Wallan South PSP
Landscape, Visual and Connectivity Assessment

Final Report

For the Victorian Planning Authority

May 7, 2021

Frank Hanson | Urban Design

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1. Introduction

The purpose of this report is to provide a Landscape Assessment to inform the Wallan South Precinct Structure Plan. The findings will promote a unified approach to landscape planning, design and management effectively linking recommendations for landscape character and visual amenity to existing planning policies to help influence future planning policy and subsequent development.

The Wallan South Precinct abuts the western and northern edge of Melbourne's Urban Growth Boundary (UGB) and is a complementary project to the completed and ongoing Beveridge PSPs for adjacent sites to the south and south east and to the existing Wallan township. An important objective of this report is to provide recommendations for urban design outcomes that enable sensitive integration with the adjacent rural landscape character to the west and existing and future urban development to the east and south

This report provides an overview of the existing landscape and visual character of the context of the study area and identifies and describes key landscape characteristics and views within the precinct itself.

A number of key objectives have been identified to facilitate the retention, preservation and enhancement of the landscape character of the Wallan South Precinct and establish a strong sense of place. These objectives include:

1. Help establish a sense of place by retaining and enhancing key features/characteristics of the landscape character types: Western Plains and Foothills
2. Enhance the amenity, habitat quality and recreational value of Strathaird and Taylors Creeks
3. Protect and enhance panoramic and long-distance views to significant landmarks, such as Green Hill, Mt Disappointment, Spring Hill Cone, Mt Fraser, the Old Sydney Road hillside and the Melbourne Skyline
4. Develop an open space network which helps protect and enhance the significant landscape elements of the specific character types. Provide linear landscape connections between character elements
5. Retain or protect significant heritage sites and associated precincts as an opportunity for interpretation and placemaking
6. Develop interface treatments which are sensitive to the prevailing edge condition.
7. Retain significant vegetation to help protect the landscape character of the precinct

A series of recommendations have been developed to guide the PSP in achieving these objectives.

1.1 Assumptions

A number of assumptions and limitations are associated with this assessment.

These include:

- The report is based on the information available for the project at the time of writing, December 2020
- The assessment process aims to describe the landscape factually. However, this type of assessment also requires a series of qualitative (subjective) judgements to be made about landscape character and visual qualities. The conclusions of this assessment combine both the objective measurements and professional

interpretations.

- The methodology has been based on findings of the "Wallan Structure Plan Landscape Assessment" (Tract 2014) with reference to "Visual Landscape Planning in Western Australia: A manual for evaluation, assessment, siting and design"
- "Landscape Character Types of Victoria – with frames of reference for scenic quality assessment" by Mike Leonard and Richard Hammond

2. Context

The study area comprises the Wallan South Precinct in the Shire of Mitchell. The precinct is located approximately 40 kilometres north-west of Melbourne's CBD and forms the western and southern boundary to the Wallan township.

Wallan South covers a total of 806 hectares and is bounded by Old Sydney Road to the West, Hume Freeway to the East and Wallan Township to the north/north east. Wallan South is expected to have a residential focus and supported by associated services and facilities such as town centres, schools, community centres and parks. Key landscape features in the Wallan South Precinct include the rural lane character of Old Sydney Road as well as the slopes throughout the western portion of the precinct.

Figure 1 - Regional Context Aerial
Source: VPA (2020)

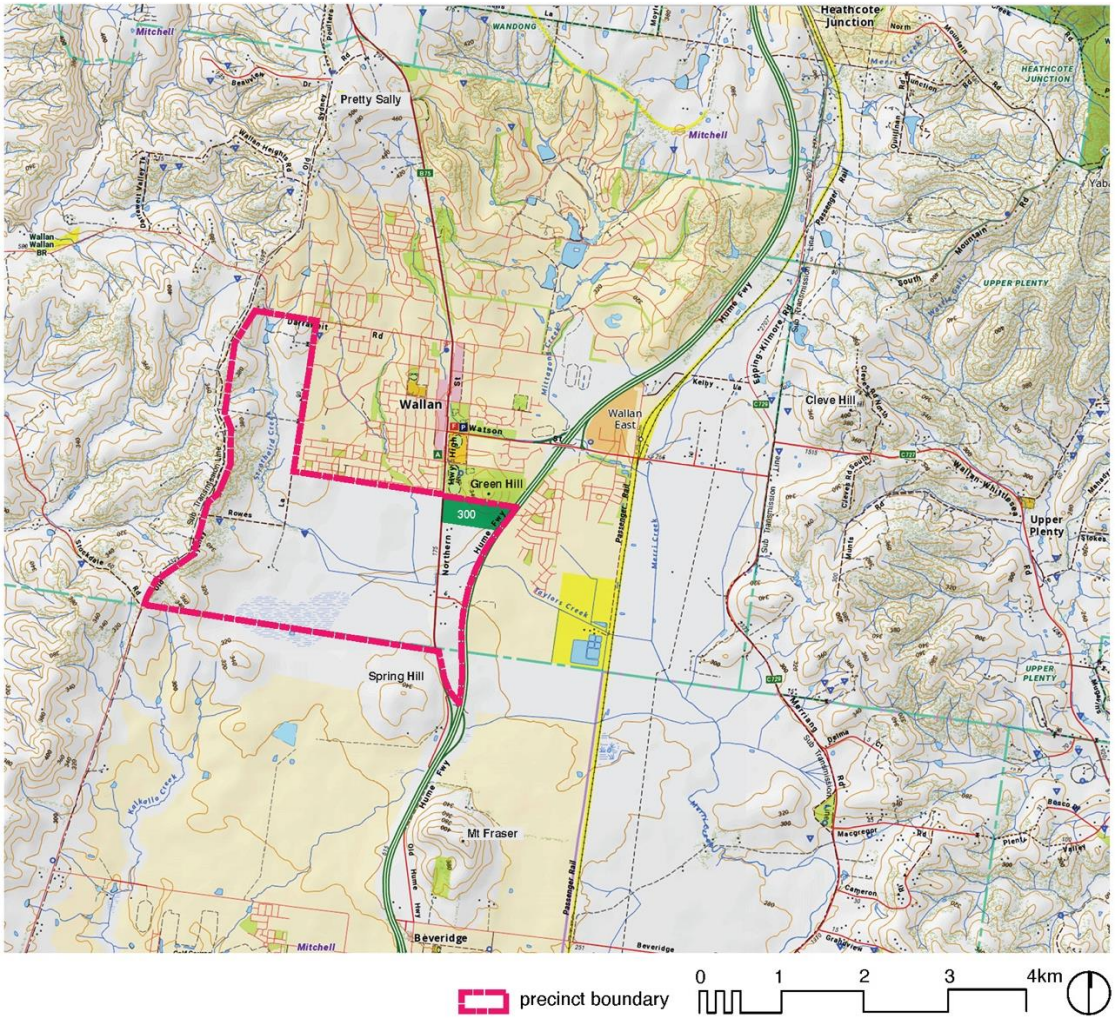


Figure 2 - Regional Context Map
Source: Emergency Management Victoria (2020)

As noted in the Wallan Structure Plan Landscape Assessment: "Wallan sits in a valley at the transition point between two distinct Landscape Character zones – the Western Plains and Foothills" (Tract 2014)

3. Methodology

It is noted that there is no legislated guidance or formalised methodology in Victoria for the assessment of landscape character. The assessment for this study has been based on the method for landscape visual assessment and planning outlined in 'Visual Landscape Planning in Western Australia: A manual for evaluation, assessment, siting and design', and other local and international visual assessment methodologies including the "Landscape Character Types of Victoria – with frames of reference for scenic quality assessment' (1984 Leonard and Hammond). It also includes an assessment of, and elements derived from the "Wallan Structure Plan Landscape Assessment" prepared in 2014 by Tract Consultants for the Shire of Mitchell.
The methodology used in the development of this report has also included:

- An assessment of the site's context
- A desktop review of relevant published documents in relation to landscape conditions and visual amenity at a state, regional and local level
- A site inspection and field analysis (from public viewing points and site inspection of Crystal Group property on March 27, 2021)

- An on-site photographic analysis of the precinct
- Preparation of existing landscape conditions plans
- A site analysis and descriptions of landscape characters in reference to "Wallan Structure Plan Landscape Assessment" (Tract 2014)
- A review of Scenic Quality as outlined in (Tract 2014)
- A review of key views and view lines
- A review of edge conditions
- A summary of opportunities and constraints
- Review of relevant local case studies which have successfully incorporated desired visual character elements into an urban/edge context
- Development of recommendations and objectives for requirements and guidelines for inclusion into the PSP to achieve the objectives.

4. Desktop Study

The desktop study included a review of relevant published documents in relation to landscape conditions and visual amenity at a state, regional and local level for the Study Area. This includes "Wallan Structure Plan Landscape Assessment" (Tract 2014) adopted by Mitchell Shire Council. It is noted that this study was undertaken six years ago and covered the area of the Wallan Structure Plan which includes both Wallan South and Wallan East PSP areas. This forms a basis for this study which draws from its findings and expands on them.

The following data sets (GIS layers provided by the VPA) were reviewed:

- Aerial Photographs
- Contours - 1 metre intervals
- Slope analysis
- Significant flora and fauna
- Areas of native vegetation
- Trees - layers from Arboricultural report

Road Networks

- Road reservations
- Road centrelines

Water Courses

- Creek centrelines
- Dams and waterbodies

Planning Controls

- Planning zones
- Planning overlays
- Heritage Areas
- Local Government Area (LGA) boundaries

Structure Plans and Adjacent Precinct Structure Plans including:

- Beveridge North West PSP
- Wallan Structure Plan

The Policies, Strategies and Reports reviewed for this report include:

- "Wallan Structure Plan Landscape Assessment" (Tract 2014)
- The Landscape and Visual Assessment by Planisphere, Final Report September 2014 prepared for the Metropolitan Planning Authority for Beveridge North West PSP
- North Growth Corridor Plan, Growth Area Authority (2012)
- Plan Melbourne 2017-2050, Victorian State Government (2017)
- Melbourne Strategic Assessment Program, Dept Environment Land Water and Planning, (2018)
- Biodiversity Conservation Strategy for Melbourne's Growth Corridors, Dept

Environment and Primary Industries (2013)
- Urban Design Guidelines for Victoria (2019)

5. Existing Conditions

The following section provides an overview of the existing conditions within the study area including land use, landform, recreation facilities, potential cultural heritage, vegetation, geology, hydrology, slope, views and landscape character.

5.1 Land Use

The precinct is predominately semi-rural comprising agricultural farmland, mainly for grazing and rural living. The land to the north is currently farmland adjoining the township along the creek and Old Sydney Road, the land to the north of Taylors Lane and east of Rowes Lane is developed and/or developing residential of the Wallan township. The land to the south of Taylors Lane is farmland to Hadfield Road reservation which forms the southern boundary of the precinct. South of this is the Beveridge North West PSP area. To the west of Old Sydney Road, the land is outside of the Melbourne Urban Growth Boundary (UGB).

View south/southwest towards the precinct from Green Hill

View east on Taylors Lane to Green Hill

5.2 Vegetation

The remnant vegetation within the hilly western part of the study area is consistent with Grassy Dry Forest and Herb-rich Foothill Forest Ecological Vegetation Classes, although the species composition appears modified within certain areas. The roadsides of both Old Sydney Road and parts of Rowes Lane contain this remnant vegetation. Patches of Swampy Riparian Woodland, Plains Grassy Wetland, Tall Marsh and Aquatic Herbland occur along creek lines and dams. Areas of Plains Grassland have been reported in the precinct. (WSC 2020)

Individual remnant trees are scattered through parts of the site. Species include Eucalyptus camaldulensis (River Red Gum), Eucalyptus dives (Broad-leaved Peppermint) Eucalyptus goniocalyx (Bundy), Eucalyptus melliodora (Yellow Box), Eucalyptus obliqua (Messmate) and Eucalyptus ovata (Swamp Gum). (WSC 2020)

Non-indigenous native trees species, as well as exotic species such as pine, cypress and elms are also present on the site.

Remnant vegetation on Rowes Lane (West Section)

Elm and poplar avenue on Northern Highway

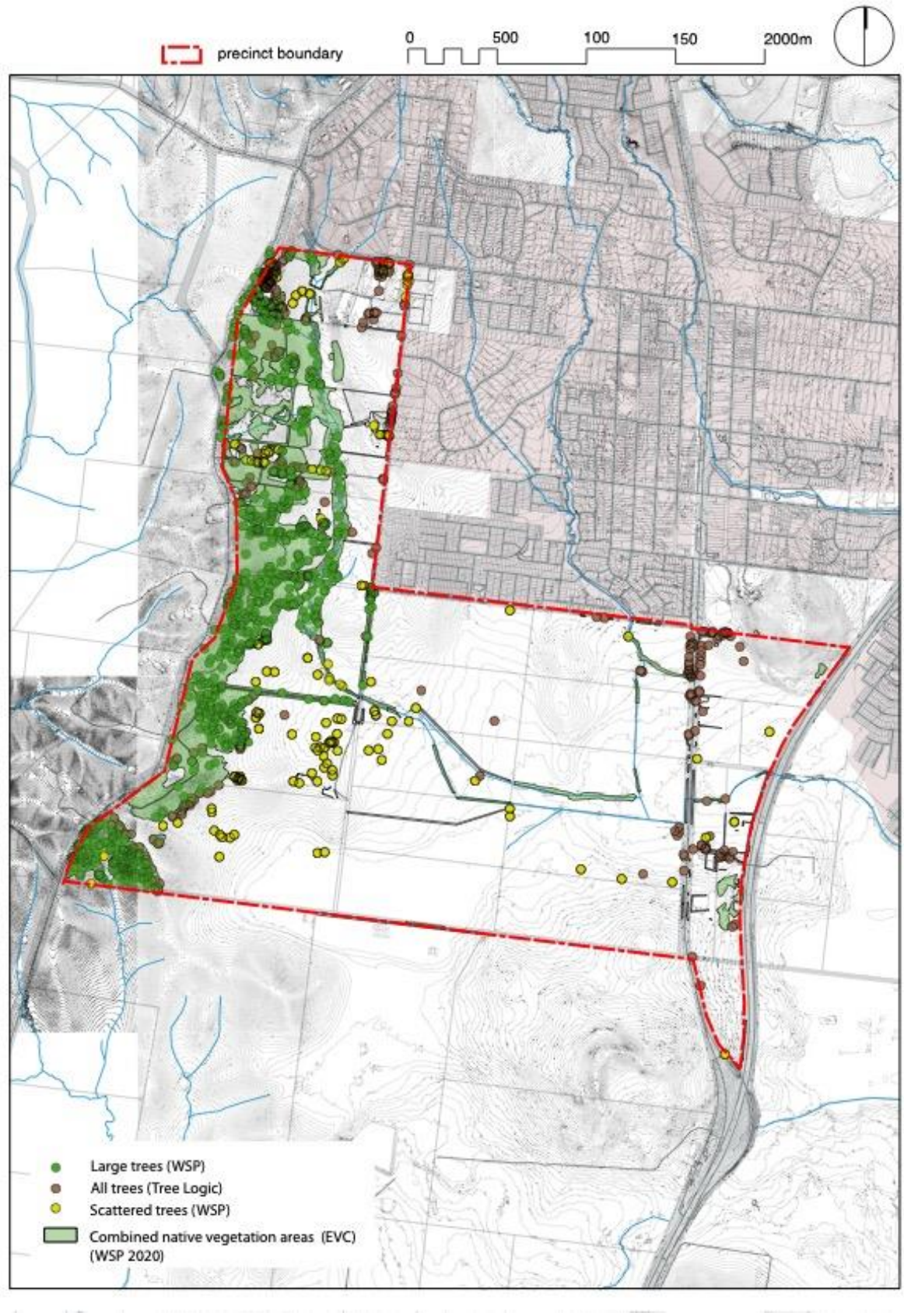


Figure 3 Vegetation
Source: VPA GIS layers incorporating WSP (2020) analysis and Tree Logic (2020) tree locations

5.3 Water Form

Strathaird Creek traverses the site from the north west to the south east with Taylors Creek joining it at the south east portion of the precinct in a relatively well-defined channel which discharges to two engineered channels. The confluence of Strathaird Creek and Taylors Creek is immediately upstream of the Northern Highway These creeks form part of the Merri Creek catchment, which forms part of the Yarra River catchment. Strathaird Creek is an ephemeral creek for much of the alignment.
There are a number of farm dams throughout the precinct. There is also an extensive network of drains and retention basins in and around the precinct
There is an area in the southern portion of the PSP known historically as Hanna Swamp. It is an area investigated under the Beveridge North West PSP preparation for its potential constraints, values and impacts. During the additional site visit, parts of this area located within the Wallan South PSP have been examined. This part of Hanna Swamp does not appear to be in its natural state at present as it has been drained.

