Wallan East Part 1 PSP
Landscape, Visual and Connectivity Assessment

Report

For the Victorian Planning Authority

December 22, 2020

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Contents

1. Introduction

The purpose of this report is to provide a Landscape Assessment to inform the Wallan East Part 1 Precinct Structure Plan (part of PSP 1201.1). 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 East Part 1 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 to the south and south east, the Wallan South PSP, which is being progressed concurrently, 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 north and east, and existing and future urban development to the west and south west.

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 East Part 1 Precinct and establish a strong sense of place:

1. Help establish a sense of place by retaining and enhancing key features/characteristics of the Western Plains landscape character type
2. Enhance the amenity, habitat quality and recreational value of Merri Creek and its contributing drainage corridors
3. Protect and enhance panoramic and long-distance views to significant landmarks, such as Green Hill, Cleve Hill, Mt Disappointment, Spring Hill Cone and Mt Fraser
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. Develop interface treatments which are sensitive to the prevailing edge conditions.
6. 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 requires a series of qualitative (subjective) judgements to be made about landscape character and visual qualities. The conclusions of this assessment combines 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 East Part 1 Precinct in the Shire of Mitchell. The precinct is located approximately 40 kilometres north-west of Melbourne's CBD and is located to the east of the Wallan township.

Wallan East covers a total of 140 hectares and is bounded by Epping-Kilmore Road to the East, Wallan-Whittlesea Road to the South, the Melbourne to Sydney rail line to the west and Kelby Lane to the north. It is envisaged that land use will be designed to support and complement the existing Wallan township. Key landscape features in the precinct include Merri Creek, flat grassy plains and surrounding hill tops.

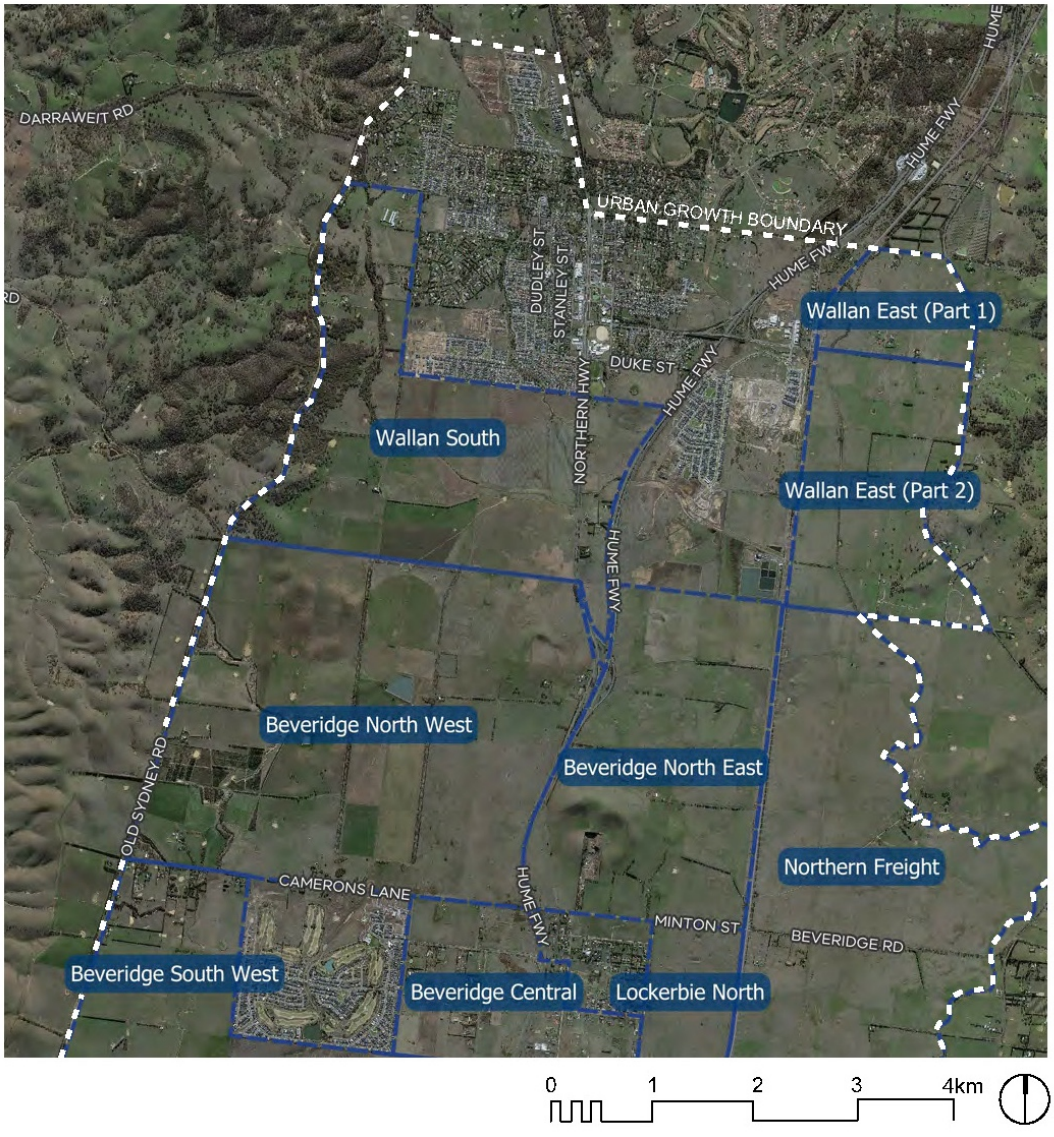


Figure 1 - Regional Context Aerial
Source: VPA (2020)

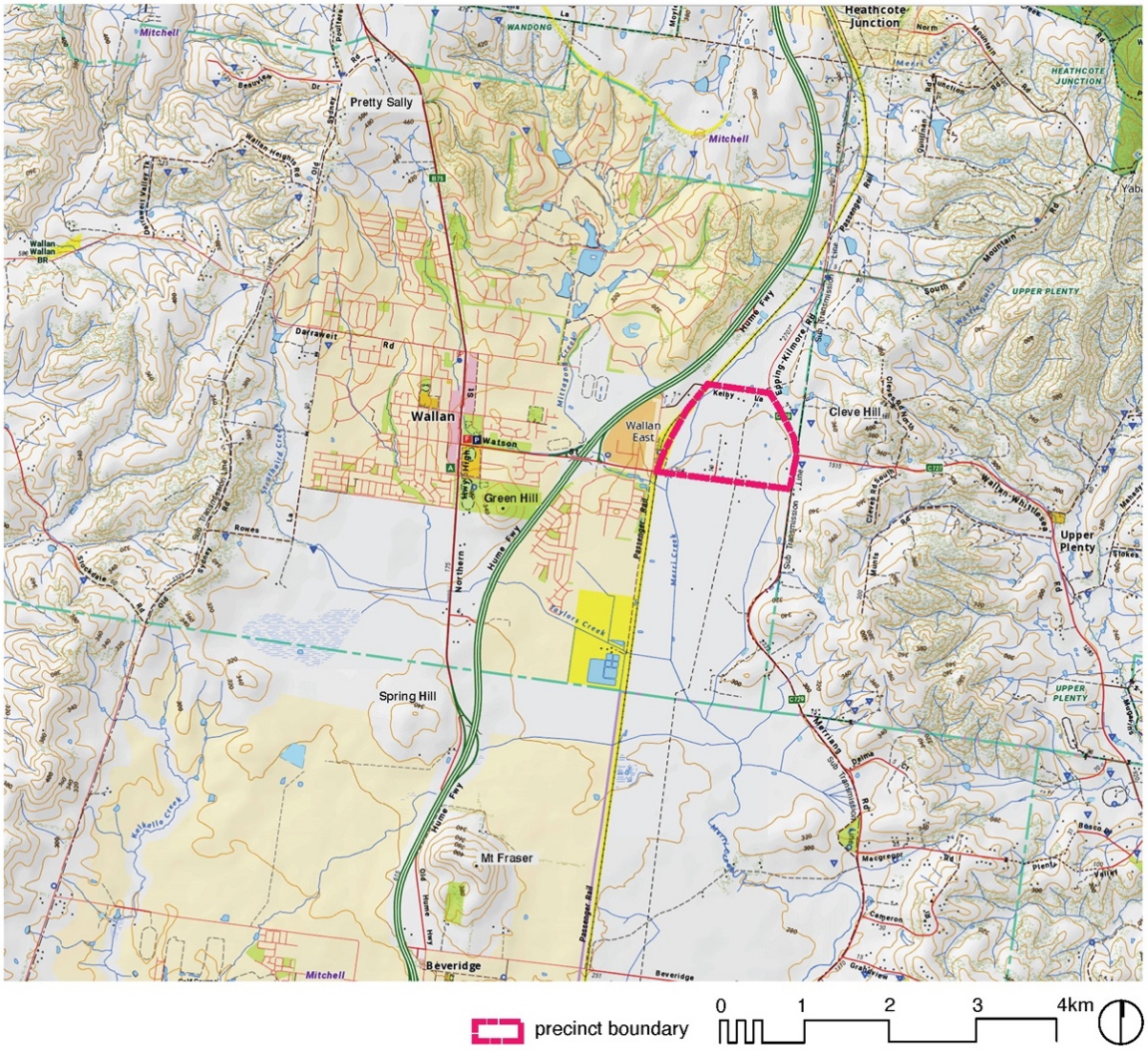


Figure 2 - Regional Context Map
Source: Emergency Management Victoria (2020)

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 includes 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 desktop review of photographic records based on aerial photographs, and google street view imagery
- A site inspection and field analysis and on-site photographic inventory 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 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 and east of the precinct is farmland and lies outside the Melbourne Urban Growth Boundary (UGB), which aligns with Kelby Lane and Epping-Kilmore Road.
Land west of the precinct on the west side of Merri Creek features the Wallan Station and developed and/or developing residential areas of the Wallan township. The land to the south of Wallan-Whittlesea Road is farmland and the future Wallan East Part 2 PSP.

