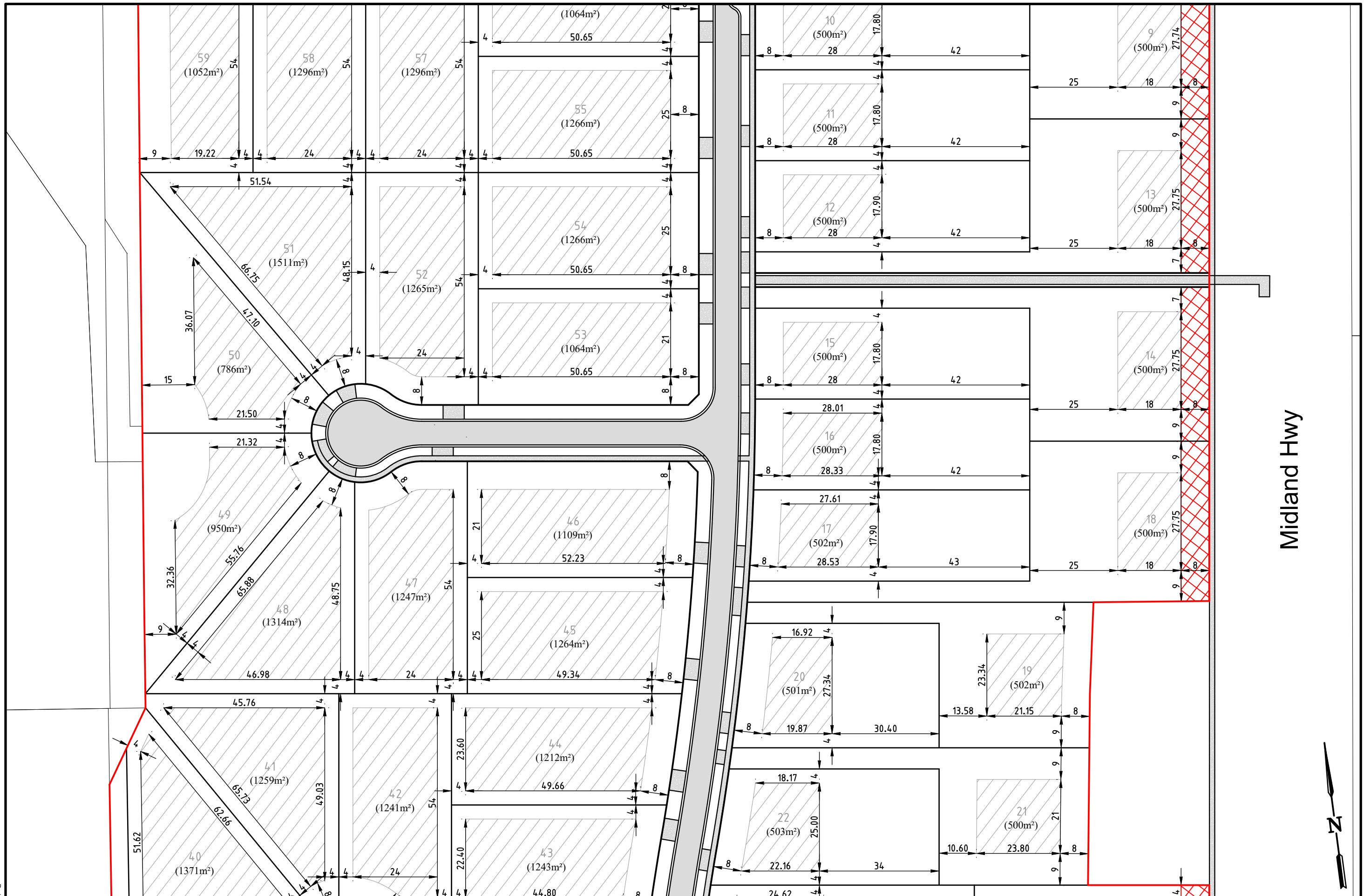
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15078 Dwelling Envelope Detail.dwg	LTO Ref: -	Council Ref: -	Water Auth. Ref: -	Our Ref: 15078	Version: 10	Sheet: 6 of 8
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City Of Greater Bendigo - Huntly

Aberdeen Huntly Pty Ltd
453 Midland Highway
Dwelling Envelope Plan

Printed: 2020-11-26 15:55:18



Midland Hwy



Printed: 2020-11-26 15:55:18

10	Minor Amendments	26/11/2020
9	Updated Layout	16/11/2020
8	Amended Dwelling Envelopes	15/09/2020
7	Overall Set Revisions	05/06/2020
6	Include 114 Sargeants Rd	01/06/2020
5	Footpath Single Sided Only	18/05/2020
4	Update Stage Boundaries	12/05/2020
Ver	Revision Description	Date

Designed	G.McCoomb	Checked	P.Bowe
	Nov 2020		Nov 2020
Approved			

Notes/Legend	
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	indicates Building Exclusion Zone