Strathaird Creek from Darraweit Road

Taylors Creek north of Taylors Lane

Taylors Creek south of Taylors Lane

Strathaird Creek from Rowes Lane

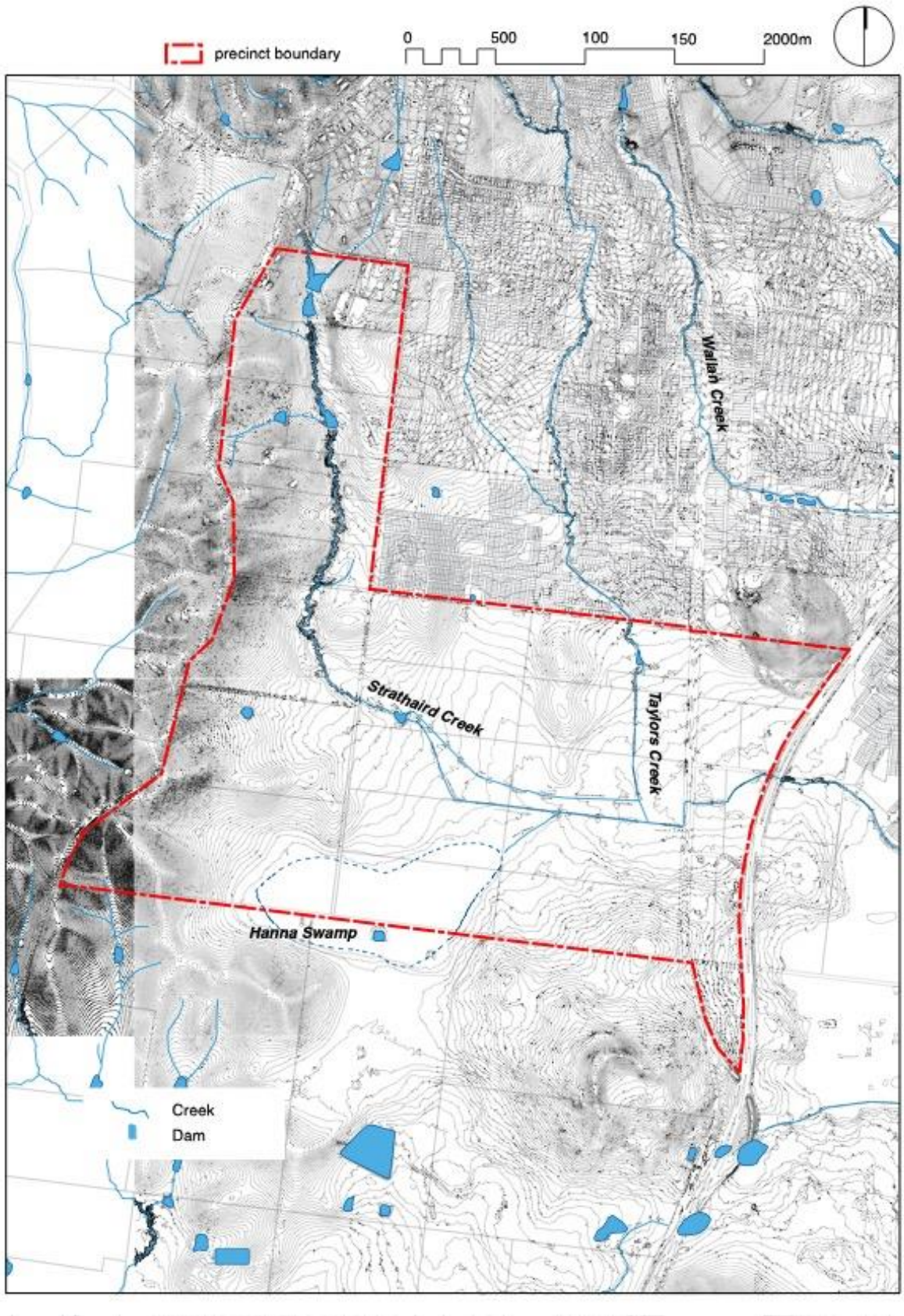


Figure 4 Water Form
Source: VPA GIS layers (2020)

5.4 Overlays

A number of overlays apply to the precinct including the Vegetation Protection Overlay (VPO), Bushfire Management Overlay (BMO), Erosion Management Overlay (EMO), Land Subject to Inundation (LSIO) and Flooding Overlay (FO). The BMO and VPO present a constraint to development on the western portion of the precinct. The area covered by the LSIO and FO combined, presents both an opportunity for a visually enhanced waterway and a constraint to development which can be potentially mitigated through engineering during development.

Flood event in April 2020 as viewed from Green Hill (Source: Mitchell Shire Council)

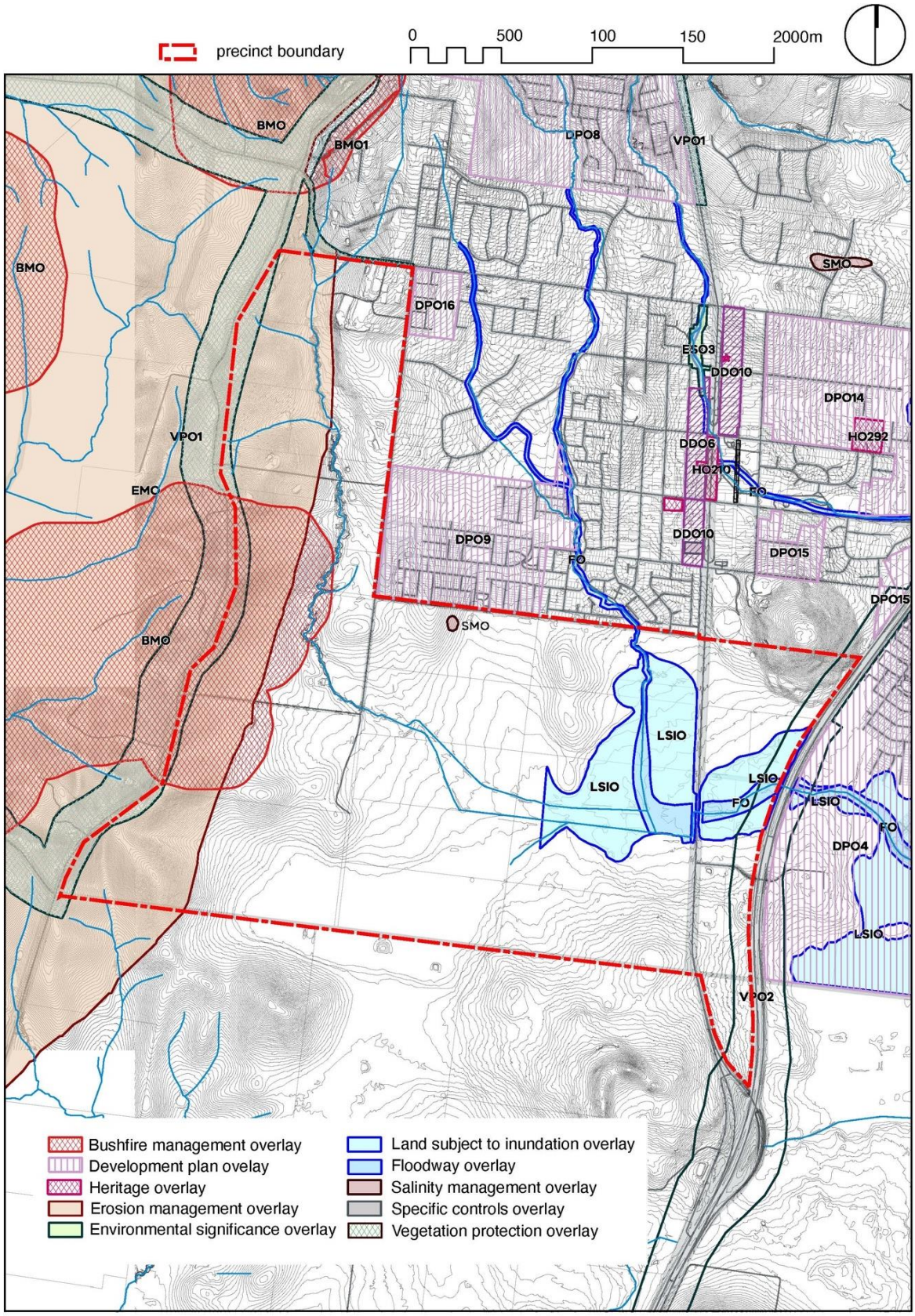


Figure 5 Overlays
Source: VPA GIS layers (2020) including DELWP overlays

5.5 Geology

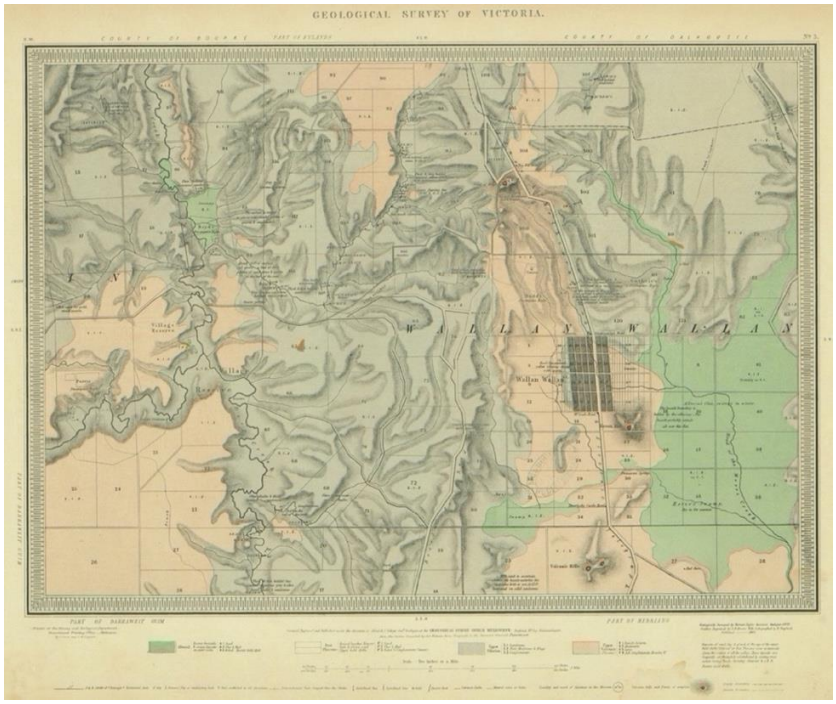


Figure 6 Historic Geological Map
Source: Geological Survey of Victoria. (1862). [Parts of parishes of Wallan Wallan, Merriang, Darraweit Guim, and Bylands]

The precinct lies in a region dominated by a low-elevation lava plain and a series of volcanic eruption points that extends from Craigieburn to Wallan including Mount Ridley, Hayes Hill, Bald Hill, Mount Fraser, Springs Hill and Green Hill. Spring Hill lies immediately to the south of the precinct while Green Hill lies in the north-east on the boundary of the precinct. Mount Fraser (435 metres ASL) is a dominant feature to the south-east of the site, rising to a height of 125 metres above the basalt lava plain. Mount Disappointment, an 800 metre ASL peak within the Great Dividing Range lies about 13 kilometres away to the east. In the western portion of the precinct the land rises up to a ridgeline on Old Sydney Road.

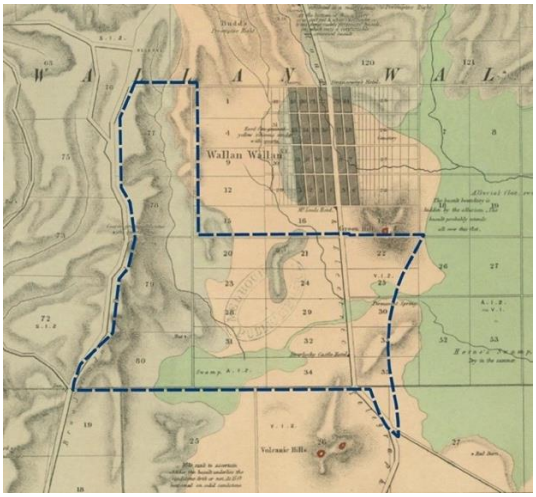


Figure 7 Historic Geological Map with current PSP boundary
Source: Geological Survey of Victoria. (1862).

5.6 Slope Analysis

Figure 7 provides an analysis of the slope of the site. The map illustrates that significant portion of the site is slightly undulating with a slope of less than 5% in the eastern portion of the site. There are a number of prominent highpoints in the form of volcanic cones on the periphery of the precinct – Green Hill to the northeast and Spring Hill Cone to the southeast. The west and southwestern portion of the site features steeper sloping areas over 15 %.

Along the Old Sydney Road interface, areas of slope exceed 20%. The portion of the precinct north of Taylors Lane and west of Rowes Lane has undulating topography incised by Strathaird Creek which has sloping banks which exceed 20% in some sections. We have grouped areas of slopes of 15 % and higher together to identify areas which will require further analysis through a features survey at the design development stage. Land over 20% slope is generally not appropriate for development in this context without significant design and siting controls.

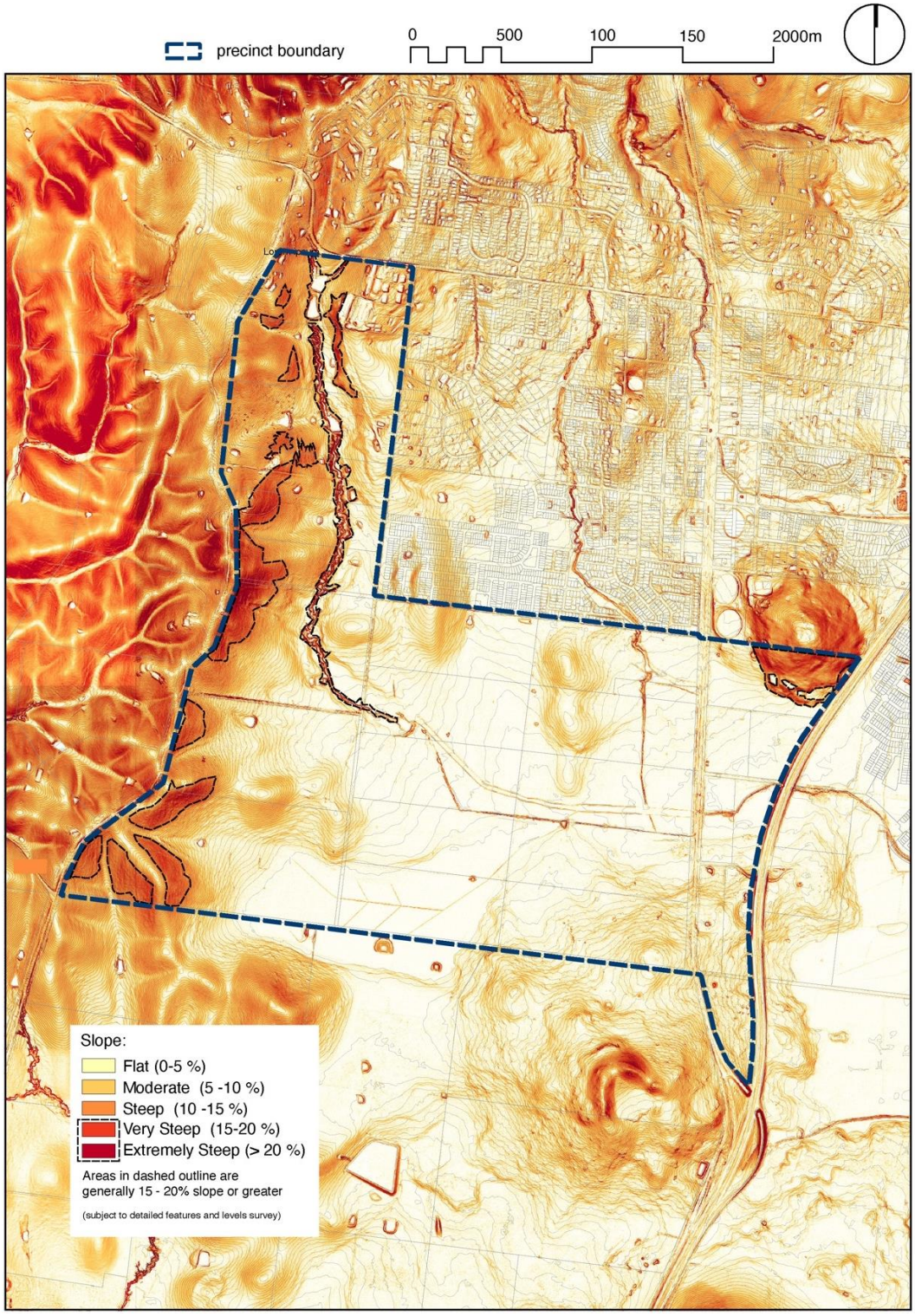


Figure 8 Slope Analysis
Source: VPA GIS layers (2020)

5.7 Vertical Infrastructure Elements

There are two concrete road overpasses on the alignment of the Hume Freeway. One is the Northern Highway northbound flyover at the southern gateway to the site and the other is the Macsfield Road overpass to the north.