View of precinct from Kelby Lane

5.2 Vegetation

The majority of the 140 hectare site has been cleared for agriculture. There are 4.59 hectares of remnant native vegetation in the study area. Of this, species diversity is low and weeds are prevalent. The remnant vegetation is consistent with Plains Swampy Woodland, Swampy Riparian Woodland and Tall Marsh Ecological Vegetation Classes. Additionally a fragment of Aquatic Herbland occurs at the edge of a dam.

A total of 35 individual remnant trees are scattered through parts of the site. Species include Eucalyptus camaldulensis (River Red Gum), Eucalyptus ovata (Swamp Gum), Eucalyptus polanthemos (Red Box) and Eucalyptus viminalis subsp. viminalis (Manna Gum).

Exotic species such as pine and cypress also present on the site, often in the form of windbreaks

Pine and cypress hedgerow/windbreaks on Kelby Lane

Remnant native trees on Epping-Kilmore Road

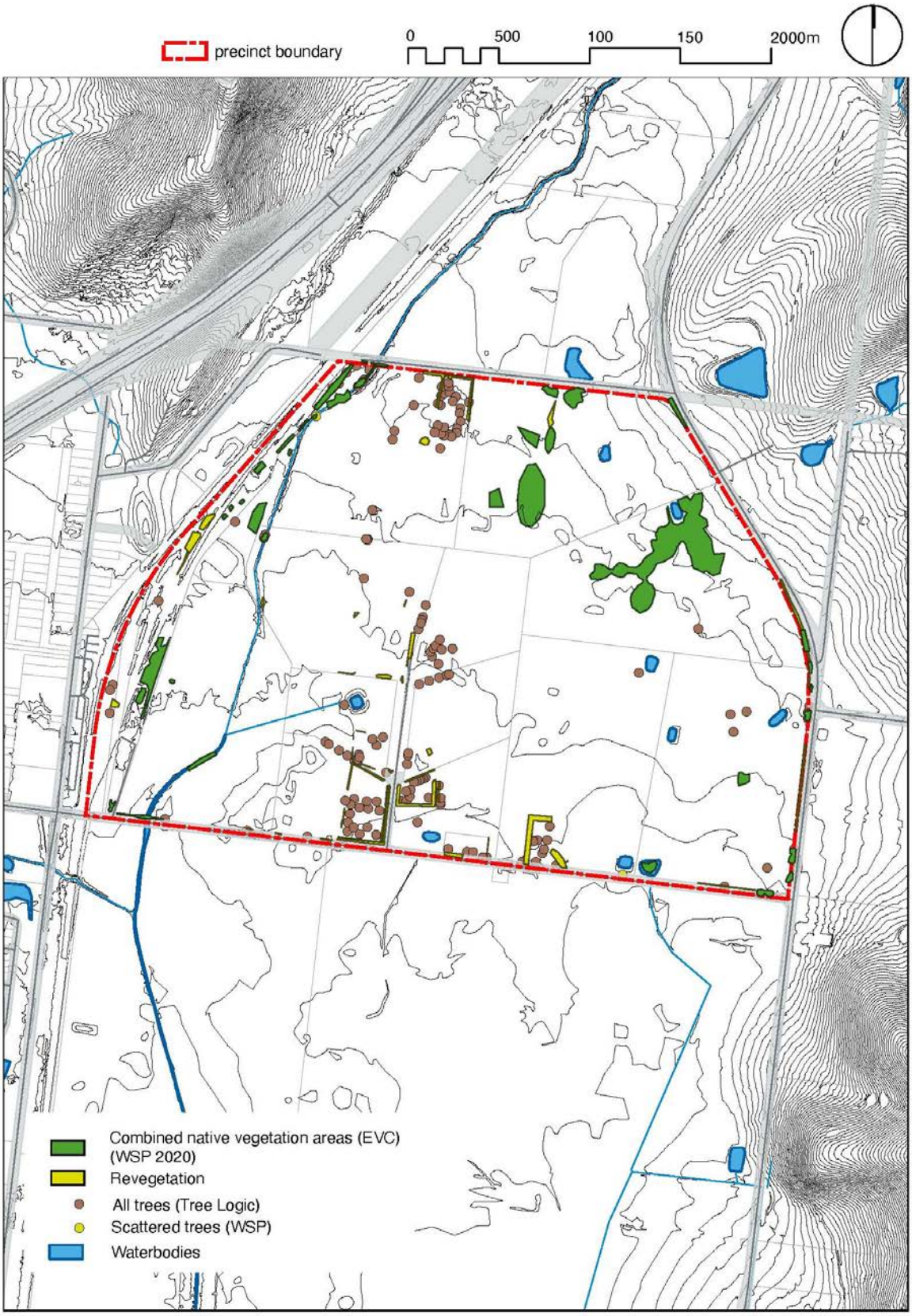


Figure 3 Vegetation

Source: VPA layers incorporating WSP (2020) analysis and Tree Logic (2020) tree locations

5.3 Water Form

Merri Creek traverses the site from the north to south along the precinct's western boundary. There are a number of farm dams throughout the precinct.

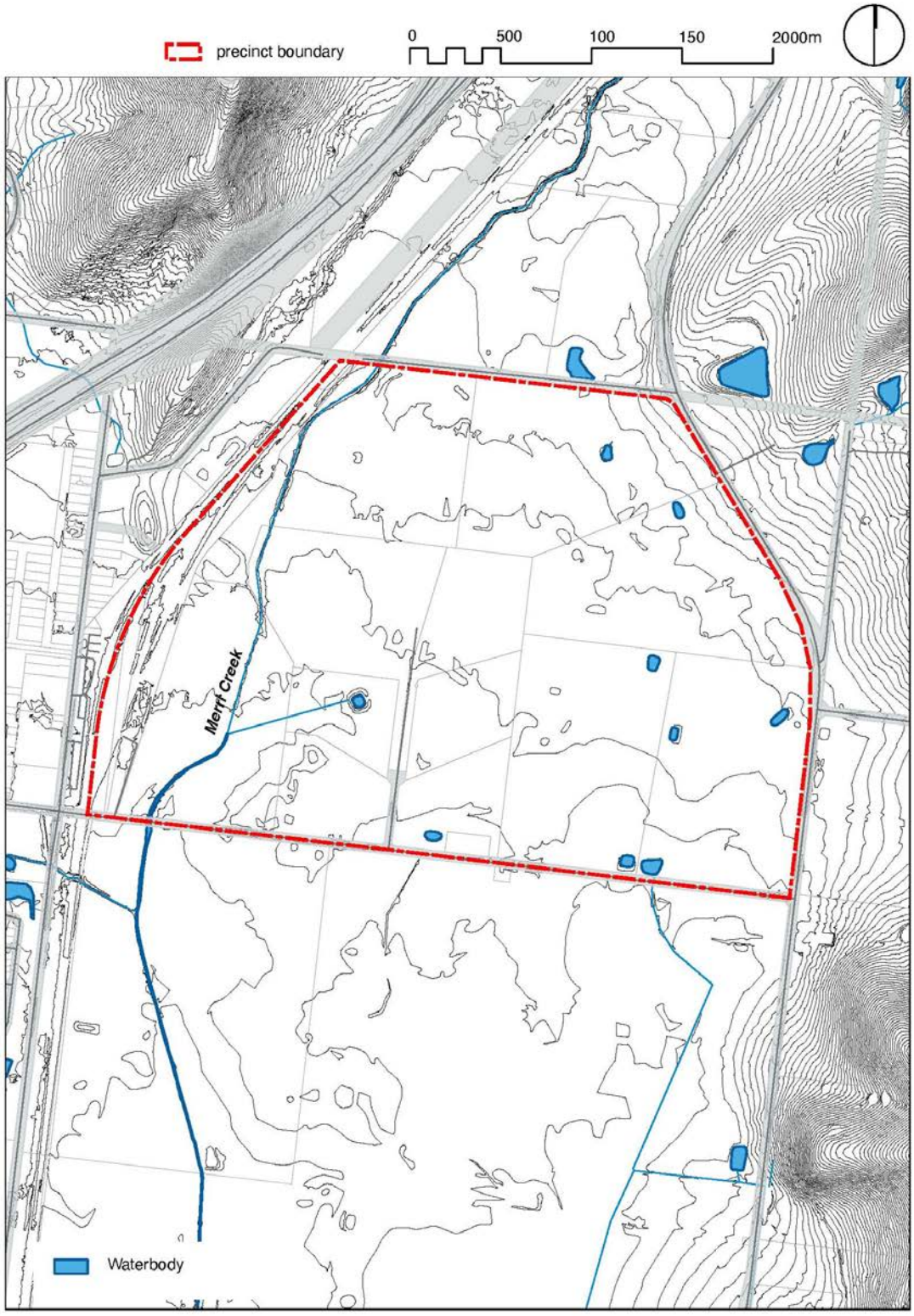


Figure 4 Water Form
Source: VPA GIS layers (2020)

5.4 **Overlays**

A number of overlays apply to the precinct including the Land Subject to Inundation Overlay (LSIO) and Flooding Overlay (FO) and Salinity Management Overlay (SMO). When combined with the very low topographic relief, he LSIO and FO present both a significant opportunity for creation of a waterway protection area and a constraint to development.