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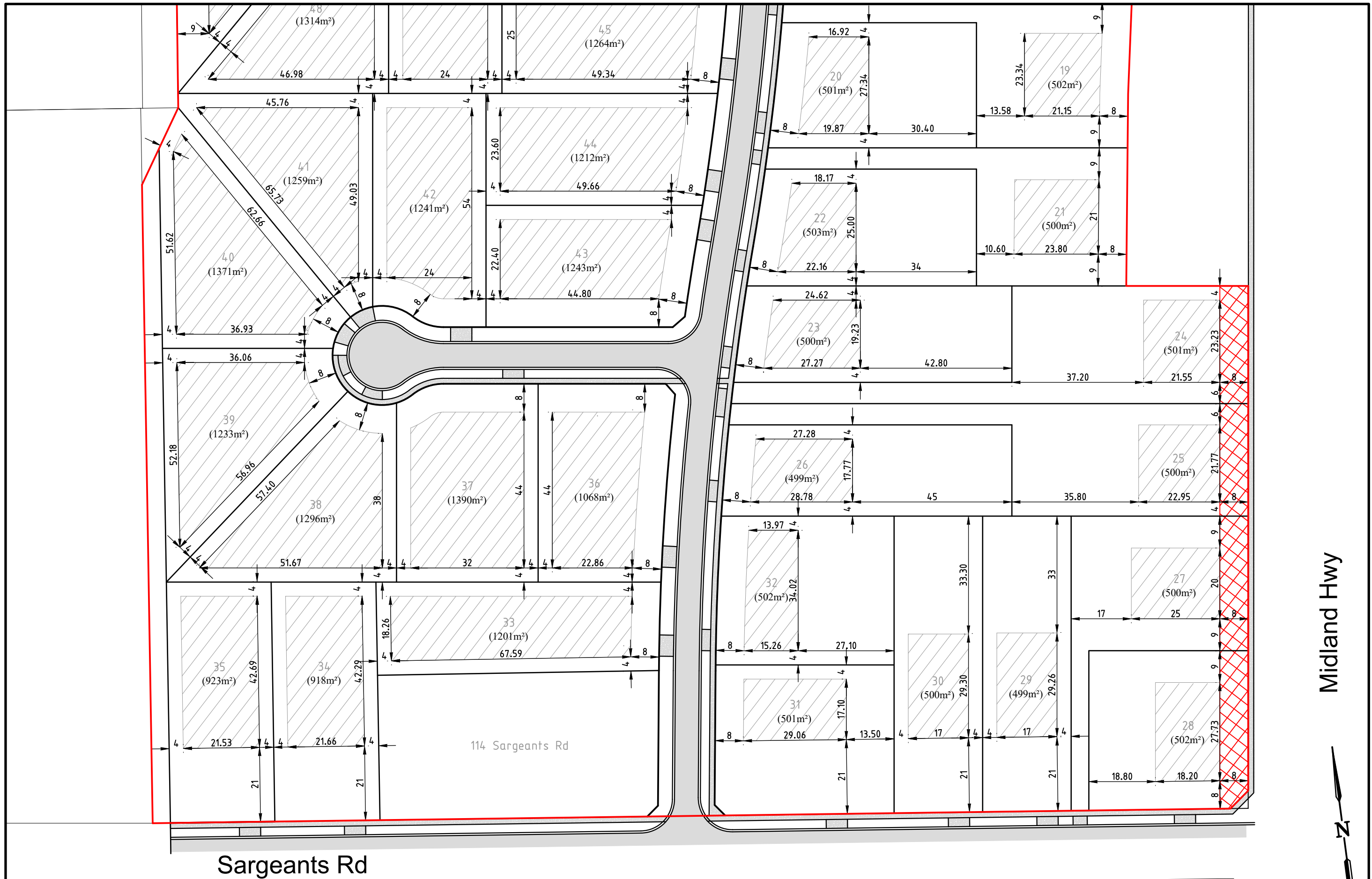
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15078 Dwelling Envelope Detail.dwg	LTO Ref: -	Council Ref: -	Water Auth. Ref: -	Our Ref: 15078	Version 10	Sheet 7 of 8
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City Of Greater Bendigo - Huntly
Aberdeen Huntly Pty Ltd
453 Midland Highway
Dwelling Envelope Plan 2



Midland Hwy



Sargeants Rd

114 Sargeants Rd

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9	Updated Layout	16/11/2020
8	Amended Dwelling Envelopes	15/09/2020
7	Overall Set Revisions	05/06/2020
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5	Footpath Single Sided Only	18/05/2020
4	Update Stage Boundaries	12/05/2020
Ver	Revision Description	Date

Designed	G.McCoomb	Checked	P.Bowe
	Nov 2020		Nov 2020
Approved			

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Scale (m)

H 1:1000

All lengths are in metres
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15078 Dwelling Envelope
Detail.dwg

LTO Ref: -

City Of Greater Bendigo - Huntly					
Aberdeen Huntly Pty Ltd					
453 Midland Highway					
Dwelling Envelope Plan 3					
Council Ref:	Water Auth. Ref:	Our Ref:	Version	Sheet	
-	-	15078	10	8 of 8	