Overhead powerlines are present in the following locations:

- north side of Taylors Lane between the Northern Highway and Taylors Creek
- east side of the Northern Highway, crossing to the west side near the Hume Freeway interchange
- along Rowes Lane between Taylors Road and Daraweit Road
- north side of Darraweit Road
- along Old Sydney Road

Streetlights are present in the following locations:

- along the south side of Taylors Lane at road intersections
- on the west side of the Northern Highway at the approach to the Taylors Lane intersection
- at the intersection of Rowes lane and Darraweit Road

Traffic lights are present at the intersection of the Northern Highway and Taylors Lane.

Northern Highway overpass from Hume Freeway

Macsfield Road overpass from Hume Freeway

5.8 Significant Buildings

The ruins of the Inverlochy Castle Hotel, located at 175 Northern Highway, is included in the Victorian Heritage Inventory. Built by Angus Cameron in 1855, it was an inn and Cobb and Co staging post south of the ascent up Pretty Sally Hill.

The Heritage Inventory Description is as follows:
"Ruins of Inverlochy Castle Hotel and iron sheds and timber stock-run.
Heritage Inventory Significance: Moderate-high scientific, local cultural. The site represents a significant phase in the development of Central Victoria, and of Melbourne, as it was a stopping point on the Sydney-Melbourne route and on the gold-fields route. Also may have sub-surface deposits.
Heritage Inventory Key Components: Bluestone walls; redbrick scatter (Hoffman and wire cut); 10m mound, contains bluestones; trough, corrugate iron shearing shed (in poor condition); domestic scatter; water tank; and bluestone and red brick lined well full of old and new debris."

Ruins of Inverlochy Castle Hotel

6. Site Survey

The site survey was undertaken on November 13, 2020 by two Registered Landscape Architects who viewed the Study Area from all accessible roads and other public viewpoints. An additional site inspection of the Crystal Group properties was undertaken on March 27, 2021.

The site survey was undertaken to:

- Verify the Landscape Character described by the “Wallan Structure Plan Landscape Assessment” (Tract 2014)
- Verify the desktop study
- Photographically record the Study Area
- Record landscape areas and/or views/view corridors of value to the area
- Observe and document how the landscape may be viewed
- Define (verify) the Landscape Character Units of the Tract study

7. Landscape Character Units

“Wallan Structure Plan Landscape Assessment” (Tract 2014) notes that:
“*Landscape character types are areas that possess consistent visual features, making comparative quality assessments possible*.”
Visual quality, as noted in the “Landscape Character Types of Victoria – with frames of

reference for scenic quality assessment' by Mike Leonard and Richard Hammond, is linked to the following features:

- *Degree of uniqueness and naturalness*
- *Diversity in topography*
- *Variety of vegetation types and patterns*

It should be noted that not all of these qualities are applicable to Wallan."

The Landscape Character Units identified in the study include:

Western Plains:

- Flat plains under 280m ASL punctuated at intervals by volcanic scoria cones and occasional stony ridges
- No history of widespread significant forests, except on the stony rises.
- Typically waterbodies include deep sub-circular lakes
- Creeks tend to be shallow and ephemeral, sitting in deeply incised creek beds
- This character type is typically home to small scattered farming communities, with widespread grazing and crop growing having almost totally altered the landscape
- Typical landmarks of this character are the steep, symmetrical volcanic cones.

Foothills:

- Gently undulating hills between 300-920m ASL with north-south corridors between the hills.
- Typically covered by stringybark forest in the form of woodland, closed forests or tall open forest.
- Typical waterbodies include streams and minor reservoirs.
- Settlement is sparse, with grazing, agricultural and having distributed the landscape to varying degrees.
- Typical landmarks of this character type are the long ridgelines and isolated peaks.

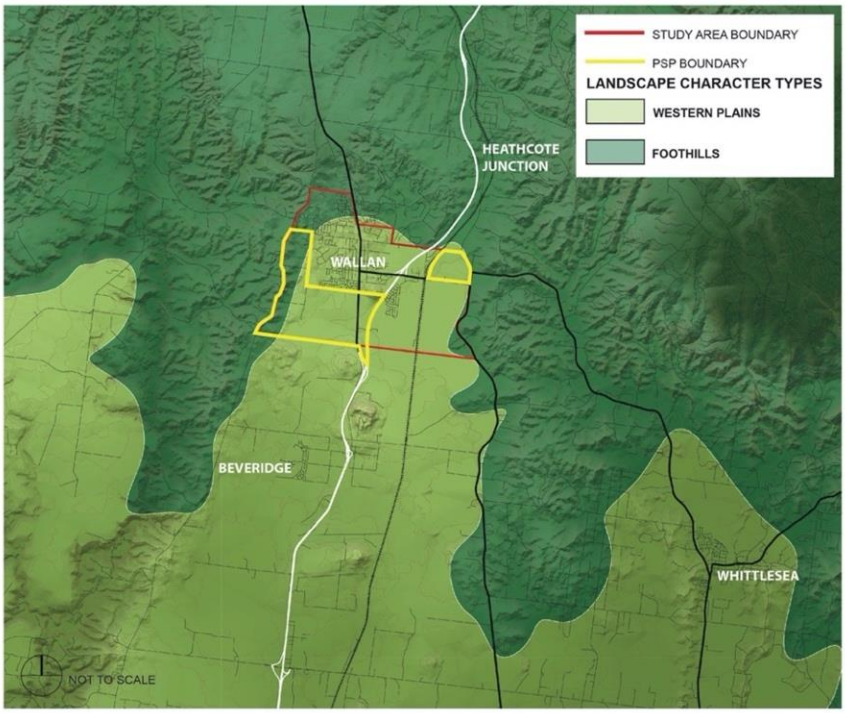


Figure 9 Regional Landscape Character Types *(Tract 2014)*

In our review of the "Wallan Structure Plan Landscape Assessment" (Tract 2014) we note that Wallan South PSP is located in the Foothills and Western Plains Landscape Character Units.

8. Scenic Quality Classification

"Wallan Structure Plan Landscape Assessment" (Tract 2014) notes that:
"Landscape character types are areas that possess consistent visual features, making comparative quality assessments possible. Visual quality, as noted in the "Landscape Character Types of Victoria – with frames of reference for scenic quality assessment' by Mike Leonard and Richard Hammond, is linked to the following features:

- *Degree of uniqueness and naturalness*
- *Diversity in topography*
- *Variety of vegetation types and patterns"*

(It should be noted that not all of these qualities are applicable to Wallan.)

The study describes the characteristics of High, Moderate and Low scenic quality as follows:

"*High quality*

Topography

High quality topography possesses isolated or distinctive features which become focal points in the local area. These may include:

- *Unique peaks and ridgelines with unusual or characteristic form and colour.*
- *Volcanic cones*
- *Well defined valleys and deep gorges.*
- *Major rock faces and outcroppings*

Vegetation

Significant vegetation exhibits high degrees of variation, such as:

- *Strongly defined patterns including mixes of species & habitat, openings and dense areas*
- *Distinctive stands with unusual form, colour or texture.*
- *Dramatic seasonal colour.*

Waterbodies

High quality waterbodies are usually permanent in nature and may include,

- *Significant lakes, reservoirs and marshlands*
- *Major rivers and streams*

Agricultural and Cultural Landscapes

High quality agricultural and cultural landscapes may exhibit the following characteristics:

- *Contrasting land uses forming a distinctive pattern or patchwork*
- *Naturally appearing transitions to adjacent natural landscapes*
- *Unique rural architecture that references local landscapes*
- *Distinctive roadside vegetation or windrows*

Moderate quality

Topography

Moderate quality topography contains landforms that are evident but not visually prominent. These may include:

- *Rounded hills and ridges*
- *Smaller volcanic cones*
- *Minor rock outcroppings*
- *Valleys that are not strongly defined*

Vegetation

Vegetation of this quality is usually commonly found in the surrounding landscape. However it may offer some visual diversity in the form of:

- *natural openings and/or scattered forest*
- *patterns formed by species mix*

Waterbodies

Moderate quality waterbodies are usually intermittent in nature, and may include:

- *Minor lakes, reservoirs and marshlands*

- *Smaller streams and rivers*

Agricultural and Cultural Landscapes

Moderate quality modified landscapes contain a combination of the following characteristics:
- *Patterns evident but not immediately distinct; may only be distinct over large areas*
- *A combination of soft and rigid transitions to adjacent land*
- *Rural architecture which has some reference to local conditions*
- *Roadside vegetation that is common throughout the character type*
- *Naturally appearing transitions to adjacent natural landscapes*
- *Unique rural architecture that references local landscapes*
- *Distinctive roadside vegetation or windrows*

Low quality

Topography

Low quality topography is usually indistinct and may include the follow characteristics:
- *Large expanses of unbroken landform*
- *Lack of spatial definition*
- *Few landmarks*

Vegetation

The vegetation of the quality rating has little variation, and can be defined by the following:
- *Extensive areas of similar vegetation*
- *Little pattern or variation in colour and texture*

Waterbodies

Landscapes of this quality rating have no present waterbodies.

Agricultural and Cultural Landscapes

Low quality modified landscapes include:
- *Large stretches of similar vegetation with no variation*
- *Sharp formal transitions to adjacent natural landscapes*
- *Local architecture with no reference to the nearby area*
- *Long sections of road with no adjacent vegetation" (Tract 2014)*

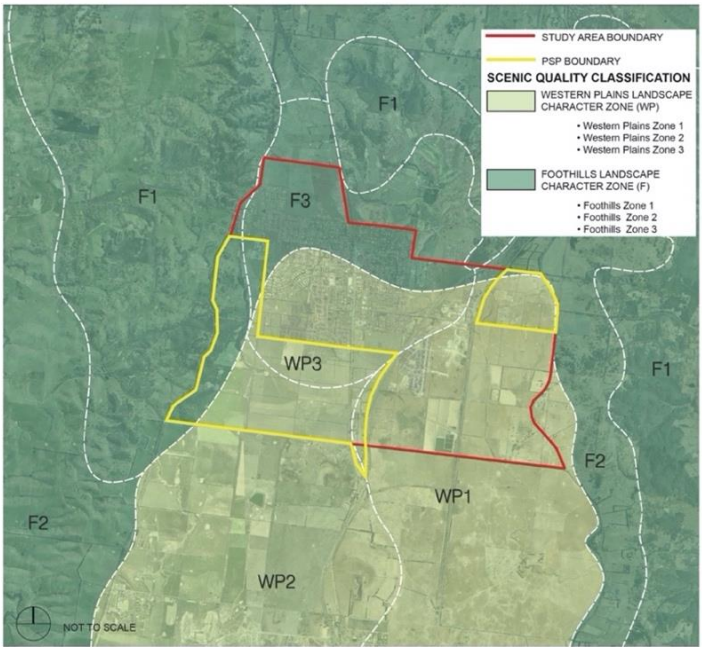


Figure 10 Scenic Quality Classification *(Tract 2014)*

"Based on the landscape character types and scenic quality classifications noted in the "Landscape Character Types of Victoria – with frames of reference for scenic quality assessment' by Mike Leonard and Richard Hammond" … the landscape of Wallan has

been assessed to determine key landscape features, scenic quality [classifications] and sensitivity to change…" (Tract 2014)

The above are highlighted in the following table:

Landscape Character Zone	Key Landscape features	Scenic quality classification	Sensitivity to change
F1 - Foothills zone 1	▪ Areas of visually prominent undulating topography ▪ Visually prominent treed ridgelines ▪ Extensive remnant woodland along Old Sydney Road featuring only low to moderate clearing. ▪ Streams and minor water bodies surrounded by native habitat, including the upper reaches of the Taylor's Creek ▪ High scenic value within the local area	▪ Moderate	▪ High
F3- Foothills zone 3	▪ Areas of moderate topography extensively altered by settlement ▪ Few notable avenues or other scenic cultural features ▪ Rigid transitions to the adjacent natural landscapes ▪ Local architecture is not regionally distinctive	▪ Low	▪ Low - Moderate
WP1- Western Plains Zone 1	▪ Flat area with few distinguishing features and little scenic quality ▪ Flood prone marshland area ▪ Include Merri Creek, a watercourse of regional significance. ▪ Limited scenic value provided by scattered agricultural windrows	▪ Low	▪ Low - Moderate
WP2 - Wester Plains Zone 2	▪ Predominantly low rolling terrain punctuated with visually prominent volcanic cones forming local landmarks ▪ Covered by large expanses of grassland with little or no varying texture ▪ Isolated minor waterbodies but few watercourses ▪ Few scenic agricultural features	▪ Moderate	▪ Low - Moderate
WP3 - Western Plains Zone 3	▪ Areas of flat terrain extensively altered by development ▪ Punctuated by one smaller volcanic cone ▪ Includes several watercourses with little or no native vegetation buffer	▪ Low	▪ Low - Moderate

(Tract 2014)

8.1 Scenic Quality implications for PSP preparation

In our review of the "Wallan Structure Plan Landscape Assessment" (Tract 2014) we note that it was prepared in 2014 and covered an area beyond the confines of the Wallan South PSP boundaries including the township of Wallan. The above table describes how the PSP has landscape character zones that have moderate to low scenic quality classification overall but in, for instance the Foothills Zone 1 has localised areas of high scenic quality. Our observations suggest this higher scenic quality is associated with the wooded hills of the Old Sydney Road area. As such this area should be protected as an important landscape backdrop element to the PSP area. This area is discussed further in:

- 10 Edge and Interface Conditions
- 11 Opportunities and Constraints
- 13 Objectives and Recommendations

9. Key Views and View Lines and Patterns of Viewing

Key viewpoint locations were identified, recorded and photographs were viewed online and screen captures were made. Viewpoints were chosen to represent a range of typical views possible from that locality. In addition, the viewpoints were selected to:

- Represent views of particular landscape and /or visual feature/s of importance,
- Represent views from key visual receptors (existing residents, community facilities and road users).
- Locations of major entries to the precinct
- High points
- Others

An evaluation of key viewing locations and view lines was undertaken to understand how the visual landscape character is viewed and experienced by residents both current and

future, motorists, cyclists and pedestrians. These are shown in Appendix One – Photographic Inventory.

10. Edge and Interface Conditions

The Wallan South Precinct forms the western and southern edge of the Wallan township growth front and is bordered by the western edge of Melbourne's Urban Growth Boundary. How this interface or 'edge' is treated will be an important consideration for the planning and urban design of this precinct. To minimise the impact of new development on the existing rural landscape to the west it will be important to maintain a softer transitional character along the urban- rural interfaces. A number of important interfaces have been identified including:

- Old Sydney Road interface
- Sight lines to adjacent housing
- Rowes Lane
- Taylors Lane
- Northern Highway
- Wallan Recreation Reserve and Green Hill
- The interface to the Beveridge NW PSP and the non-urban break described in the Corridor Plan
- East-west access into and out of the site.