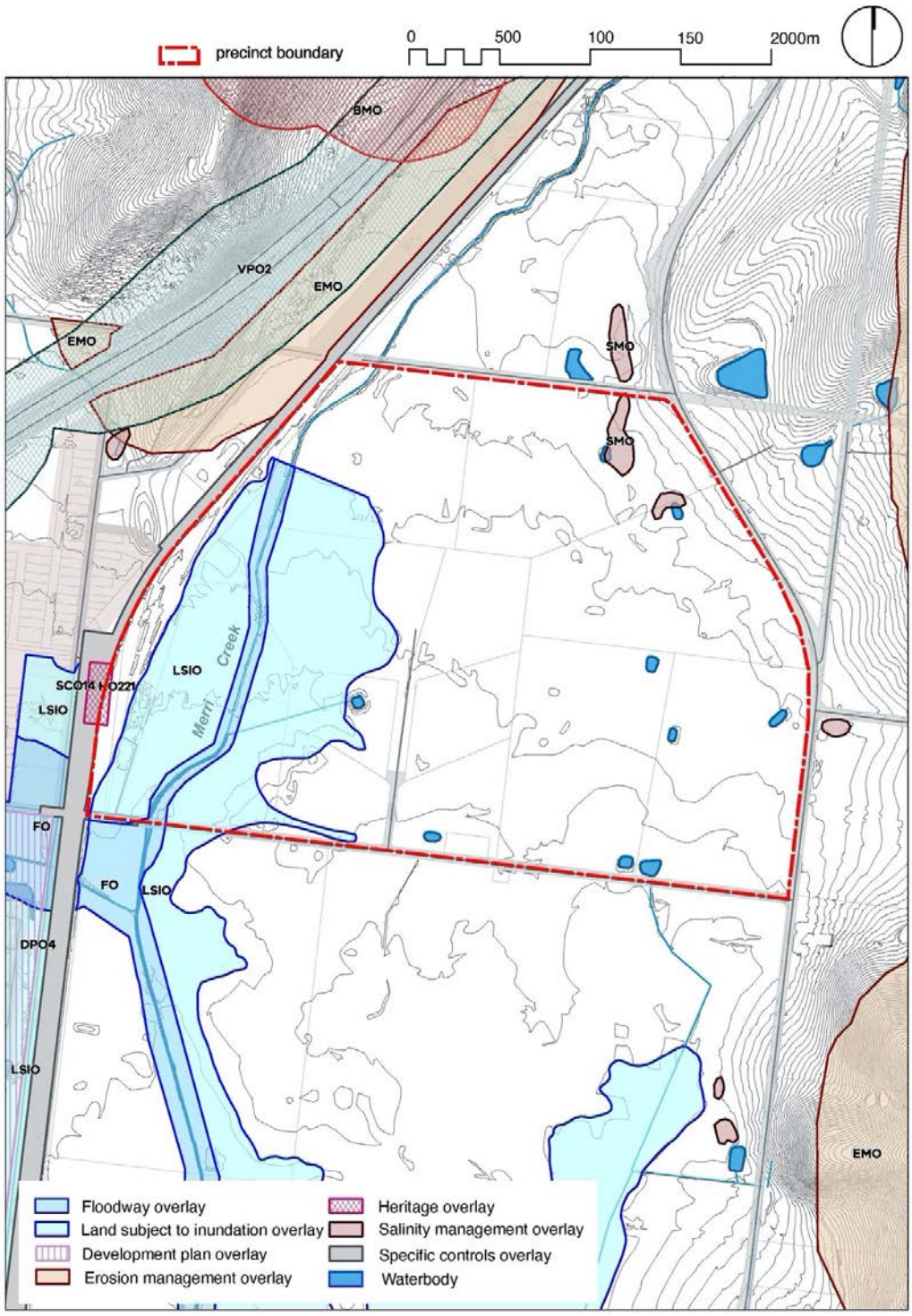


Figure 5 Overlays
Source: VPA GIS layers (2020) including DELWP overlays

5.5 Geology

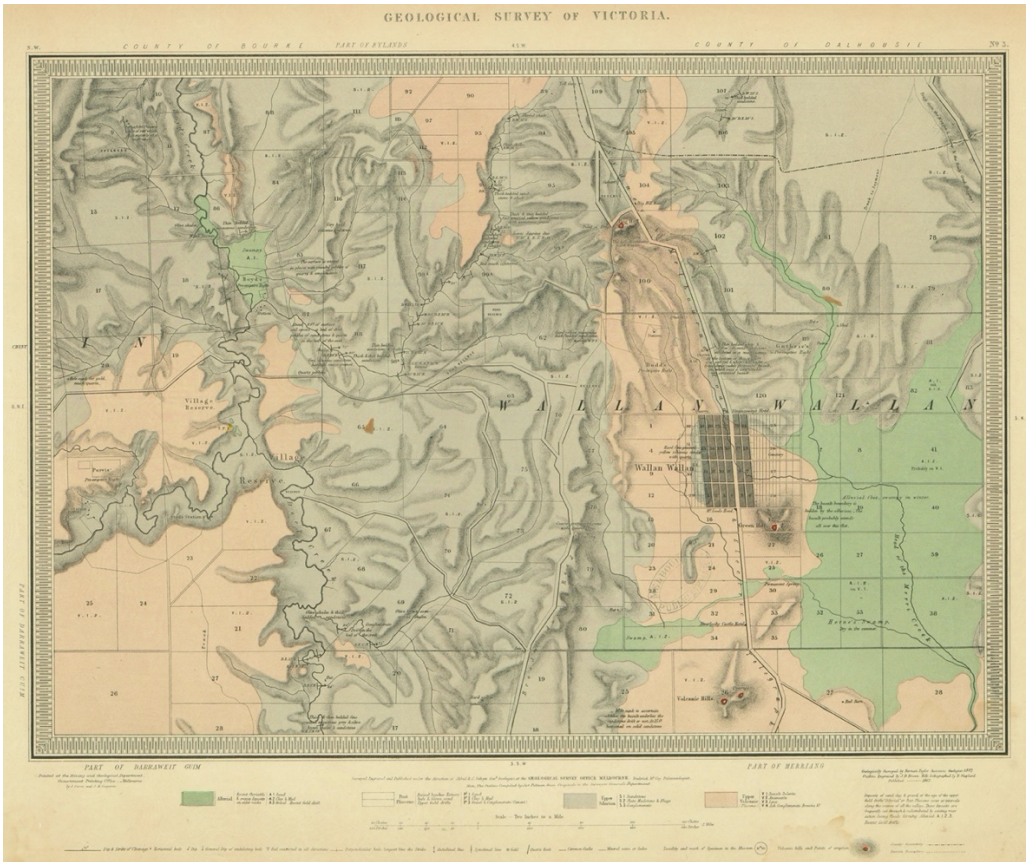


Figure 6 Historic Geological Map)
Source: Geological Survey of Victoria. (1862). [Parts of parishes of Wallan Wallan, Merriang, Darraweit Guim, and Bylands]

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, Spring Hill, Green Hill and Pretty Sally Hill. Green Hill lies to the south-west of the precinct. Mount Fraser (435 metres ASL) is another dominant feature to the south-west of the site, rising to a height of 125 metres above the basalt lava plain. Cleve Hill is a dominant topographic feature, rising up to the immediate east of the site. Mount Disappointment, an 800 metre ASL peak within the Great Dividing Range lies about 10 kilometres away to the east.

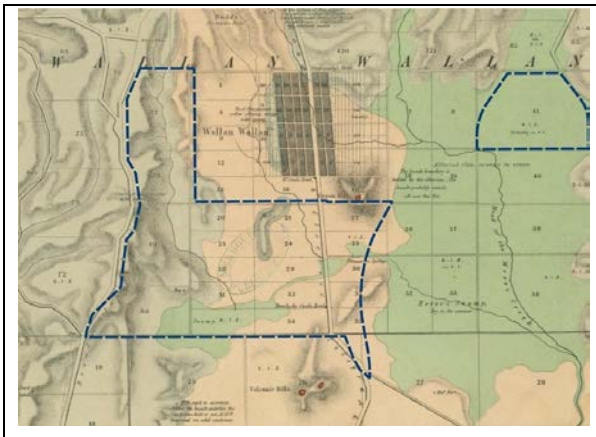


Figure 7 Historic Geological Map with current PSP Boundaries
Source: Geological Survey of Victoria. (1862).

5.6 Slope Analysis

Figure 7 provides an analysis of the slope/topography of the site. The map illustrates that the site is predominately flat with a slope of 0 to 5% across the majority of the site. This presents both an opportunity for urban development and a constraint as noted above in 5.4.1 Overlays. The Land Subject to Inundation and Flooding Overlay, when combined with the very low topographic relief, presents issues for overland and fluvial flooding which are a constraint to development. Those areas not subject to inundation are less constrained by slope issues.

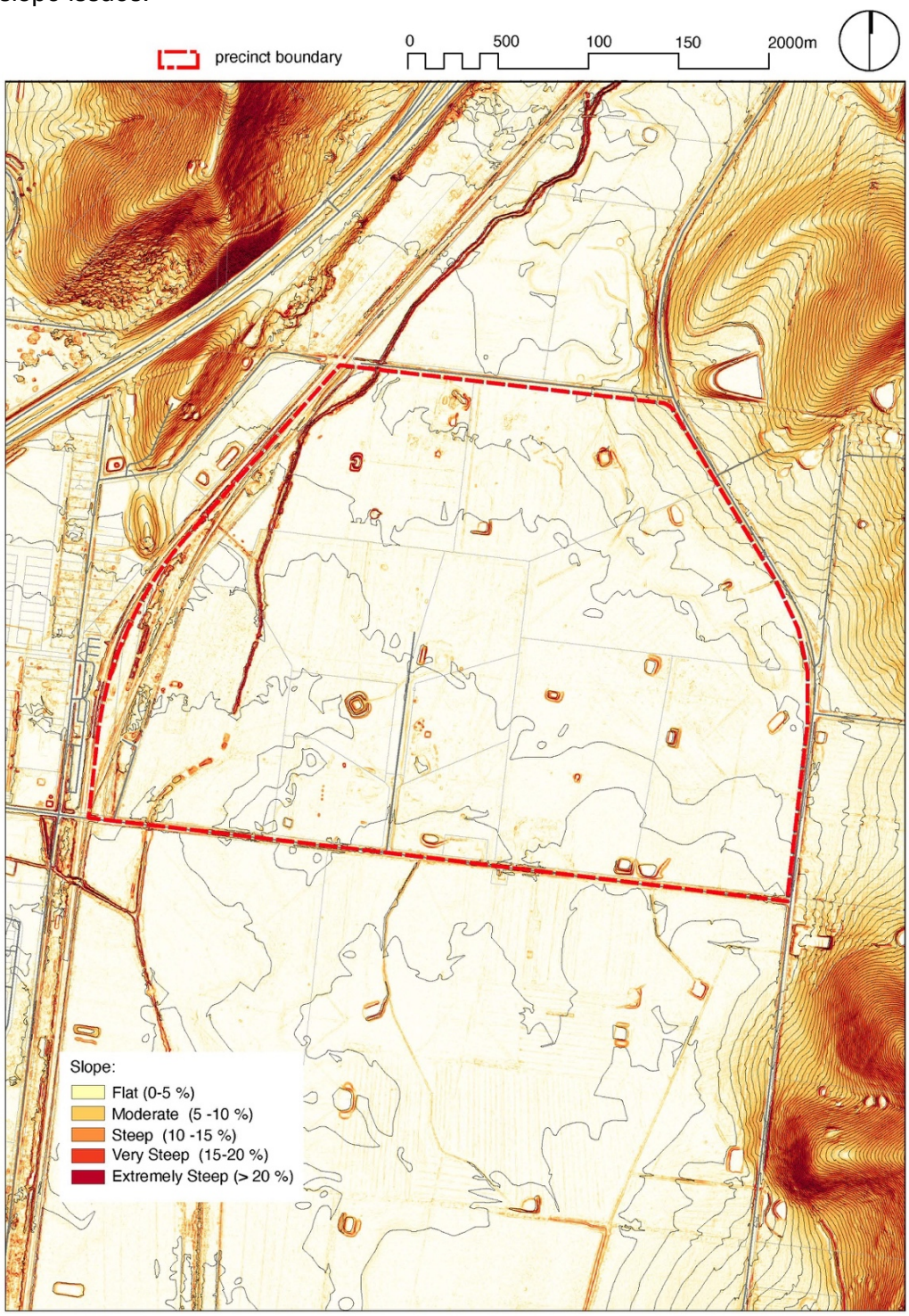


Figure 8 Slope Analysis
Source: VPA GIS layers (2020)

5.7 Vertical Infrastructure Elements

The study area is bounded to the west by the Melbourne to Sydney / North East Railway Line including Wallan Railway Station which has recently been upgraded. A level crossing with boom gates is situated on the Wallan-Whittlesea road, just east of Station Street.

The Wallan City Gate gas facility is located on the south side of Wallan-Whittlesea Road, just outside the boundary of the precinct. It comprises sheds, a water tank and various equipment surrounded by a cyclone wire enclosure. There are gravel areas immediately to the front and west side of the enclosure.

Overhead powerlines are present in the following locations:

- south side of Wallan-Whittlesea Road
- east side of Epping-Kilmore Road (south of Woodlands Place)
- west side of Epping-Kilmore Road (north of Woodlands Place)
- south side of Kelby Lane

Single streetlights are present in the following locations:

- both ends of Hart Court
- both intersections of Epping-Kilmore Road and Wallan-Whittlesea Road

An old bus shelter is located on Epping-Kilmore Road

Boom gates

Wallan City Gate gas facility

5.8 Significant Buildings

The Wallan Station Complex is included in the Victorian Heritage Inventory. It is located at 2-32 Station Street and straddles the southernmost portion of the precinct's western boundary. The station was opened in 1872.

The Heritage Inventory Description is as follows:

"This site is listed on the Heritage Overlay for the Shire of Mitchell (HO221). The extent and archaeological potential of the site has been identified on a series of rail archive plans.

Structural remains within the station complex located during the survey comprise two rows of power pole sites, six poles in each row. Each pole fits two caravans or temporary buildings, accommodating 24 temporary homes. The site also includes the station building, platform and signal box. Physical Conditions: Moderate to good."

Wallan Station

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.

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 Tract 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 co

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.

Wallan East is located in the Western Plains Landscape Character Unit.

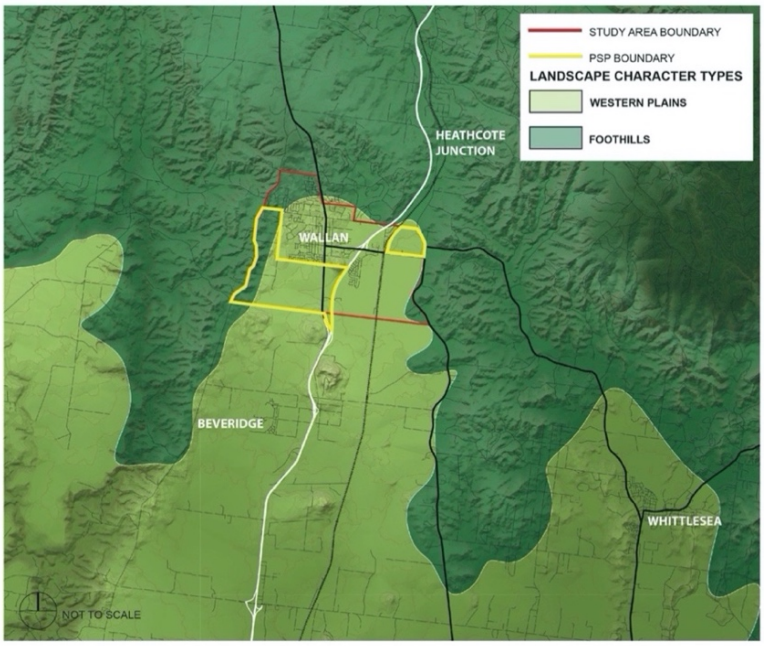


Figure 9 Regional Landscape Character Types *(Tract 2014)*

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)