Suburban edge to precinct on Rowes Lane

Forested edge to precinct on Rowes Lane

Existing semi-rural edge to precinct on Northern Highway

Forested edge to precinct on Old Sydney Road

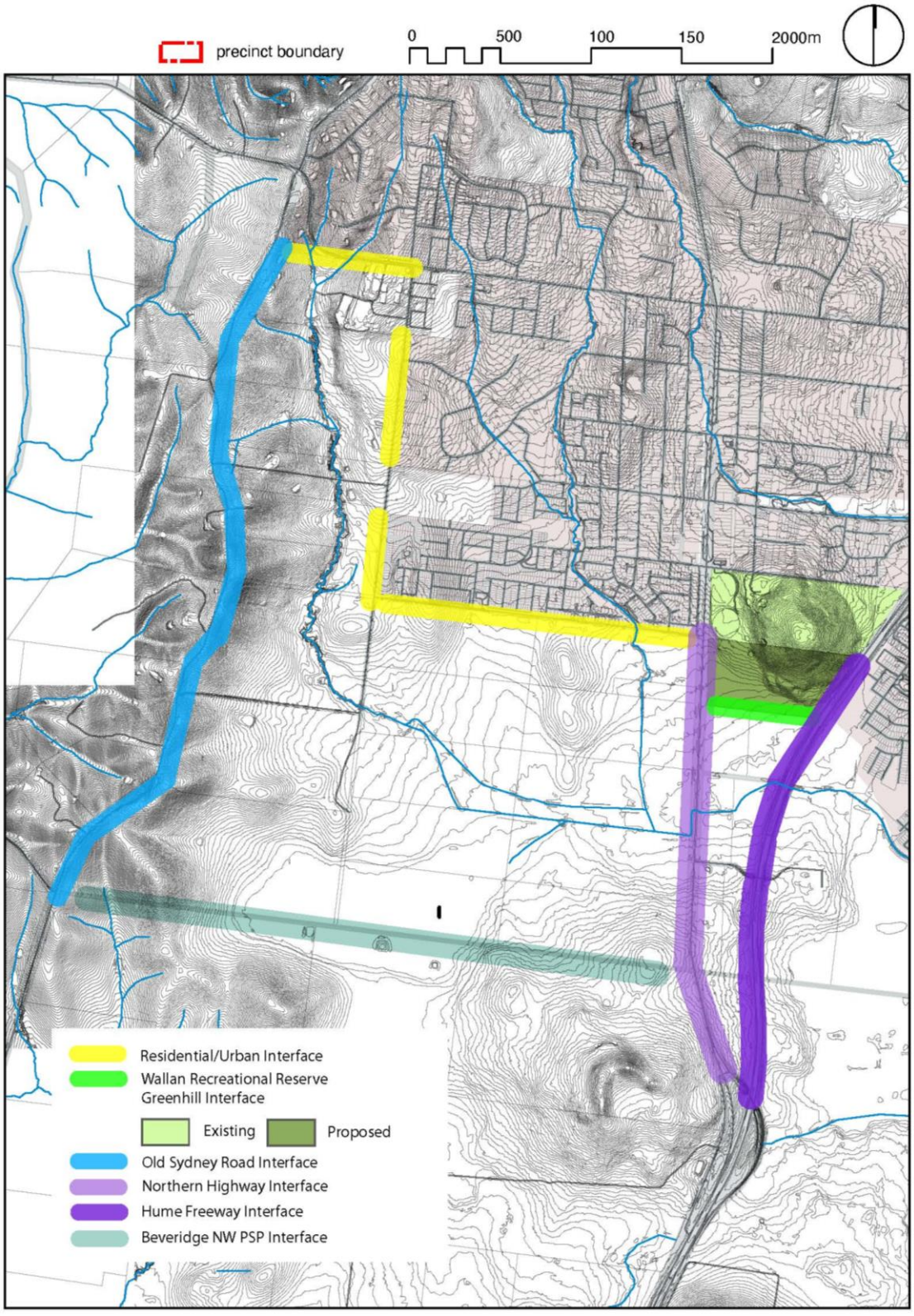


Figure 11 – Edge and Interface Conditions
Source: VPA GIS layers (2020) and Study Team Analysis

A series of recommendations and suggestions have been developed in section 13 Objectives and Recommendations for potential incorporation into the Wallan South PSP to inform appropriate planning controls and ensure the future urban design for these areas is sensitive to and integrates with, the adjacent rural landscape and the existing Wallan township.

11. Opportunities and Constraints

11.1 Opportunities

The following opportunities could be considered in the development of recommendations for the PSP.

- To create opportunities for the natural features of the landscape to be easily understood and "read" by future residents and visitors through careful design and siting of development
- To retain and protect existing views within the precinct toward the hilltops along the western edge of the precinct, Greenhill Reserve and the creeks as well as views from hilltops toward the precinct
- To retain and protect existing distant view lines of key landscape elements including Spring Hill Cone (south within the BNW PSP), Mount Fraser, Mt Disappointment, Old Sydney Road and the Great Dividing Range.
- To retain and protect existing significant trees (including those identified in the arborist's assessment) by incorporating these trees into open space, road reserves, widened road medians or easements where possible - subject to an arborist's assessment
- To link pockets of retained trees and other significant landscape elements with existing conservation areas in west of the site to provide greater connectivity for fauna and flora and improve the conservation value of the area
- To enhance the amenity, habitat quality and recreational value of Strathaird Creek and Taylors Creek with planting and re-vegetation with native species - The LSIO and FO combined, present an opportunity for a visually enhanced waterway as part of a linear open space network
- To use necessary water retention basins and channels as urban greening opportunities and to create a linear open space networks that may include Strathaird Creek, Taylors Creek and other potential green and blue infrastructure
- To retain and redevelop existing buildings associated with past uses of the site such as the Inverlochy Castle Hotel to contribute to the landscape character of the site and provide unique place-making opportunities
- To maintain and enhance the east-west view line along Taylors Lane
- To consider the location of major link roads and or open spaces along ridge lines to preserve long views and significant outlooks subject to ESD requirements
- To locate local parks on ridgelines and highpoints to create local destinations and viewing opportunities

11.2 Constraints

The following constraints could be considered in the development of recommendations in the PSP.

- Designated conservation areas and areas of required vegetation protections, while a constraint to development, can provide an opportunity to preserve the natural character of the site and provide placemaking opportunities

- Steep slopes. Development on steep slopes generally requires benching or construction of large retaining walls, increasing the bulk and prominence of housing. Alternatively, split level dwellings can overcome this but at a greater cost of construction

- A number of overlays apply to the precinct including the Vegetation Protection Overlay, Bushfire Management Overlay (BMO), Erosion Management Overlay (EMO), Land Subject to Inundation (LSIO) and Flooding Overlay (FO). The BMO and VPO present a constraint to development on the western portion of the precinct. The LSIO and FO combined with the very low topographic relief of the eastern part of the precinct present a constraint to development.

- Natural drainage lines can be a constraint to development due to the need to limit vehicle crossing points to ensure continuity and habitat value and cost of construction

- Viewing opportunities; consideration should be given to the creation of view lines to prominent hill tops, volcanic cones and other local landmarks through the location of roads, shared paths and open space

- Providing appropriate interface to existing urban development along key edges and interface

- Providing treatments to overcome the negative impacts of the Hume Freeway and Northern Highway – including potential wall treatments on the freeway and allowance for sufficient vegetated setbacks to allow visual softening of freeway walls and the highway

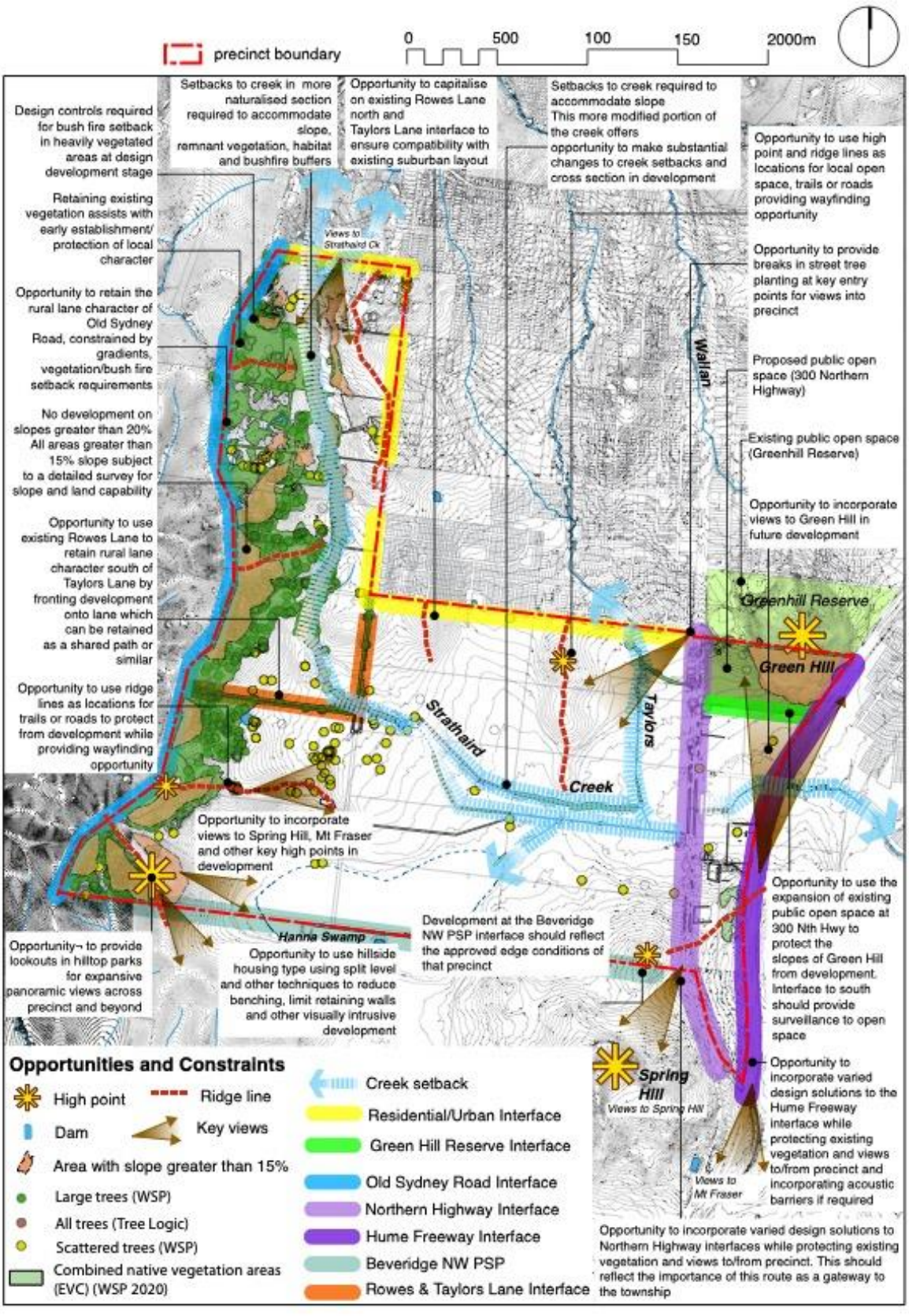


Figure 12 – Opportunities and Constraints
Source: VPA GIS layers (2020) and Study Team Analysis

12. Relevant Case Studies

Several relevant local case studies were reviewed and summarised that demonstrate incorporation of desired landscape character elements within an urban context that will assist the preparation of the future Precinct Structure Plan. These have been sourced from

- The Wallan Structure Plan Landscape Assessment" (Tract 2014)
- The Landscape and Visual Assessment by Planisphere, Final Report September 2014 prepared for the Metropolitan Planning Authority for Beveridge North West PSP
- The Wollert Visual Character Assessment City of Whittlesea 2014 for the Metropolitan Planning Authority
- Craigieburn West landscape Character Assessment, (Spire 2019)

They have also been sourced from this study's authors professional experience on sites across the northern metropolitan region.

<table>
<tr><th colspan="2">Retention of existing trees</th></tr>
<tr><td>  </td><td> 
(Planisphere 2014)</td></tr>
<tr><td>Tree in Road Reserve</td><td>Tree protection zone</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Lookout on Hill Top</td><td>Aerial of portion of precinct</td></tr>
<tr><td colspan="2">Location – Tree Retention Lyndarum Estate, Epping North</td></tr>
<tr><td colspan="2">Lyndarum Estate in Epping shows how significant existing trees have been integrated into a new residential development. 25% of the estate is dedicated to open space, because of the presence of a significant number of established River Red Gums which have been retained. The preservation of the trees has been further enhanced by the positioning of linear open spaces which include constructed wetlands and powerline easements used to enhance ecological connectivity. The subdivision layout has responded to the location of major trees. Techniques include local roads designed around larger trees. Streets have been aligned along view lines towards major trees, which act as landmarks. Fencing is minimised around trees and dwellings have been oriented to positively face open space.</td></tr>
<tr><td colspan="2">Comments
Bush Fire standards have been strengthened since Lyndarum was developed and must be considered more stringently.</td></tr>
</table>

Integration of indigenous vegetation/bush fire interface

(Whittlesea 2014)

Path

(Whittlesea 2014)

Stone wall

Paper Road interface

Post and wire fence (Whittlesea 2014)

Aerial of precinct

Location

Epping North Conservation Reserve, Lyndarum Drive , Epping North

This case study comprises a large (14 ha) conservation reserve zoned Rural Conservation Zone set aside to protect a large stand of remnant River Red Gums and understorey. It also features several stony rises and drystone walls.
A balance between conservation and development has been achieved by allowing an irregular development edge including a residential pocket surrounded by the reserve.
Pedestrian paths, both formally paved and informal gravel tracks have been provided to maintain pedestrian connectivity
The reserve provides a pleasant outlook to neighbouring dwellings. Two medium density housing sites have been created where development for standard lots was limited.

Comments

A detailed survey revealed areas of significance and where development could be achieved. A perimeter road provides a fire break and separation. It is noted that there have been maintenance issues associated with this treatment. This treatment was developed prior to the Black Saturday Bush Fires of 2009 and the development of the “Design Guidelines Settlement Planning at the Bushfire Interface” Department of Environment, Land, Water and Planning July 2020, relevant sections of which are summarized in Appendix Two.

Restoration of creek/wetlands

(Whittlesea 2014)

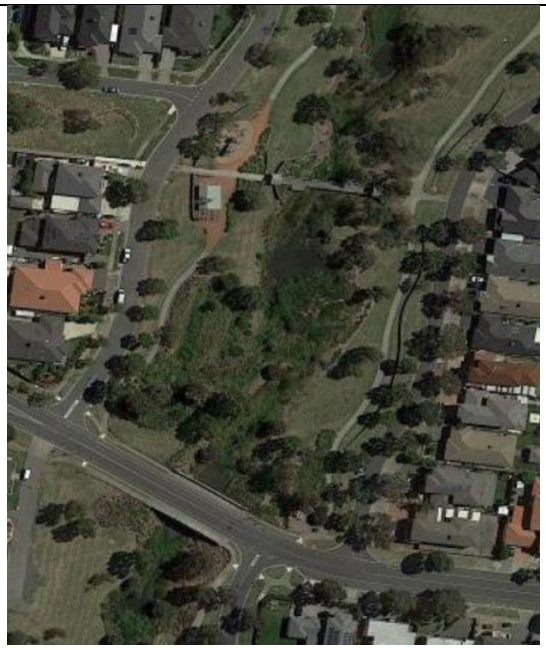
Findon Creek has been embellished in this location, forming wetlands and a technical drainage function.

(Whittlesea 2014)

A pedestrian bridge has been provided across the creek in this location.

Houses front the creek separated by local roads.

A network of shared paths is located along both sides of the creek maximising connectivity.



Aerial of precinct

Location
Findon Creek, Hayston Boulevard , Epping North

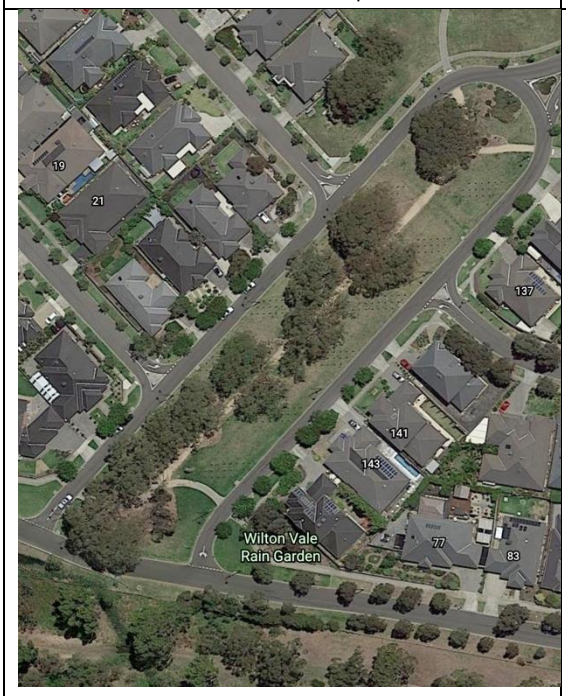
Findon Creek has been embellished at this point by the creation of wetlands and the addition of a BBQ shelter and bridge. River Red Gums have been retained which add to the amenity created around the restored creek.

Comments
A restored creek increases habitat value, provides active and passive recreation and linear movement network and enhanced water quality and urban runoff control. Dwellings and footpaths provide active surveillance to creek.

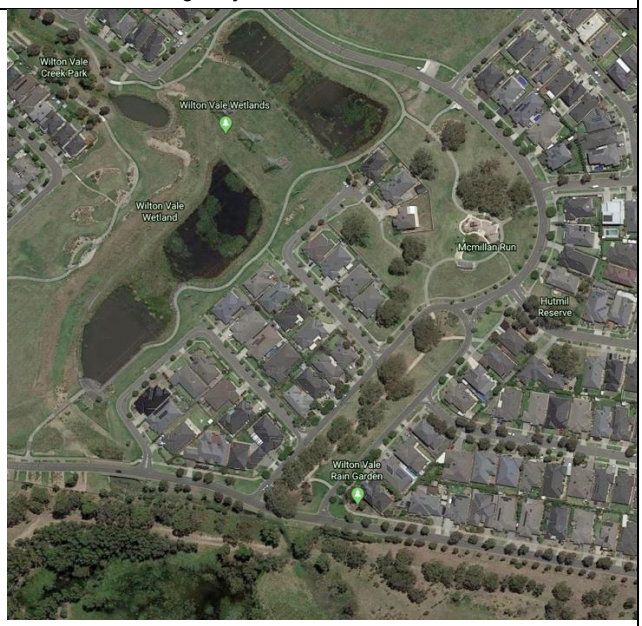
Integration of former farm drive as linear open space

Path in linear reserve connects two parks

Southbound carriageway



Former farm driveway trees are retained –
one-way carriageway either side



Aerial of precinct

Location Macmillan Rise Reserve, Hawkstowe Parade , South Morang

This case study comprises a former farm driveway repurposed as a pathway which has trees retained either side with one-way carriageway either side connecting Plenty Gorge to a park to the north
The reserve provides a pleasant outlook to facing dwellings which provide active surveillance.