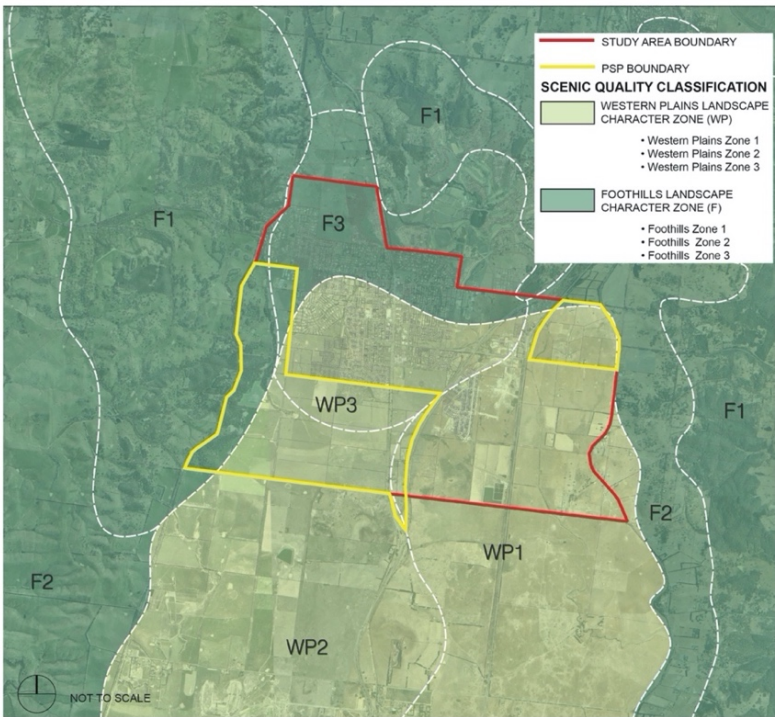


Figure 10 Scenic Quality Classification *(Tract 2014)*

"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)

It is noted that the Foothills Character 3 Type identified in the "coarser" assessment in the 2014 study, was not observed in a more detailed analysis of the precinct.

The landscape character type identified above is highlighted in the following table:

Landscape Character Zone	Key Landscape features	Scenic quality classification	Sensitivity to change
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

(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 East Part 1 PSP boundaries including the township of Wallan. This 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
- 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 East Part 1 Precinct forms part of the eastern edge of the Wallan township growth front and is bordered by the eastern edge of Melbourne's Urban Growth Boundary. It is separated from the town by the Hume Freeway and the Railway corridor. 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 north and east it will be important to maintain a softer transitional character along the urban- rural interfaces. A number of important interfaces have been identified including:

- Wallan Whittlesea Road interface (future BIFT)
- Epping -Kilmore Road Interface
- Sight lines to adjacent housing
- Kelby Lane

- The Railway Corridor
- East-west access into and out of the site.

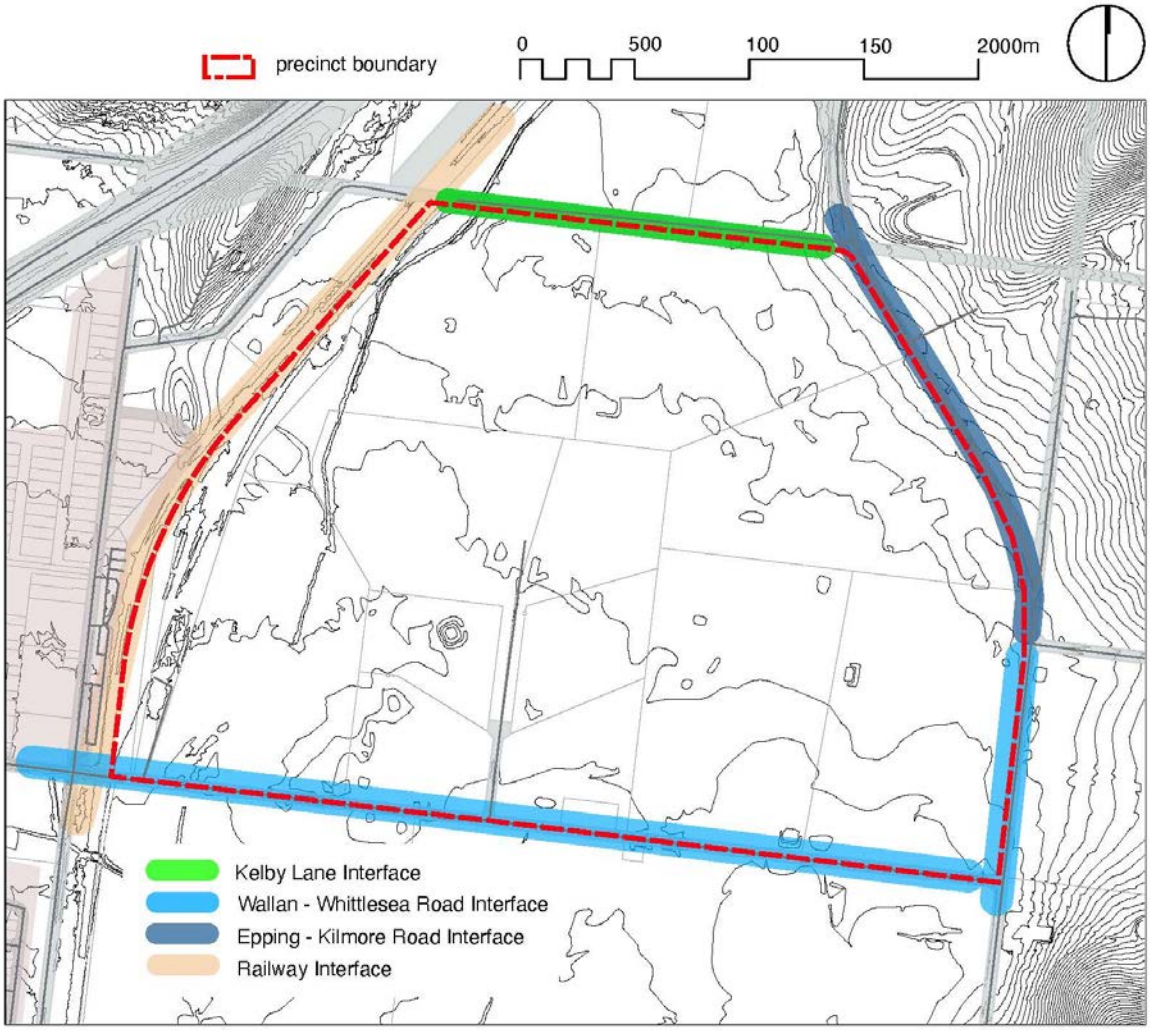


Figure 11 – Edge and Interface Conditions
Source: VPA GIS data and study team analysis

A series of recommendations and suggestions have been developed in section 13 Objectives and Recommendations for potential incorporation into the Wallan East Part 1 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 eastern edge of the precinct, Merri Creek as well as views from hilltops toward the precinct

- To retain and protect existing distant view lines of key landscape elements including Cleve Hill to the northeast, Green Hill, Spring Hill Cone, Mount Fraser, Mt Disappointment, and the Great Dividing Range

- To retain and protect existing significant trees (as identified in the arborist's assessment) by incorporating trees into open space, road reserves, widened road medians or easements where possible - subject to an arborist's assessment

- The pine windbreak in Kelby Lane provides a visual separator to the rural land to the north and a placemaking opportunity

- Potential to retain larger existing dams as part of Water Sensitive Urban Design (WSUD) for the precinct

- To link pockets of retained trees and other significant landscape elements with existing conservation areas 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 Merri Creek with planting and re-vegetation with native species utilising Water Sensitive Urban Design

- To use the necessary water retention basins and channels as urban greening opportunities and to create a linear open space network.

11.2 Constraints

The following constraints (others will be explored) will 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

- The crossing of Kelby Lane by Merri Creek is, at present, by 3 pipes which do not present a "natural" waterway condition

- 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

- The Wallan City Gate gas facility on Wallan - Whittlesea Road does not present well to the road and has limited screening opportunities

- The interface to the future BIFT Precinct opposite potential residential uses

- The interface to the rail line expansion area will require careful consideration
- Providing appropriate interface to existing and future urban development along key edges and interfaces while also protecting the rural uses outside the UGB.

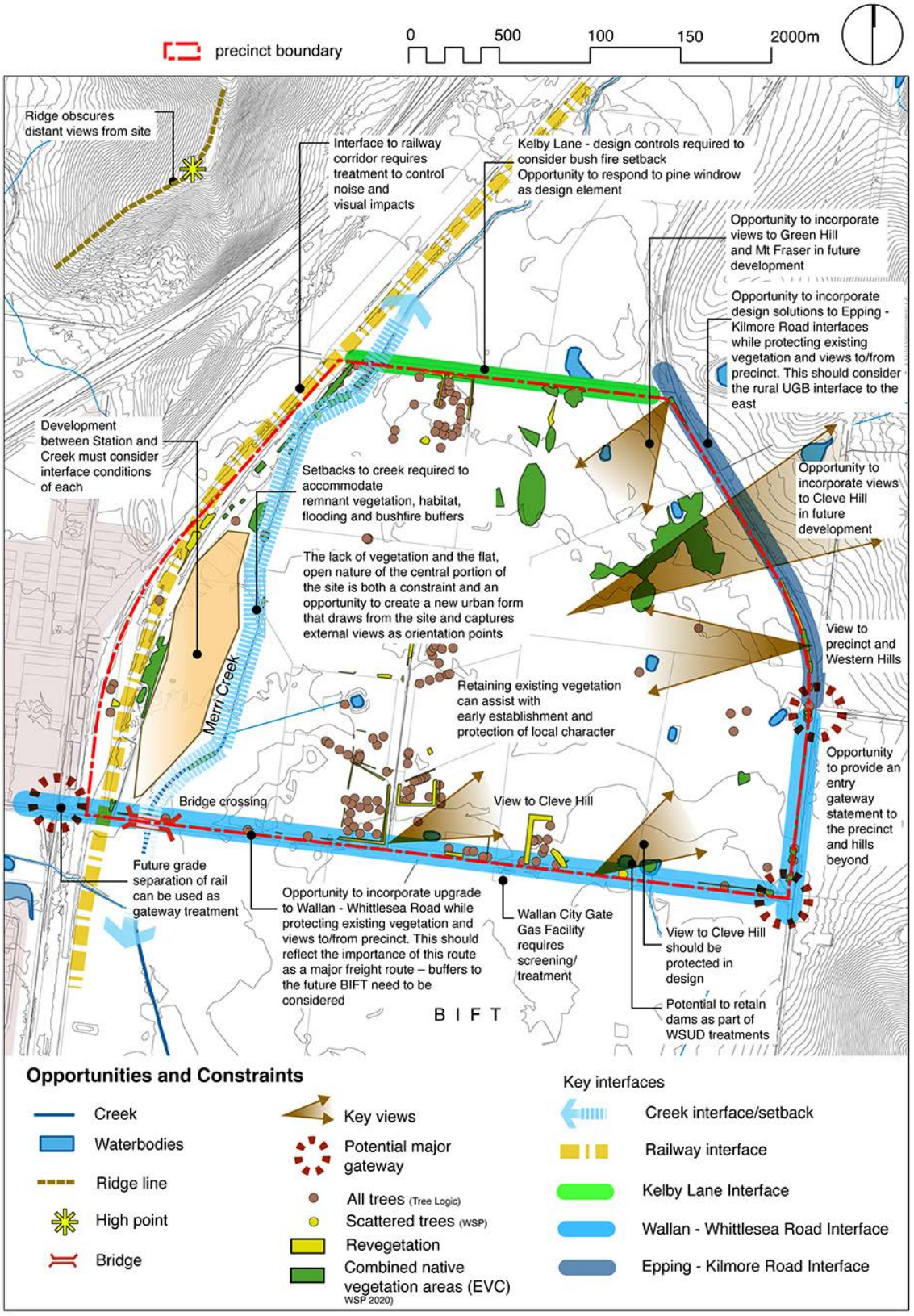


Figure 12 – Opportunities and Constraints
Source: VPA GIS data and study team analysis

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.

Retention of Existing Trees

Tree in Road Reserve

Tree protection zone (Planisphere 2014)

Lookout on Hill Top

Aerial of portion of precinct

Location – Tree Retention Lyndarum Estate, Epping North

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.

Comments

Bush Fire standards have been strengthened since Lyndarum was developed and must be considered more stringently.

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.

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.

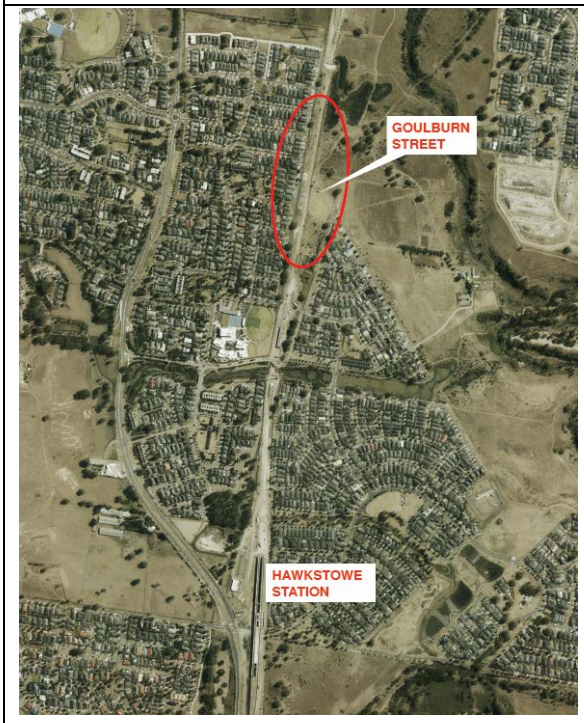
Comments

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.

Railway Interface – Mernda Rail Extension - Goulburn Street, Riverdale

Path meanders around established trees and allows for a planted mound to screen railcar wheels while allowing view to Gorge treetops

Shared truncated driveway preserves tree and stops through traffic and increases buffer from residences



Aerial of precinct with Plenty Road at left, Plenty River top right

Typical path alignment with safety fence at right

Shared driveway at Mango Crescent truncated to protect tree. Footpath continues through

Location – Railway Interface - Mernda Rail Extension adjacent to Plenty Gorge

This is an area of the Mernda Rail Extension between Mernda and Hawkstowe Stations where the elevated tracks return to grade. The rail line was placed next to an establishing residential area. The narrow strip of land has been used effectively as a shared path and as a landscape buffer incorporating remnant River Red Gums. Where space allows the path meanders between trees. There are planted mounds which screen the line (more in some places than others) The mounds mitigate noise from train wheels in places and also draw the eye to the tree canopy on the eastern side of the tracks

Railway Interface – South Morang Rail Extension - Border Drive, Mill Park

Aerial of precinct with South Morang Station at right

Cross section from rail to residential interface at right
Perimeter road provides excellent active and passive surveillance

Established trees were protected
Planted mounds provide acoustic barrier and visual screening of railway infrastructure. Shared path at boundary (left)

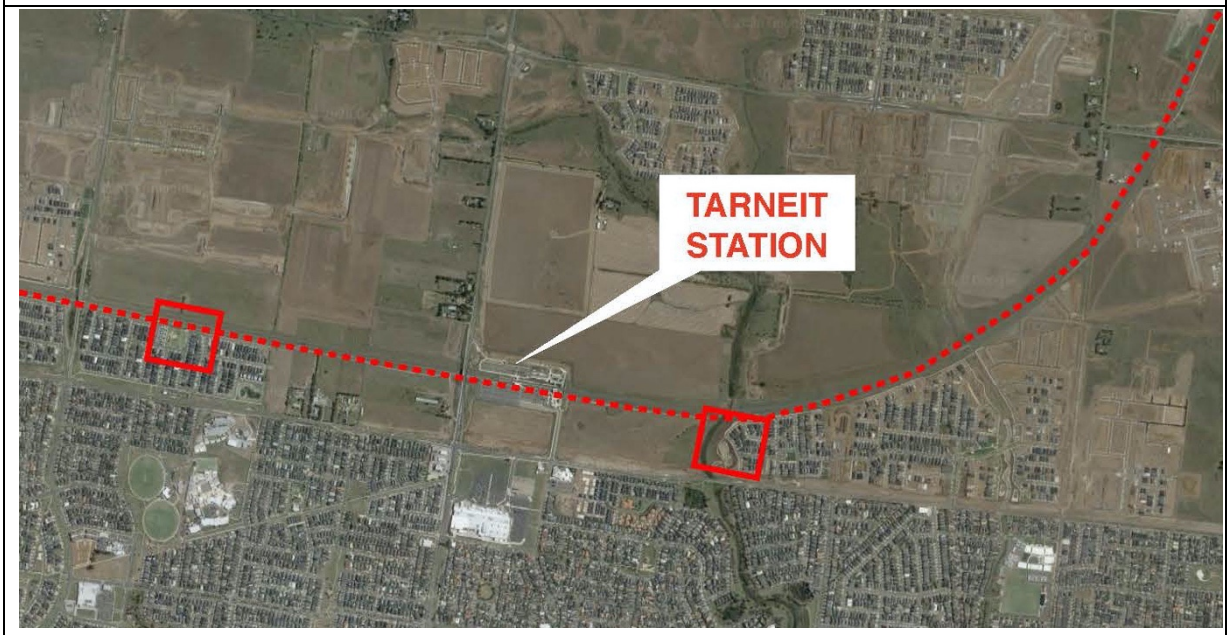
Closer aerial – railway at grade

View from Civic Drive overpass – rail cutting at right

Location – Railway Interface – South Morang Rail Extension adjacent to Border Drive

This is an area of the South Morang Rail Extension between Epping and South Morang Stations where the sunken tracks return to grade. The rail line was placed next to an established residential area in a previously used rail corridor. The narrow strip of land has been used effectively as a shared path and as a landscape buffer incorporating existing street trees. Where space allows the path meanders. There are planted mounds which screen the line (more in some places than others) The mounds mitigate noise from train wheels in some locations.