Comments
A successful integration of established trees and existing drive as linear open space – great placemaking opportunity. Rouse Lane south could be developed in a similar manner.

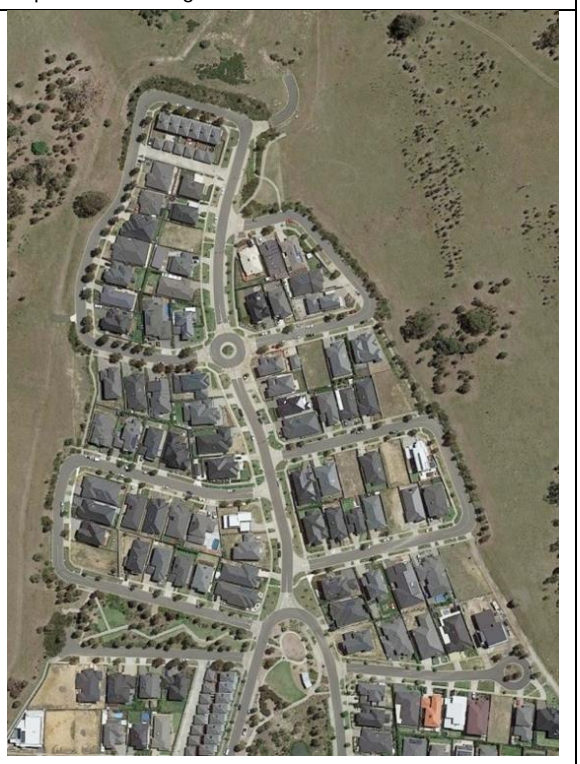
Hillside interface

Active interface – future access to park at right

Paper Road frontage

Open Space Link between hill at left to drainage reserve at right

Lookout on Hill Top



Aerial of precinct

Location - Quarry Hills Bushland Park Interfaces, The Atrium , Mill Park Lakes

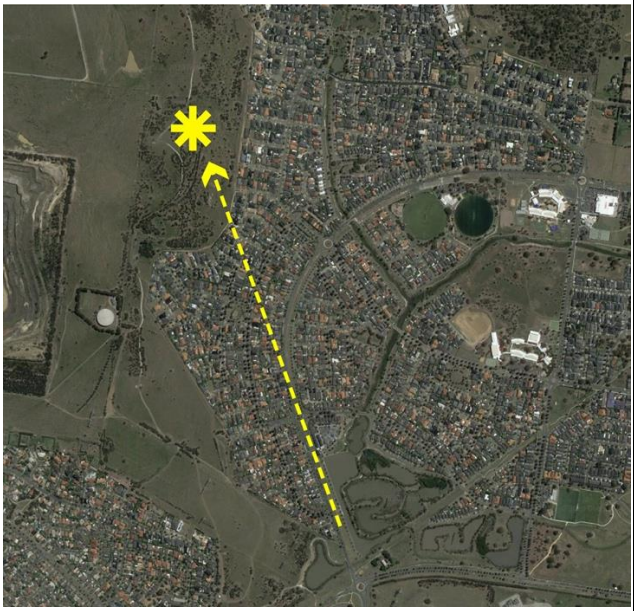
This case study comprises the interface between Quarry Hills Park and the residential areas.
It provides a positive/active interface with surveillance, emergency vehicle access, no fences fronting open space and combination of boulevard road and paper road edges to open space.

Comments Quarry Hills Bushland Park is an excellent example of capitalising on topography and elevated areas for public open space and providing significant views. it a provides a natural backdrop to the surrounding residential area, which helps to preserve the landscape character of the site and provides a regional landmark and placemaking element. This park also provides an example of incorporating public open space adjacent conservation reserves and easements. While access in and around the conservation reserves is often restricted, incorporating freely accessible open spaces adjacent to these reserves results in a larger visual space through which a network of walking trails will be developed.

Streets oriented to maximise views /landmarks – provide orientation

Views have been maximised by aligning streets along significant view lines. In this example the exotic upright poplars further enhance the framed view to the Quarry Hills providing a strong point of orientation.

Aerial of Mill Park Lakes



The designers of Mill Park Lakes Estate have also utilised the topography of the site in the valley at the foot of the Quarry Hills The boulevard lines up with one of several highpoints

Zoom view along Lakes Boulevard to Quarry Hills Regional Park

Location – Street orientation to views Mill Park Lakes Estate, South Morang

This case study shows how streets can positively interface with open space can be oriented to views – in this case to the landmark Quarry Hills.

Comments

Views to the volcanic cones and treed backdrop hills at Wallan can be highlighted in a similar manner.

Industrial Interfaces

Detail location note retained trees south of Enterprise Drive at bottom left

Located at interchange between Metropolitan Ring Road and Plenty Road, industrial uses buffer residential from freeway

Scholar Drive streetscape and rear access

Rear access

Pedestrian scale of built form and landscaping make a positive interface to pedestrian friendly streetscape screening service areas

Location – University Hill, Bundoora

University Hill shows how light industrial uses can be integrated into a mixed use precinct through the creation of a built form sleeve with a high quality façade and streetscape treatment. The loading areas at the rear are located behind office and administrative functions at the front of the property.

Industrial Interfaces

Streetscape
"Domestic" scale fence and landscaping make a positive interface to "residential" street

Location Plan
The site acts as a buffer f=between the Metropolitan Ring Road and the. Residential areas of Thomastown

Detail Location – note how offices screen loading and larger format built form to south from residential area to north

Access to rear and residences opposite

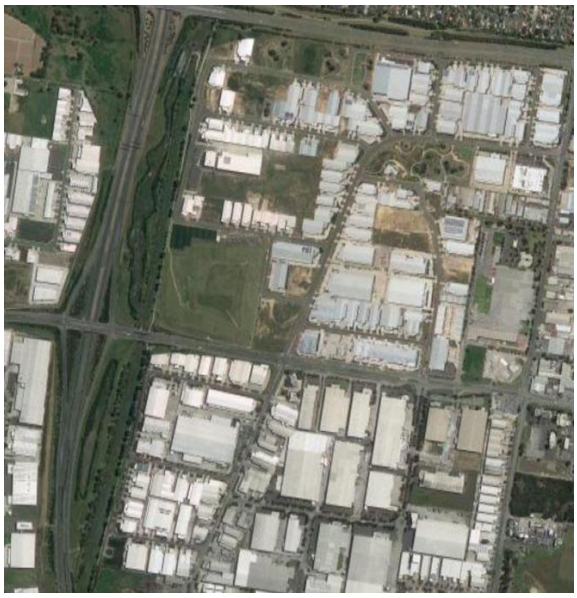
Location – Meridian Business Park, Thomastown

Meridian Business Park demonstrates how light industrial uses can be integrated int a residential precinct through the creation of a built form sleeve with a high-quality façade and streetscape treatment. The loading areas at the rear are located behind office and administrative functions at the front of the property.

Industrial Interfaces/settings

WSUD features such as swales in nature strips add additional planting areas

Streetscape with a built form sleeve with a high-quality façade and streetscape treatment masks larger built form.



Location aerial photo (East Link at left) west of Dandenong Creek which has been reconstructed. Greens Road at centre

Detail location aerial photo south of Greens Road

Wetland with bbq and recreation area is an important element of the site while performing a vital WSUD function

Location – Logis - Dandenong

Logis is a demonstration of an integrated open space network and public realm in an “Eco” industrial estate. The loading and parking areas are located behind office and administrative functions at the front of the property. Water Sensitive Design techniques are employed at the site, street and estate level. The interface to Dandenong Creek is an attractive open space link. The incorporation/retention of established trees creates a strong placemaking element.

13. Objectives and Recommendations

Objectives have been developed to help protect and enhance the landscape character of the Wallan South Precinct when it is developed and ensure that a strong local sense of place and identity is established in this process.

The objectives listed below describe the desired outcome to be achieved as the precinct is developed and should be considered in the preparation of the PSP.

The accompanying recommendations have been developed to provide a means of achieving the objectives. They aim to minimise the loss of existing landscape character elements, enhance the future landscape and visual amenity of the precinct and help to facilitate appropriate urban development.

Objectives and recommendations have been derived from:

- The desktop analysis of available GIS data including site contours, slope, drainage, significant vegetation and aerial photography
- The field survey
- Other background studies
- The opportunities and constraints of the site as identified earlier
- A review of relevant case studies as noted in this report

13.1 Landscape Character

Objective	Recommendations
1. Help establish a sense of place by retaining and enhancing key features/characteristics of the landscape character types: Western Plains and Foothills	▪ Align the layout of major roads, block patterns and open space to retain, protect and enhance elements such as significant vegetation, water courses, heritage sites, high points, ridgelines, steeper areas with key views and other features into the public realm of the precinct. (subject to ESD requirements) As Identified in Tract Report 2014: "*F1 Foothills Zone:* ▪ *Further development should be minimised and clearing of woodland vegetation should be avoided.* ▪ *Ridgelines and other visually prominent points should be totally exempt from any future development.* **[Wooded ridgelines should be protected other ridgelines subject to detailed survey and design]** ▪ *Any clearing in the vicinity of watercourses should allow a habitat buffer to remain at dimensions to be confirmed by a qualified ecological consultant."* **[Subject to bush fire buffers]** "*F3 Foothills* ▪ *Future development should focus on*

	infill within the existing settlement fabric. ▪ *Higher, more visually prominent areas should be avoided where possible* ▪ *The structure of new development should take into account notable views and sight lines.* ▪ *Environmental buffers, especially along watercourses, should be structured into new development and include native revegetation.* **[Subject to bush fire buffers]** ▪ *Interfaces to the adjacent natural landscapes should be considered.* *"WP1- Western Plains Zone 1* ▪ *Future development in this area should be assessed against possible flood risk.* ▪ *Where limited development is approved, windrow-like treed buffers should be included to maintain a link to the zone's agricultural uses.* **[Subject to bush fire buffers]** *WP2 - Western Plains Zone 2* ▪ *Development on the low grasslands is acceptable in accordance with approved Planning guidelines.* ▪ *Development should encroach no further than one third up the vertical height of the volcanic cones, and where possible should avoid them entirely***. [This is no longer an issue with Green Hill being protected in development of recreation reserve at base of slope]** ▪ *Development should be structured to take into account views and sight lines to the volcanic cones.* *WP3 - Western Plains Zone 3* ▪ *Future development should focus on infill within the existing settlement fabric.* **[no longer relevant with PSP designation]** ▪ *The structure of new development should take into account notable views and sight lines.* ▪ *Environmental buffers, especially along watercourses, should be structured into new development and include native revegetation." (Tract 2014)* **[Subject to bush fire buffers]** ▪ Consider the local palette of materials from retained site rock, timber and colours in designs.
2. Enhance the amenity, habitat quality and recreational value of Strathaird and Taylors Creeks	▪ Protect and enhance the amenity, habitat quality and recreational value of Strathaird and Taylors Creeks with naturalisation where possible and

	planting and revegetation with native species. Provide interpretive signage in open spaces for learning experiences about nature and history ▪ Continue the existing linear reserve along the lower reaches of Strathaird Creek and Taylors Creek alignments and establish a linear green open space network across the precinct ▪ Minimise road crossings of the more naturalised stretch of Strathaird Creek to ensure visual and habitat continuity. ▪ Preserve views to and from waterway corridors, through placement of perimeter roads, shared paths and adjoining open space. Provide local play spaces, picnic and BBQ areas adjacent to corridors including opportunities for interpretive signage for history and nature study (These can assist with creation of fire buffer setbacks to development). ▪ Prohibit the backing or siding of lots onto open spaces or allow with appropriate low, visually permeable fencing or other measures which provide visual access.
3. Protect and enhance panoramic and long-distance views to significant landmarks, such as Green Hill, Mt Disappointment, Spring Hill Cone Mt Fraser, the Old Sydney Road hillside and the Melbourne Skyline	▪ Align major roads with contours and along key ridge lines (similar to Old Sydney Road) to maximise views to landmarks. (subject to ESD requirements) ▪ Key roads should be oriented to highpoints for wayfinding and major link roads and or open spaces placed along ridge lines to preserve long views and significant outlooks (subject to ESD requirements) to include Spring Hill Cone (south within the Beveridge NW PSP), Mount Fraser, Mount Disappointment, Old Sydney Road and the Great Dividing Range. (Use the elevated areas/ridge lines as open space areas to maximise viewing opportunities. ▪ Steeper slopes above 20% should be protected from development. Minimise residential development on steepest slopes to reduce visual impact of cut and fill and retaining walls. Dwellings designed and sited to minimise cut and fill and may be considered in these areas

4. Develop an open space network which helps protect and enhance the significant landscape elements of the specific character types. Provide linear landscape connections between character elements	▪ Provide linear connections between open space reserves along creeks, road reserves, easements and others.
5. Retain or protect significant heritage sites as an opportunity for interpretation and placemaking	▪ Provide interpretation and explore opportunities for potential re-use to provide links to the past use of the site and contribute to the local sense of place.

13.2 Interface/Edge Treatments

Objective	Recommendations
6. Develop interface treatments which are sensitive to the prevailing edge condition.	▪ Create a positive interface to Rowes Lane adjacent to the township with dwellings fronting streetscapes, avoiding high fence treatments. Continue treatment established north of Taylors Lane in current development. ▪ Protect, enhance and incorporate roadside vegetation of Rowes Lane east of Taylors Lane to Old Sydney Road in modified cross section. ▪ Protect, enhance and incorporate roadside vegetation in Northern Highway and Hume Freeway cross sections where possible. Future acoustic treatment (if required) should incorporate local landscape character elements and palette and allowance for sufficient setbacks to allow visual softening of freeway walls with vegetation. ▪ Use larger lot sizes, built form envelopes and offsets to provide a sensitive visual transition between the urban areas of Wallan township and the steeper rural wooded areas west of Old Sydney Road. An additional benefit of these areas is that they can form part of a bush fire setback buffer. ▪ Maintain the rural character of the Old Sydney Road cross section. ▪ Respond to the approved edge treatments of the Beveridge North West PSP Interface when finalised. ▪ Develop appropriate connections to the existing open space networks and paths in Wallan township and to Beveridge North West.

13.3 Vegetation

Objective	Recommendations
7. Retain significant vegetation to help protect the landscape character of the precinct *Retaining existing vegetation can assist with early establishment and protection of local character.*	▪ Trees assessed as having high to very high arboriculture retention value (refer Arborists Report) should be prioritised for retention and should be incorporated into the public realm, open space, road reserves, widened road medians or easements where possible. ▪ Retain areas of native vegetation and/or significant vegetation along creek corridors. ▪ Areas identified as having high quality and/or significant ecological value should also be retained. Maintenance of contiguous whole areas of native vegetation should be considered over individual trees where possible. ▪ Consider connecting the conservation areas along Old Sydney Road with the vegetated areas of Strathaird Creek. ▪ Minimise clearing of roadside vegetation where feasible and subject to fire protection setbacks.

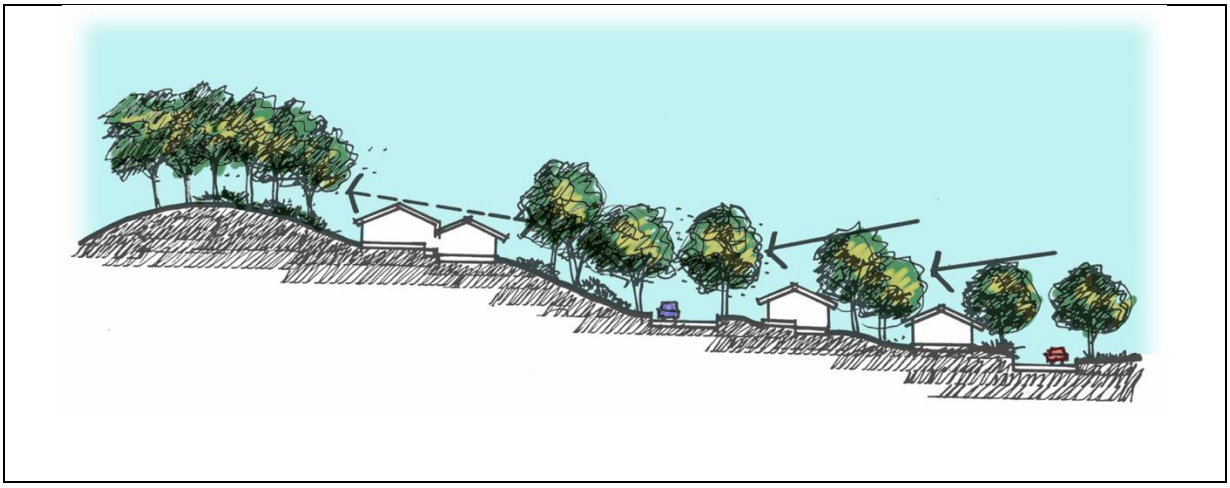
13.4 Recommendations

The following is a series of illustrations of key recommendations highlighted above.

Development on Hillsides

Key considerations:

- Minimise cut and fill
- Avoid development on slopes above 20% grade
- Keep built form to within height of canopy line
- Avoid placement of buildings and works on prominent ridge lines
- Ensure appropriate bushfire attack separation
- In general, roads should run parallel to the contours
- Consider views to and from development



Development on Hillsides

View lines at hillside interfaces

- Boulevard road edge allows for increased surveillance from dwellings
- Road reserve is part of bush fire attack separation
- Side streets aligned to views to hill from surrounding neighbourhood (subject to ESD requirements)
- Generally larger lot sizes towards Old Sydney Road interface
- These interface treatments would also apply on Green Hill

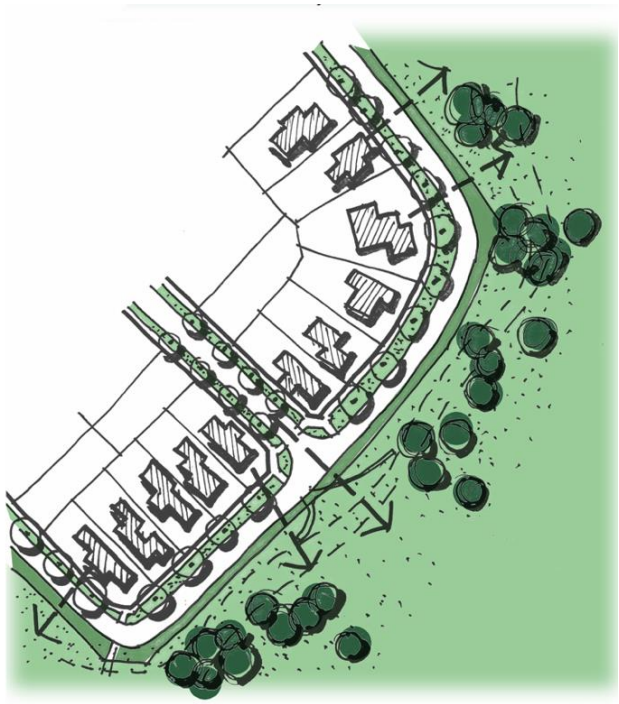
Consideration of view lines to Hillsides and interfaces

Development at Hillside Interfaces

A key consideration for development at hillside interfaces is to allow for a variety of edge treatments which provide:

- Active surveillance
- Easily maintainable edges by Council Open Space Department
- Emergency vehicle access
- Continuity of major remnant vegetation
- Linear open space links
- Opportunities for local play and fitness areas, BBQs and picnic facilities
- Variety of dwelling types/lot configuration
- Permeability

Boulevard road Interface to hill



- Boulevard road edge allows for maximum surveillance from dwellings and street
- Bush fire attack separation required
- In general roads should run parallel to the contours
- Side streets aligned to views to hill from surrounding neighbourhood(subject to ESD requirements)
- Generally larger lot sizes towards Old Sydney Road interface
- These interface treatments would also apply on Green Hill
- Opportunity to provide local play spaces, picnic and BBQ areas adjacent to road edge including opportunities for interpretive signage for history and nature study

Hillside and conservation area residential Boulevard Road interface

Boulevard Road frontage with setback

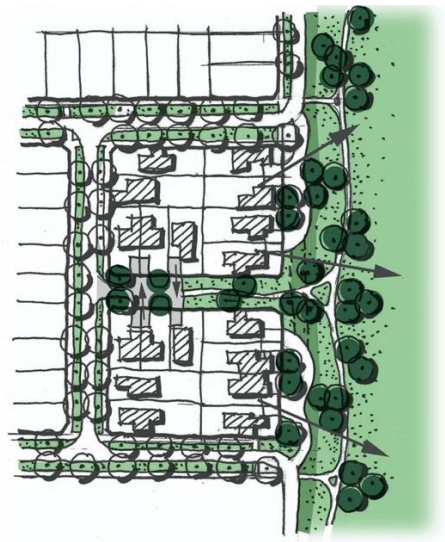
Paper Road Interface

- Paper road edge allows for increased surveillance from rear loaded dwellings
- Bush fire attack separation required
- In general roads should run parallel to the contours
- Side streets aligned to views to hill from surrounding neighbourhood (subject to ESD)
- Generally larger lot sizes towards Old Sydney Road interface
- These interface treatments would also apply on Green Hill
- Remnant vegetation must be protected in design – requires discussion with Council

Paper Road frontage with setback

Hillside and conservation area residential Paper Road interface

Shared Driveway Interface



- Shared driveway access allows for surveillance from dwellings (this should only be used in limited circumstances)
- Bushfire attack separation required

Hillside and conservation area residential shared driveway interface

Development at Green Hill Recreation Reserve interface

A key consideration for development at the Green Hill interface is to allow for the development of an expanded active recreation reserve at 300 Northern Highway on the generally level land of the site while preserving the hill as a significant local landmark.

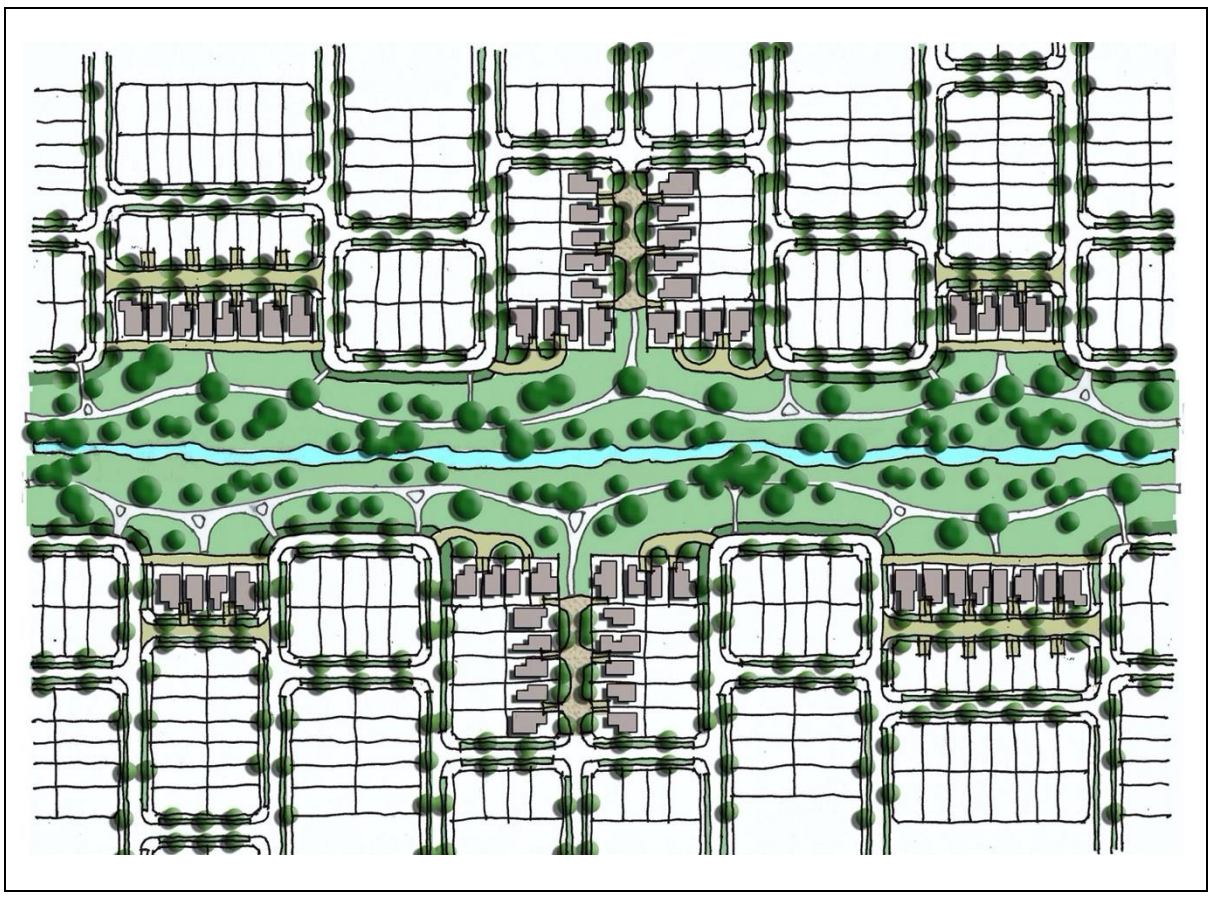
Potential 300 Northern Highway recreational reserve interface (indicative only)

- The design of the active recreational facilities should provide visual access to the Green Hill backdrop
- The peak of the Green Hill volcanic cone provides expansive views across Wallan and to the surrounding landscapes, with the potential to become a key attractor for Wallan with an appropriate walking trail and outlook.
- Primary access to the active recreation facilities should be taken from the Taylor Lane intersection
- Additional access can be provided from the land to the south which could be residential or employment uses. In either instance the development should present an active interface to this street frontage
- Side streets aligned to views to hill from surrounding neighbourhood (subject to ESD requirements)
- The Northern Highway “boulevard” treatment should continue along the reserve edge

Development at creek side Interfaces

A key consideration for development at creek side interfaces is to allow for a variety of edge treatments which provide:

- Active surveillance - no back fences to creek
- Easily maintainable edges by Council Open Space Department
- Emergency vehicle access
- Uninterrupted overland flows in peak flooding - periods development out of flood plain and stormwater treatment wetlands
- Consideration of visual impact of intermittent water flows
- Continuity of major remnant vegetation and habitat corridor
- Linear open space links via shared trails linking to Wallan and Beveridge NW
- Opportunities for local open space including play equipment and fitness areas, BBQs and picnic facilities
- Opportunities for interpretive signage in open spaces for learning experiences about nature and history of area
- Continue and enhance the existing linear reserve along the lower reaches of Strathaird Creek and Taylors Creek alignments and establish a linear green open space network across the precinct that may also include other potential green and blue infrastructure.

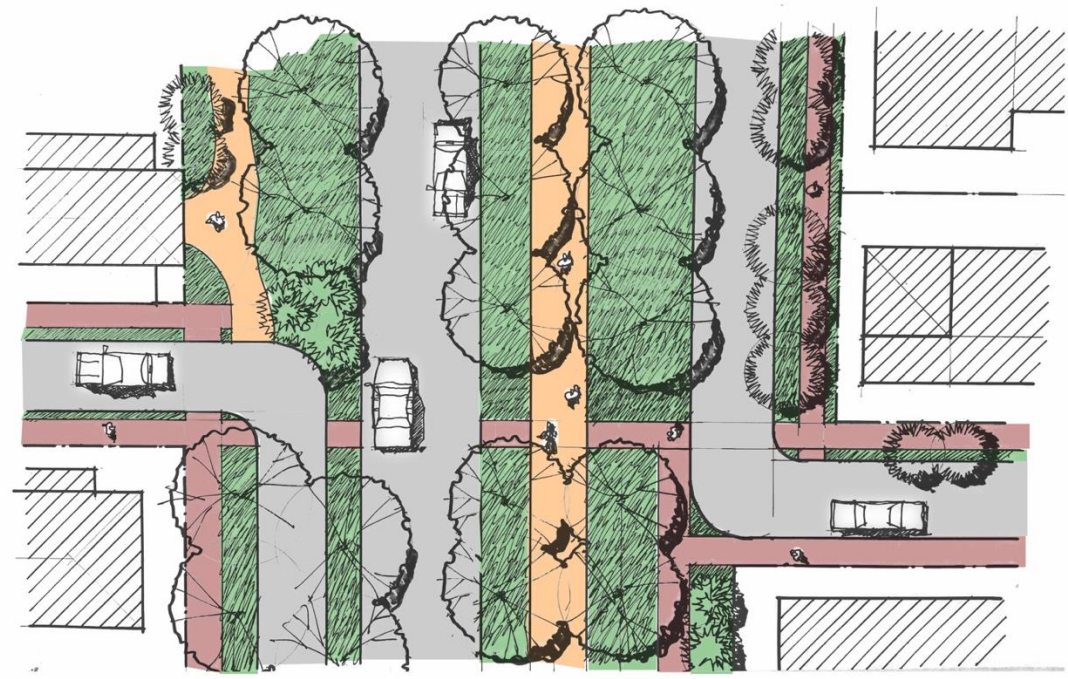


Variable creek side interfaces

Development at Rowes Lane and other "rural lane" Interfaces

A key consideration for development at the rural lane interfaces is to protect the rural character as a key placemaking element.
Allow for a:

- Continuity of major remnant vegetation with infill planting in gaps
- Creation of a linear open space with shared walking/cycling trail
- Potential equestrian trail
- Active surveillance from variable edge treatments
- Loop road to residential,
- Locate crossing streets in existing vegetation gaps



Plan view showing shared driveways at left, standard lots at top right, rear loaded dwellings with paper road interface bottom right

Section view of typical cross section of Rowes Lane (indicative)

Development at major road interfaces – Northern Highway

A key consideration for development at the Northern Highway interfaces is to protect the amenity of new residential and employment areas.
Allow for a:

- Continuity of major remnant exotic and indigenous vegetation with infill planting in gaps
- Bush fire attack separation required
- Creation of a linear open space with shared walking/cycling trails on edges
- Active surveillance from variable edge treatments
- Provide break in planting to allow views to Green Hill from highway

- Protect, enhance and incorporate roadside vegetation in Northern Highway cross section.
- Future acoustic treatment (if any) should incorporate local landscape character elements and palette and allowance for sufficient setbacks to allow visual softening of sound walls with vegetation.
- The spaces can form part of the precinct linear open space network
- The road frontages can vary from standard streets fronting open space to rear loaded lots with paper road frontage to linear open space

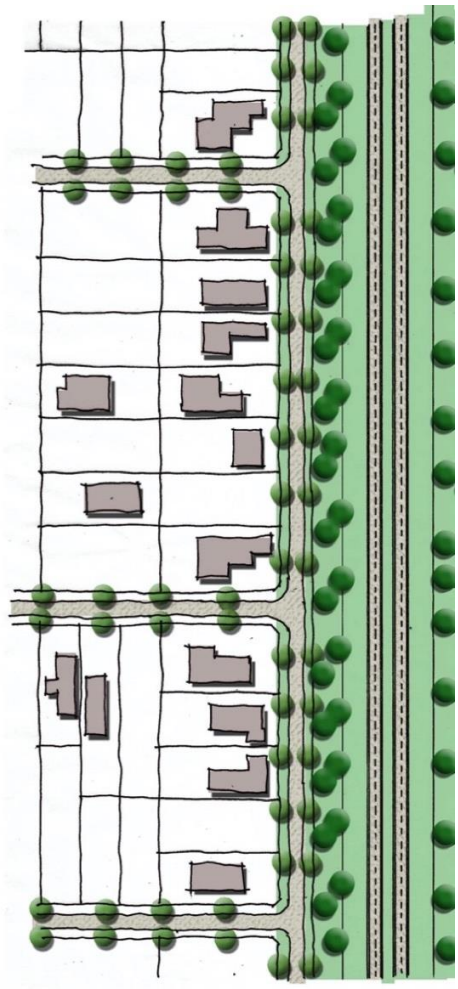
Plan views of variable road interfaces to linear open space along Northern Highway setback. Residential at left industrial at right

Development at major road interfaces – Hume Freeway

A key consideration for development at the freeway interfaces is to protect the amenity of new residential (if this use is selected in the PSP) and employment areas.

Allow for a:

- Continuity of major vegetation types with infill planting in gaps
- Bush fire attack separation required
- Creation of a linear open space with shared walking/cycling trails on edges
- Active surveillance from variable edge treatments



- Protect, enhance and incorporate roadside vegetation in Hume Freeway cross sections.
- Future acoustic treatment should incorporate local landscape character elements and palette and allowance for sufficient setbacks to allow visual softening of freeway walls with vegetation.
- The spaces can form part of the precinct linear open space network
- Provide break in planting to allow views to Green Hill from freeway

Plan view of potential road interfaces to linear open space along Hume Freeway setback.