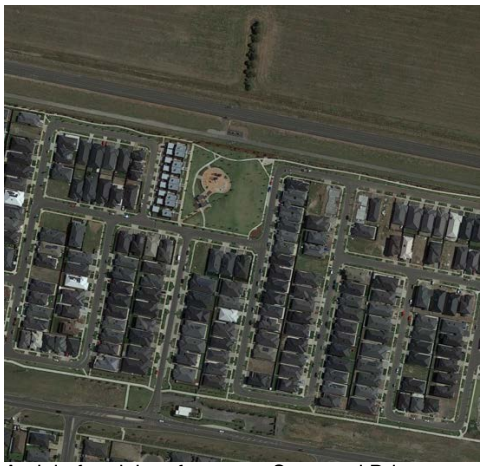
Railway Interface – Regional Rai - Border Drive, Tarneit



Aerial of precinct with Tarneit Station at centre

Aylesbury Avenue interface to rail features a shared path and vegetated WSUD swale treatment

Aylesbury Avenue interface to rail aerial showing WSUD wetland at Skeleton Creek



Aerial of park interface near Serengeti Drive

Serengeti Drive streetscape interface to rail

Location – Railway Interface – Regional Rail in Tarneit, Wyndham

This is a portion of the Regional Rail Link in Wyndham which features regional trains to/from Geelong. The narrow strip of land has been used effectively as a shared path and as a landscape buffer. The WSUD treatments are a strong feature in the landscape

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.

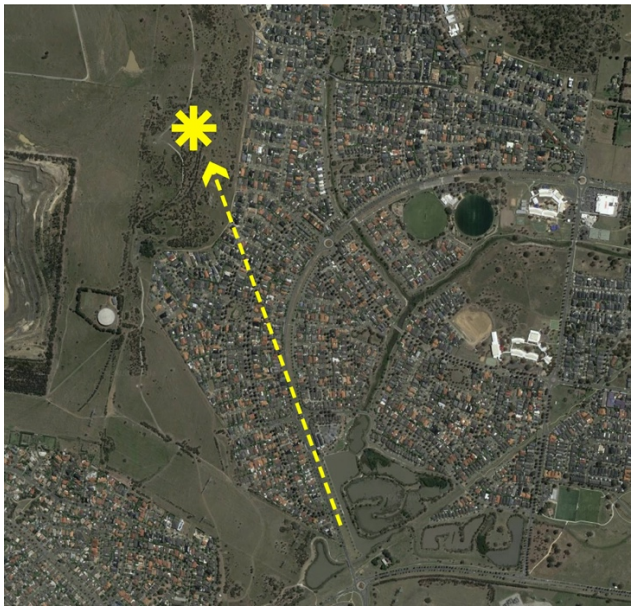
Comments

A successful integration of established trees and existing drive as linear open space – great placemaking opportunity

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 Estate



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.

13. Objectives and Recommendations

Objectives have been developed to help protect and enhance the landscape character of the Wallan East Part 1 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 Western Plains landscape character type	▪ 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: *"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." (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 Merri Creek and its contributing drainage corridors	▪ Protect and enhance the amenity, habitat quality and recreational value of Merri Creek 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 Merri Creek establish a linear green open space network across the precinct. ▪ Minimise road crossings of Merri 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). ▪ Minimise or prohibit the backing or siding of lots onto open spaces
3. Protect and enhance panoramic and long-distance views to significant landmarks, such as Green Hill, Cleve Hill, Mt Disappointment, Spring Hill Cone and Mt Fraser	▪ Key roads should be oriented to highpoints for wayfinding including Green Hill, Mount Fraser, Cleve Hill, Mt Disappointment, and the Great Dividing Range. (subject to ESD requirements)
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.

13.2 Interface/Edge Treatments

Objective	**Recommendations**
5. Develop interface treatments which are sensitive to the prevailing edge conditions.	▪ Create an appropriate interface to Wallan Whittlesea Road, Epping Kilmore Road, Kelby Lane and the rail line which provides surveillance opportunities while also protecting amenity of residents and users ▪ Protect, enhance and incorporate roadside vegetation of Kelby Lane. ▪ Protect, enhance and incorporate roadside vegetation in the Wallan Whittlesea Road, Epping Kilmore Road cross sections. Along the rail corridor

	future acoustic treatment (if provided) should incorporate local landscape character elements and palette and allowance for sufficient setbacks to allow visual softening of walls with vegetation. ▪ Use larger lot sizes, built form envelopes and offsets to provide a sensitive visual transition between the urban areas of Wallan East Part1 PSP and the steeper, rural wooded areas east of Wallan Whittlesea Road and Epping Kilmore Road ▪ Respond to the potential edge treatments of the BIFT Interface (refer. Development at Wallan - Whittlesea Road and BIFT interface in recommendations section) ▪ Develop appropriate connections to the existing open space networks and paths in Wallan township and Wallan Station.

13.3 Vegetation

Objective	Recommendations
6. 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. ▪ Minimise clearing of roadside vegetation where feasible and subject to fire protection setbacks.

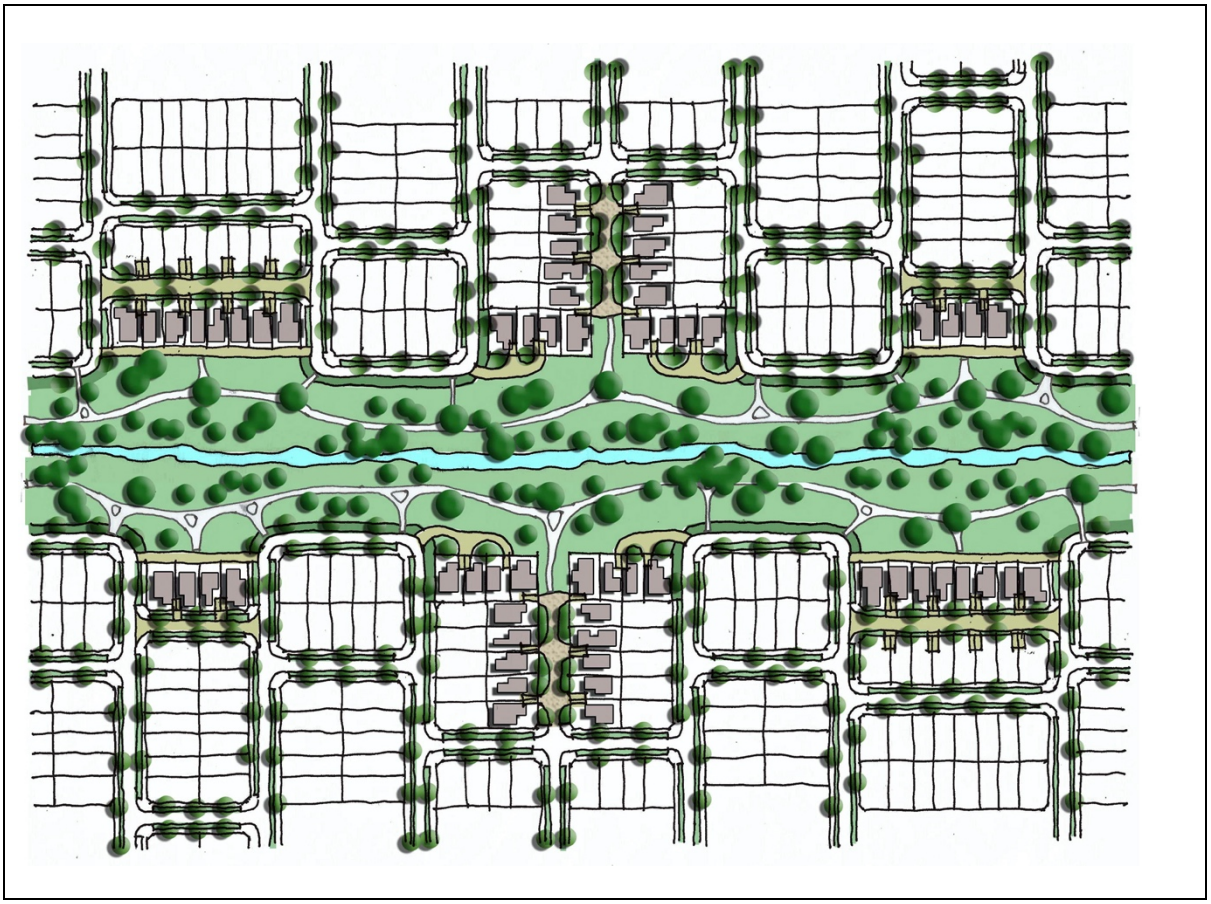
13.4 Recommendations:

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

Development at creek side interface to Merri Creek

A key consideration for development at creek side interface to Merri Creek 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
- Bushfire attack separation required
- 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 township
- 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
- Variable lot interface types and lot sizes