13.5 Conceptual Development Control Areas

This plan is a conceptual arrangement of the preceding recommendations with edge controls suggested at the base of major slopes, creek setbacks, along major roads and ridgelines. The vegetated areas along Old Sydney Road coincide with sloping areas considered generally too steep to develop without major engineering and earthworks and are also subject to bushfire management controls.

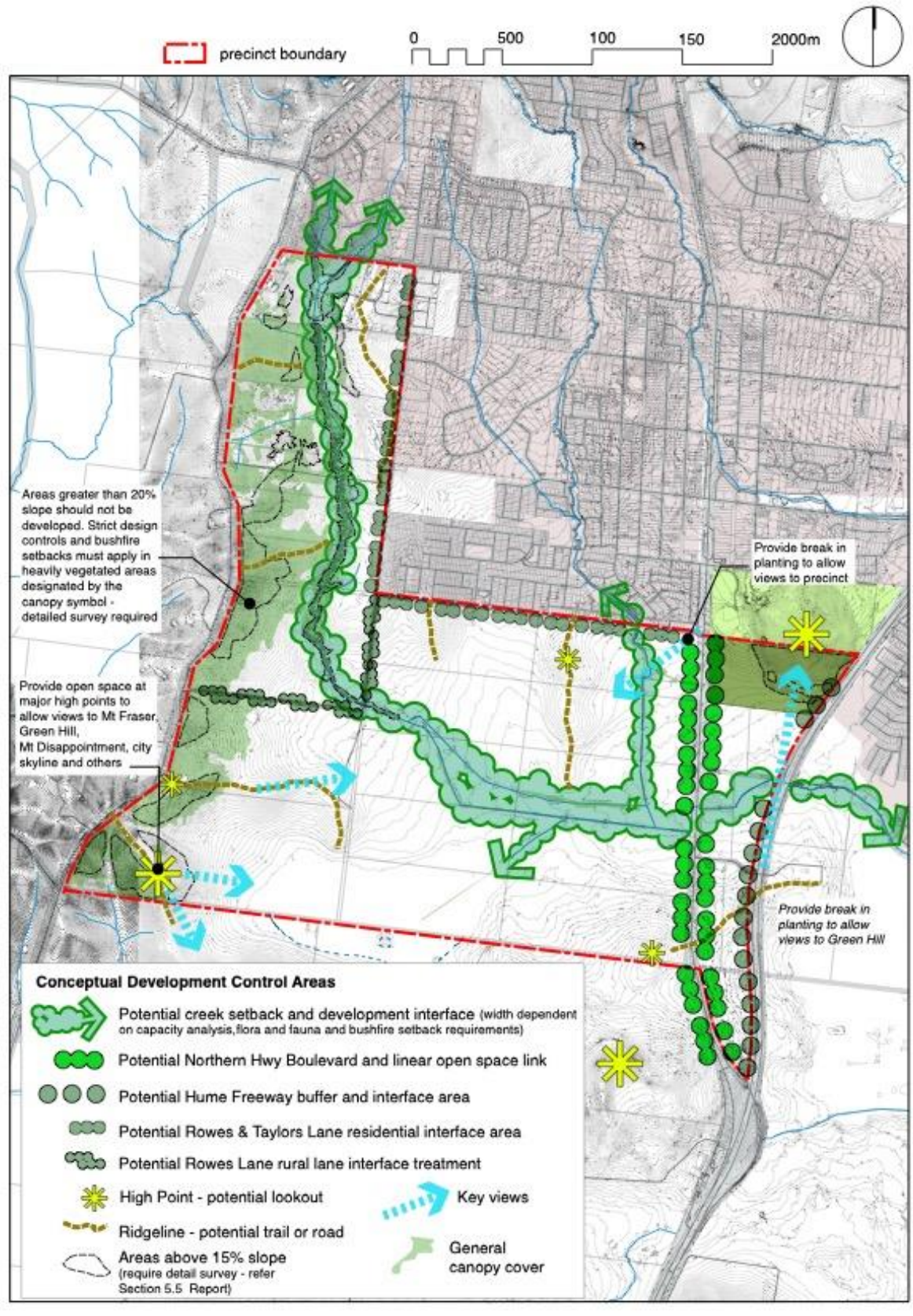


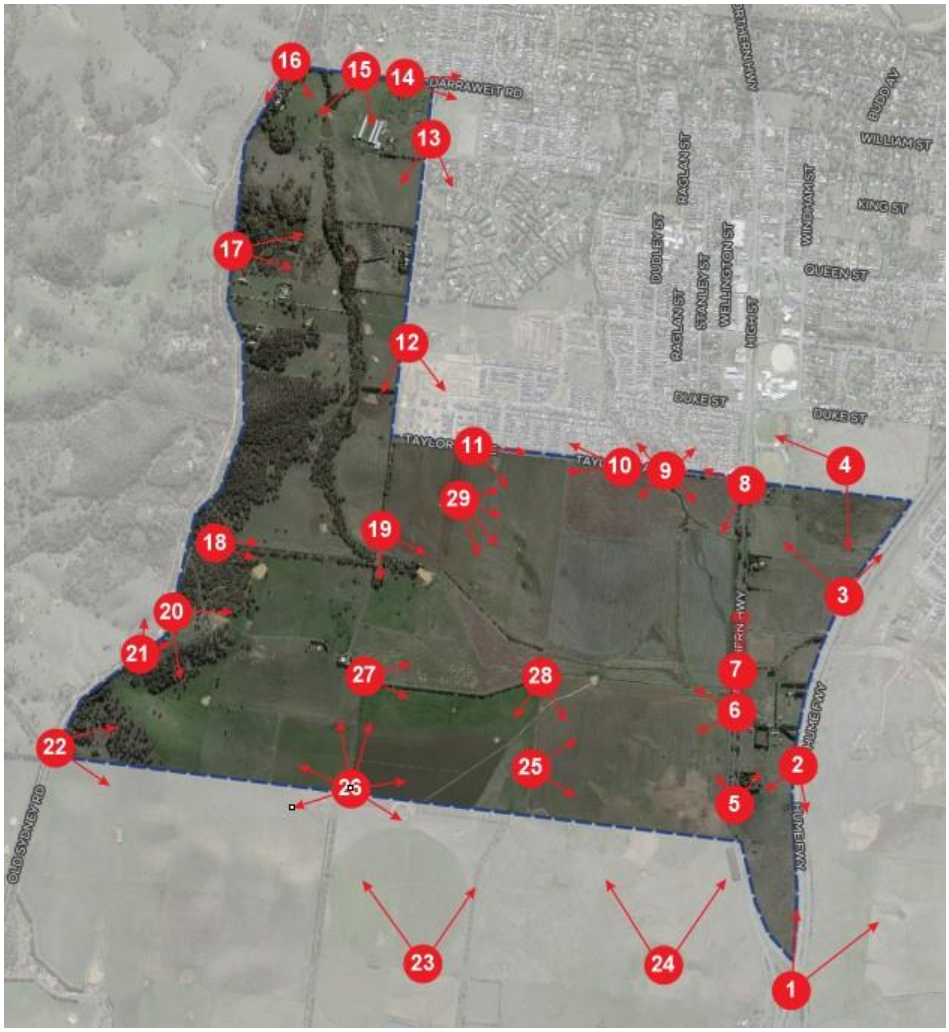
Figure 13– Conceptual Development Control Areas
Source: VPA GIS layers (2020) and Study Team Analysis

Appendix One – Photographic Inventory

Key viewpoint locations were identified, recorded and photographs were viewed online and screen captures were made from Google Street View. Viewpoints were chosen to represent a range of typical views possible from that locality. Drone images were used for viewpoints 23 and 24. These were taken for the Beveridge NW PSP Panel in June, 2020.

A field inspection was then made on November 13, 2020 following the lifting of COVID-19 travel restrictions. Additional photographs were taken on the Crystal Group Properties on March 27, 2021. Photographs were taken to ground truth the initially selected viewpoints and additional key viewpoints were identified and photographed during the inspection. The key difference between Street View and our on-site images are that Google uses multiple wide-angle lenses mounted at the height of a van roof to produce composite images. Our on-site images were taken with a 50mm focal length lens (the industry standard for landscape and visual assessment) with photographs taken at approximately 1.6 metres above the ground surface (eye level) except in-vehicle images taken on the freeway and while driving elsewhere. Composites were made by “stitching” images for clarity at key locations.

The viewpoints for the photos are shown on the map below.



Photograph Capture Locations Map

Viewpoint 1

Google Street View wide-angle lens composite image

50m lens image November 2020

Photo Location	Hume Highway
Direction	North
Landscape Character Type	Western Plains Zone 1
View Type	Foreground, Middle Ground, Background
Comments	Visual gateway to the precinct. The Northern Highway bridge frames the view to the hills to the east. The curve of the highway and native vegetation obscure views to the precinct .

Viewpoint 2

Google Street View wide-angle lens composite image

Photo Location	Hume Highway
Direction	South to south-west
Landscape Character Type	Western Plains Zone 1
View Type	Middle Ground, Background
Comments	At this point two volcanic cones are visible: Mount Fraser is in alignment with the freeway and Spring Hill is visible to the right as part of an unobstructed view of the Precinct

Viewpoint 3

Google Street View wide-angle lens composite image

50mm lens image November 2020

Photo Location	Hume Highway
Direction	North
Landscape Character Type	Western Plains Zone 3
View Type	Middle Ground
Comments	Green Hill, a volcanic cone, is highly visible at this point.

Viewpoint 4 - south

50mm lens composite image November 2020

Photo Location	View from Green Hill (Google Earth image)
Direction	South to south-east
Landscape Character Type	Western Plains Zone 3
View Type	Middle Ground, Background
Comments	Mount Fraser is visible to the right, Spring Hill in the middle and open plains to the right

Viewpoint 4 – east

50mm lens image November 2020

Photo Location	Green Hill
Direction	East
Landscape Character Type	Western Plains Zone 3
View Type	Middle Ground, Background
Comments	This shows the Taylors Lane interface, with the open plains within the precinct to the left and residential development to the right. The hills rise up to the Old Sydney Road ridgeline in the background.

Viewpoint 5

50 mm lens November 2020

Photo Location	Northern Highway
Direction	North
Landscape Character Type	Western Plains Zone 2
View Type	Middle Ground, Background
Comments	This is the main access to both Wallan and the precinct for northbound traffic from the Hume Freeway. Green Hill is visible in the background

Viewpoint 6

Google Street View wide-angle lens composite image

50 mm lens image November 2020

Photo Location	Northern Highway
Direction	North
Landscape Character Type	Western Plains Zone 2
View Type	Middle Ground, Background
Comments	Ruins of Inverlochy Castle Hotel with grassed plains and treed hills in background

Viewpoint 7

50m lens image November 2020

Viewpoint 7

Photo Location	Northern Highway
Direction	North
Landscape Character Type	Western Plains Zone 3
View Type	Foreground
Comments	At this point, dense hedgerows of elms and poplars frames the view, giving a strongly vertical element to the landscape that strongly contrasts with the open views to the plains in other areas. None of the surrounding landmarks are visible.

Viewpoint 8

Google Street View wide-angle lens composite image

50mm lens composite image November 2020

Photo Location	Northern Highway (Taylors Lane intersection)
Direction	South to south-west
Landscape Character Type	Western Plains Zone 3
View Type	Middle Ground, Background
Comments	This is the main gateway to the precinct from Wallan township. The Northern Highway is framed by Eucalyptus trees. There is an extensive open view of the precinct to the south-east with the treed hills on the far horizon. Taylors Lane to the right marks the boundary with an established residential area

Viewpoint 9 - south

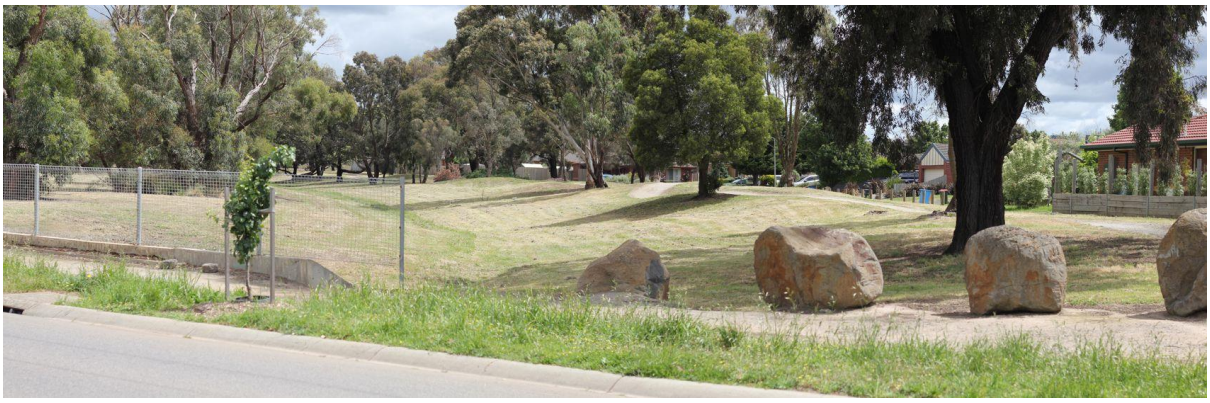
Google Street View wide-angle lens composite image

50mm lens November 2020

Photo Location	Taylors Lane
Direction	South
Landscape Character Type	Western Plains Zone 3
View Type	Middle Ground, Background
Comments	Taylors creek crossing with open views across the plains with Mount Fraser and Spring Hill visible in the background

View 9 - north

Google Street View wide-angle lens composite image



50mm lens composite image November 2020

Photo Location	Taylors Lane
Direction	South
Landscape Character Type	Western Plains Zone 3
View Type	Middle Ground, Background
Comments	Taylors creek open space corridor to the immediate north of the precinct with residential development either side

Viewpoint 10

50 mm lens image November 2020

Photo Location	Taylors
Direction	West
Landscape Character Type	Western Plains Zone 3
View Type	Foreground
Comments	Interface between the residential area north of Taylors lane and the precinct to the south.

Viewpoint 11

Google Street View wide-angle lens composite image

50mm lens composite image November 2020

Photo Location	Taylors Lane
Direction	East to south-east
Landscape Character Type	Western Plains Zone 3
View Type	Middle Ground, Background
Comments	At this point Taylors Lane emerges from a cutting and descends. opening up views of residential development to the north and unobstructed views of the precinct to the south with Mount Fraser visible in the background to the right Treed ranges are visible on the far horizon.

Viewpoint 12

Composite image November 2020

Photo Location	Rowes Lane
Direction	South-east
Landscape Character Type	Western Plains Zone 3
View Type	Middle Ground, Background
Comments	Interface with new residential development to the left. Mount Fraser is visible to the left.

Viewpoint 13

Google Street View wide-angle lens composite image

50 mm lens image November 2020

Photo Location	Rowes Lane
Direction	East
Landscape Character Type	Foothills Zone 3
View Type	Middle Ground, Background
Comments	Rowes lane dips down and then rises to a crest. A construction fence in the lower photos surrounds new residential development at the top of Rowes Lane. On the left are rural residential properties surrounded by planted vegetation. The land to the right within the precinct is open and undulating.

Viewpoint 14

50 mm lens image November 2020

Photo Location	Darraweit Road
Direction	East
Landscape Character Type	Foothills Zone 3
View Type	Foreground, Middle Ground, Background
Comments	This is northernmost part of the precinct. Darraweit Road descends toward Wallan through a cutting. Rowes Lane is below the crest on the right. Mount Disappointment is visible on the horizon

Viewpoint 15

Google Street View wide-angle lens composite image

Composite image November 2020

Photo Location	Darraweit Road
Direction	South
Landscape Character Type	Foothills Zone 3
View Type	Foreground, Middle Ground
Comments	Strathaird Creek lies in a shallow valley. A broadening of the creek provides a focal point in the middle distance. Long distance views are obscured by nearby ridgelines. Wallan Egg Farm is visible to the left of the creek

Viewpoint 16

Google Street View wide-angle lens composite image

50mm lens composite image November 2020

Photo Location	Old Sydney Road
Direction	South
Landscape Character Type	Foothills Zone 1
View Type	Foreground, Middle Ground
Comments	This point marks an entry point to the precinct at the north-west corner. The road at this point narrows and has extensive stands of native vegetation on either side. A driveway leads to a rural residential property.

Viewpoint 17

Google Street View wide-angle lens composite image

50 mm lens image November 2020

Photo Location	Old Sydney Road
Direction	East
Landscape Character Type	Foothills Zone 1
View Type	Foreground, Middle Ground, Background
Comments	A view line through to the ranges on the horizon with grassed hills in the middle ground with areas of native vegetation

Viewpoint 18

50 mm lens image November 2020

Photo Location	Rowes Lane
Direction	East
Landscape Character Type	Foothills Zone 1
View Type	Foreground, Middle Ground
Comments	At this point Rowes Lane begins its descent from Old Sydney Road. Remnant Eucalyptus trees line both sides of the road in the foreground.

Viewpoint 19

Google Street View wide-angle lens composite image

50 mm lens image November 2020

Photo Location	Rowes Lane
Direction	South-east
Landscape Character Type	Western Plains Zone 2
View Type	Foreground, Middle Ground
Comments	Crossing over Strathaird Creek with scattered remnant Eucalyptus trees along creek alignment

Viewpoint 20 - east

50mm lens composite image November 2020

Photo Location	Old Sydney Road (north edge of road reserve)
Direction	East
Landscape Character Type	Foothills Zone 1
View Type	Middle Ground, Background
Comments	Views across the precinct with Mount Disappointment to the left and Mount Fraser to the right

Viewpoint 20 - south

50mm lens composite image November 2020

Photo Location	Old Sydney Road (north edge of road reserve)
Direction	South
Landscape Character Type	Foothills Zone 1
View Type	Middle Ground, Background
Comments	View to Melbourne City Skyline

Viewpoint 21

50mm lens image November 2020

Photo Location	Old Sydney Road
Direction	North
Landscape Character Type	Foothills Zone 1
View Type	Foreground, Middle Ground
	The road here follows the curving ridge line and is flanked by dense native vegetation

Viewpoint 22

Google Street View wide-angle lens composite image

50 mm lens composite image November 2020

Photo Location	Old Sydney Road (intersection with Stockdale Road)
Direction	East
Landscape Character Type	Foothills Zone 1
View Type	Middle Ground, Background
Comments	This point is the south-east corner of the Precinct. A break in the roadside vegetation reveals a background view to the volcanic cone of Mount Fraser to the left. A hillside with scattered remnant trees lies within the precinct

Viewpoint 23

Drone camera image

Photo Location	Aerial view from the north of Beveridge towards the southern boundary of the site
Direction	North
Landscape Character Type	Western Plains Zone 2
View Type	Middle Ground, Background
Comments	This image shows the very open nature of the southern boundary of the precinct. The grassy plains are seen in the background, the treed hillsides are shown to the left and other hills beyond Wallan appear on the horizon to the north

Viewpoint 24

Drone camera image

Photo Location	Aerial view from above Spring Hill towards the site
Direction	North
Landscape Character Type	Western Plains Zone 2
View Type	Foreground, Middle Ground, Background
Comments	This image shows Spring Hill in the foreground, the grassy plains in the middle ground with Green Hill to the right, and Pretty Sally Hill in the background to the left

Viewpoint 25

21 mm lens image March 2021

Photo Location	Within Crystal Group property
Direction	East
Landscape Character Type	Western Plains Zone 2
View Type	Foreground,
Comments	One of a number of stone piles made from stones excavated from paddocks

Viewpoint 26 west

24 mm lens image March 2021

Photo Location	View from Crystal Group property near southern boundary of precinct
Direction	West
Landscape Character Type	Western Plains Zone 2
View Type	Foreground, Middle Ground, Background
Comments	Generally flat agricultural landscape with hills in the background

Viewpoint 26 north

Zoom lens image March 2021

Photo Location	View from Crystal Group property near southern boundary of precinct
Direction	North
Landscape Character Type	Western Plains Zone 2
View Type	Foreground, Middle Ground, Background
Comments	This image shows gently undulating agricultural area in the foreground, farm buildings and a line of trees in the middle ground and Pretty Sally Hill in the background

Viewpoint 26 – east

21 mm lens image March 2021

Photo Location	View from Crystal Group property near southern boundary of precinct
Direction	East
Landscape Character Type	Western Plains Zone 2
View Type	Foreground, Middle Ground, Background
Comments	This image shows the generally flat and open agricultural nature of this area. Mount Disappointment is visible in the background.

Viewpoint 27

57 mm lens image March 2021

Photo Location	View from Crystal Group property
Direction	East
Landscape Character Type	Western Plains Zone 2
View Type	Foreground, Middle Ground, Background
Comments	A track with blue gum windbreak to one side and agricultural fields to the other. Mount Disappointment is visible in the background.

Viewpoint 28

24 mm lens image March 2021

Photo Location	View from Crystal Group property
Direction	South
Landscape Character Type	Western Plains Zone 2
View Type	Foreground, Middle Ground, Background
Comments	Generally flat agricultural land with Spring Hill visible in the background to the left

Viewpoint 29 east

24 mm lens March 2021

Photo Location	View from Crystal Group property near Taylors Lane
Direction	East
Landscape Character Type	Western Plains Zone 3
View Type	Foreground, Middle Ground, Background
Comments	Gently undulating agricultural land with Green Hill visible in the background with Mount Disappointment behind it.

Viewpoint 29 south-east

21 mm lens image March 2021

Photo Location	View from Crystal Group property near Taylors Lane
Direction	South-east
Landscape Character Type	Western Plains Zone 3
View Type	Foreground, Middle Ground, Background
Comments	Generally flat agricultural land in the foreground and middle ground with Spring Hill in the background

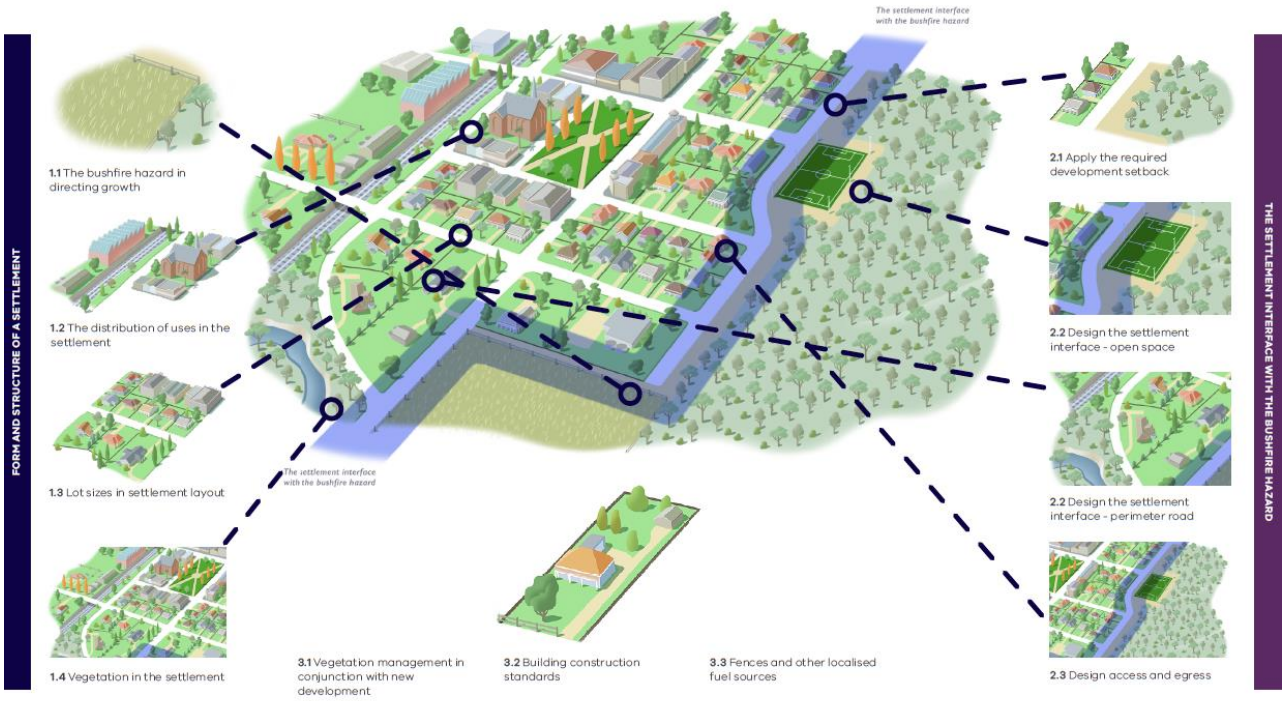
Appendix Two – Design Guidelines Settlement Planning at the Bushfire Interface

Department of Environment, Land, Water and Planning July 2020

This is an extract from "*Design Guidelines Settlement Planning at the Bushfire Interface*"
Department of Environment, Land, Water and Planning July 2020

"Bushfire should be considered in the broader planning of the settlement. This enables resilience to be incorporated in the form and structure of the settlement from the outset. Taking these considerations into account early in the settlement planning process optimises implementation along with other settlement planning considerations.

There are four key considerations:
1.1 The bushfire hazard in directing settlement growth
1.2 The distribution of land uses in the settlement
1.3 Lot sizes in settlement layout
1.4 Vegetated areas within a settlement



igure 1: Settlement planning for bushfire

The settlement interface

Strategic settlement planning should deliver a bushfire ready interface between settlement areas and the bushfire hazard. The purpose of the interface is to create an edge to the hazard where a moving bushfire front will not continue into the settlement. From this edge, development can be setback and designed to mitigate the impacts of bushfire.
There are three key considerations:
2.1 Apply the required development setback
2.2 Design the settlement interface
2.3 Design access and egress
The dynamic nature of bushfire and the unique characteristics of a settlement, including its location in the wider landscape, means that the design considerations are prompts to guide settlement planning. They are to be based on context and analysis at the detailed settlement planning stage.

Perimeter roads

Perimeter roads are the preferred design outcome on the settlement interface and where a site abuts or is near a bushfire hazard. A perimeter road enables a no fuel area to form all or part of the interface. (page 15)

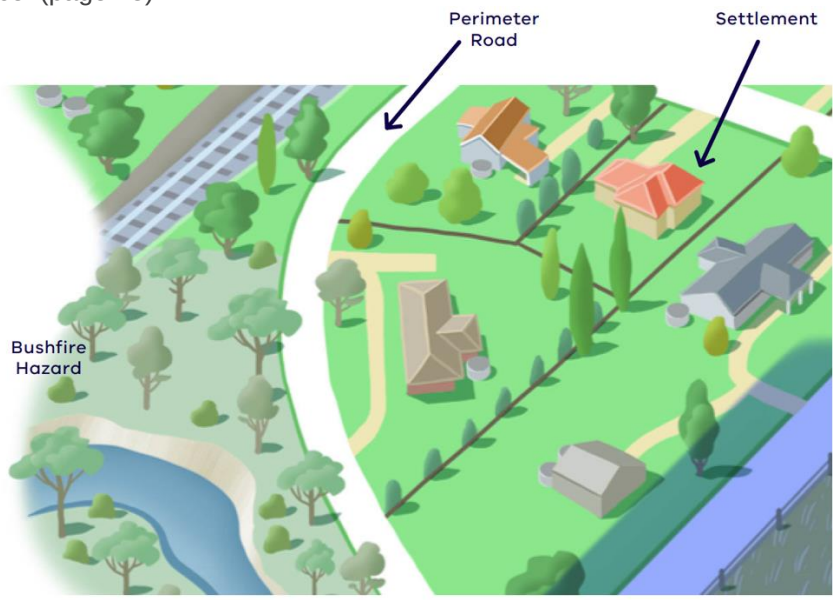


Figure 6: Perimeter roads on the settlement interface

Open space on the settlement interface

Open space can be integrated into the settlement interface and is an important design consideration. Open space excludes buildings that may be permanently occupied (such as houses). (page 16)

Figure 7: Open space in the settlement interface

Residential lots

Smaller urban lots, for example less than 800sq.m in size, are less likely to enable fuel sources (including vegetation) due to the limited area of open space.
They contribute positively to achieving lower-fuel settlements. However, smaller lots result in structures closer to together, increasing the risk of structure to structure fire.

Larger lots, for example 0.2ha- 4ha in size, have the capacity for more localised fuel sources (particularly vegetation) due to more extensive open space areas. They require more extensive management by individual landowners. They also tend not be large enough for landowners to have specialised equipment (for example, tractors) that would make management more practical. Houses,

however, are separated further apart minimising the risk of structure to structure fire.

Figure 3: Lot sizes in settlements

An optimum lot size of between 800sq.m-1,200sq.m provides a good balance. This minimises available open space for fuel sources while enabling a good separation between individual structures (ideally more than 10m).
Many parts of Victoria encourage the provision of low-density and rural living lots of 0.2ha and above. They are often justified in locations that do not have reticulated services or as a transitional land use from rural to urban (for example, on the edges of settlements).

These style of lots present a unique bushfire risk as they have not historically resulted in a well-planned settlement interface or an edge to the bushfire hazard. Bushfires and grassfires can penetrate larger lots and create bushfire pathways into denser residential areas. This can include a moving bushfire front entering a settlement. They may also make it more difficult for firefighting (for example, for the setting up of containment lines) and for the monitoring and enforcement of vegetation management on private land"

Setbacks

2.1: Apply the required development setback

New development should be set back from the bushfire hazard. The setback is determined based on the type of vegetation and slope under the vegetation. Permanently occupied development, such as dwellings, are not permitted in the setback area.

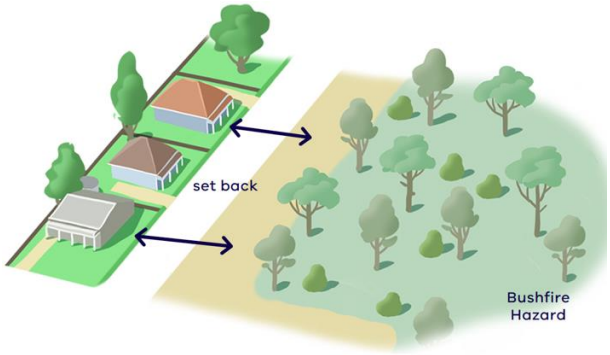


Figure 5: Apply the required setback from the hazard

What setback applies?

Planning scheme provisions specify the setback required between development and the bushfire hazard. The setback varies depending on three factors:

1. Whether the planning proposal forms part of a planning scheme amendment or a planning permit application
2. The type of use proposed - different setback requirements apply for different uses based on the potential vulnerability of future occupants
3. Landscape bushfire considerations where the settlement is subject to Clause 44.06 Bushfire Management Overlay in planning schemes.

It will be important for planning and responsible authorities to identify the setback that applies, using the applicable parts of the planning scheme.

Appendix Three – References

Structure Plans and Adjacent Precinct Structure Plans including:

- Beveridge North West PSP
- Wallan Structure Plan

Visual Assessment

- Visual Landscape Planning in Western Australia: A manual for evaluation, assessment, siting and design"
- Landscape Character Types of Victoria – with frames of reference for scenic quality assessment Mike Leonard and Richard Hammond
- Wallan Structure Plan Landscape Assessment" Tract 2014
- The Landscape and Visual Assessment by Planisphere, Final Report September 2014 prepared for the Metropolitan Planning Authority for Beveridge North West PSP
- The Wollert Visual Character Assessment, City of Whittlesea 2014 for the Metropolitan Planning Authority
- Craigieburn West Landscape Character Assessment, Spire 2019 for the Victorian Planning Authority
- Google Maps https://www.google.com/maps
- LASSI https://maps.land.vic.gov.au/lassi/

The Policies, Strategies and Reports reviewed for this report include:

- North Growth Corridor Plan, Growth Area Authority (2012)
- Plan Melbourne 2017-2050, Victorian State Government (2017)
- Melbourne Strategic Assessment Program, Dept Environment Land Water and Planning, (2018)
- Biodiversity Conservation Strategy for Melbourne's Growth Corridors, Dept Environment and Primary Industries (2013)
- Design Guidelines Settlement Planning at the Bushfire Interface Department of Environment, Land, Water and Planning (July 2020)

Reports on the Wallan South Precinct for the Victorian Planning Authority

- Arboricultural Assessment and Report Precinct Structure Plans - Wallan South and Wallan East Precincts, Tree Logic (2020)
- Flora and Fauna Assessment Wallan South Precinct, Victorian Planning Authority / WSP (2020)
- Wallan South and Wallan East Precinct Structure Plans Land Capability Assessment, Jacobs (2020)
- Wallan South and Wallan East Precinct Structure Plans Land Capability Assessment, Jacobs (2020)

Other

- Victorian Heritage Database, Heritage Victoria

- Geological Survey of Victoria. (1862). [Parts of parishes of Wallan Wallan, Merriang, Darraweit Guim, and Bylands] [cartographic material] / surveyed, engraved and published by Alfred R.C Selwyn, Govt. Geologist at Geological Survey Office, Melbourne ; geologically surveyed by Norman Taylor, Assistant Geologist 1857 ; lithographed by R. Sheperd. (Geological Survey of Victoria ; no. 3, N.W). Melbourne: Geological Survey OfficeOffice.http://search.slv.vic.gov.au/permalink/f/1o9hq1f/SLV_VOYAGER187593
- Urban Design Guidelines for Victoria https://www.planning.vic.gov.au/policy-and-strategy/urban-design/urban-design-guidelines