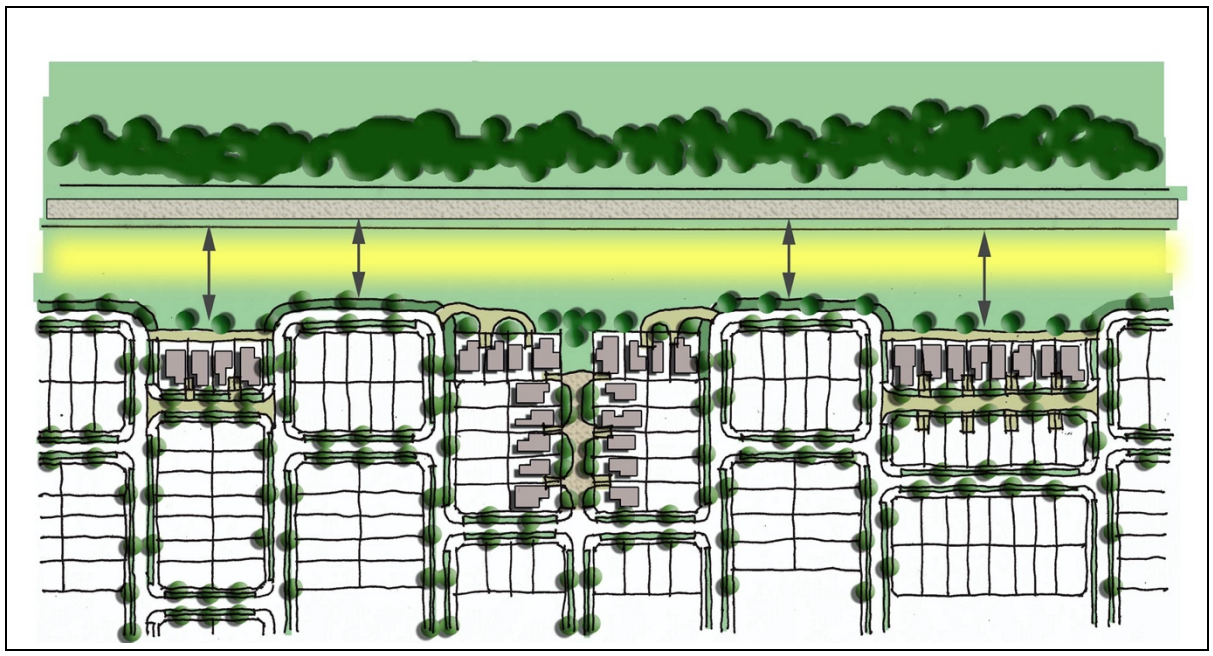


Variable creek side interfaces (Note: creek corridor width will vary considerably)

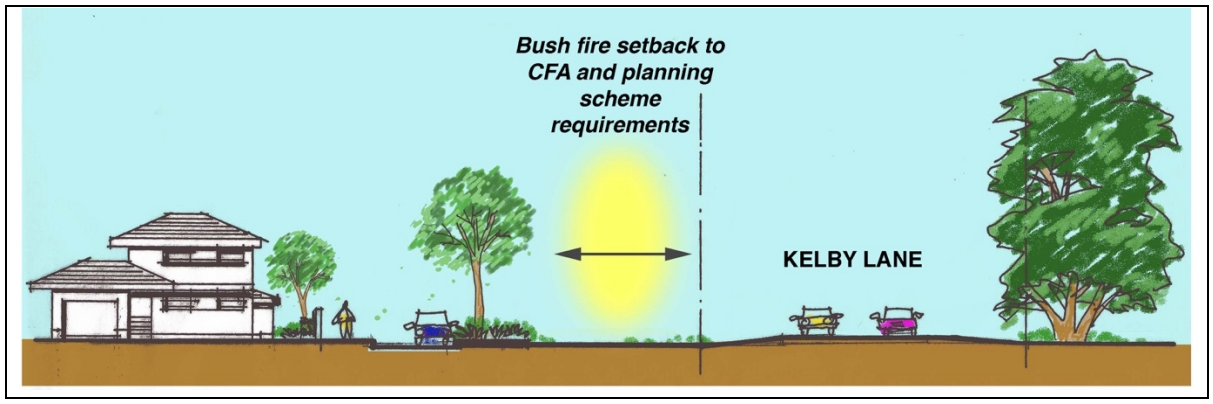
Development at Kelby Lane interface

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

- Continuity of major remnant exotic and indigenous vegetation with infill planting in gaps
- Bushfire attack separation required
- Linear open space with shared walking/cycling trail
- Potential equestrian trail
- Active surveillance from variable urban edge treatments
- Loop road to residential and other layouts
- Locate crossing streets in existing vegetation gaps



Kelby Lane interfaces

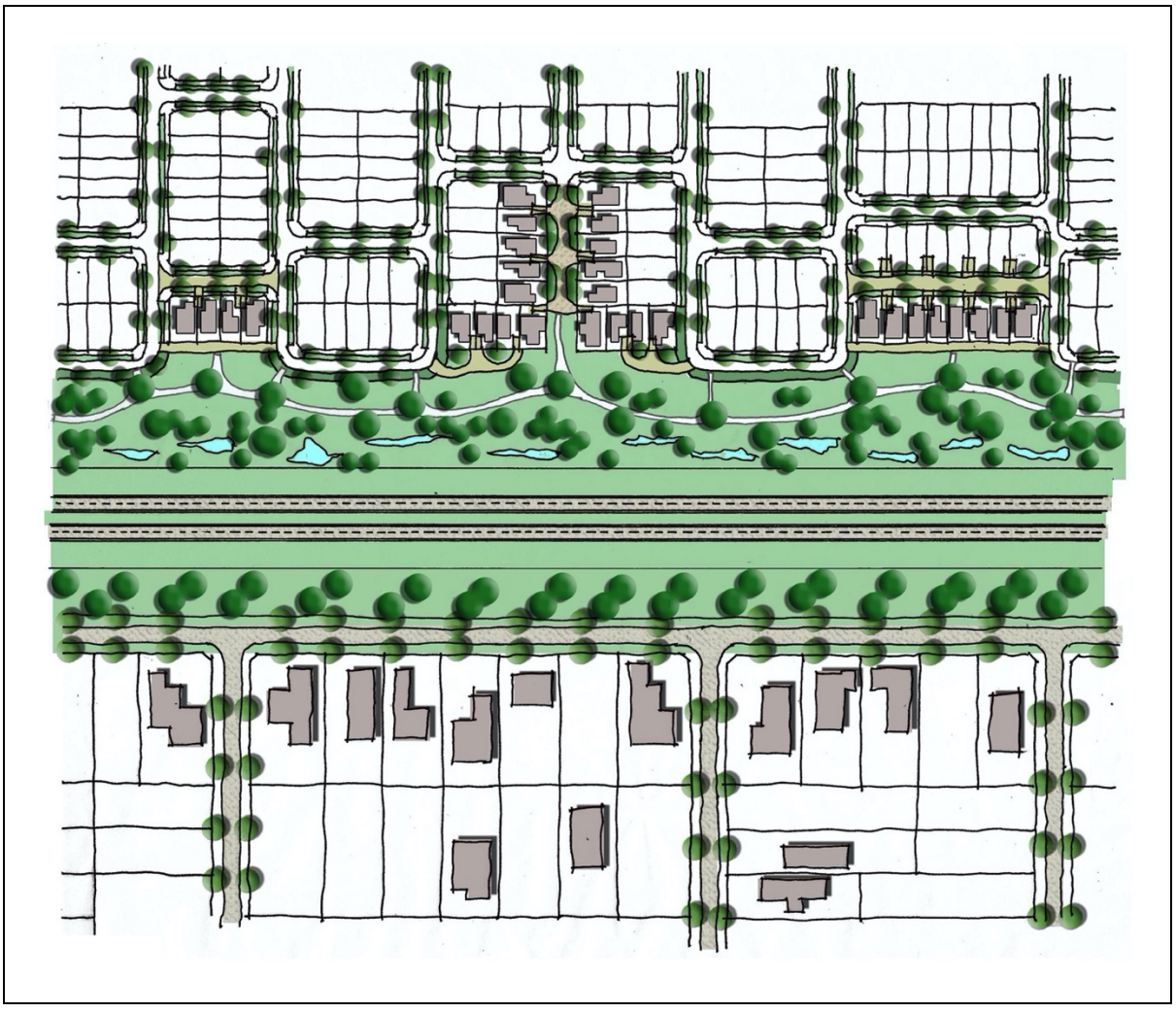


Kelby Lane interface section

Development at Wallan – Whittlesea Road and BIFT interface

A key consideration for development at the future arterial road upgrade interfaces is to the potential edge treatments of the future BIFT interface. Allow for a:

- Continuity of major remnant exotic and indigenous vegetation with infill planting in gaps
- Bushfire attack separation required
- Creation of a linear open space with shared walking/cycling trails on edges
- Active surveillance from variable edge treatments
- Incorporate WSUD treatment on edge to provide a further separation



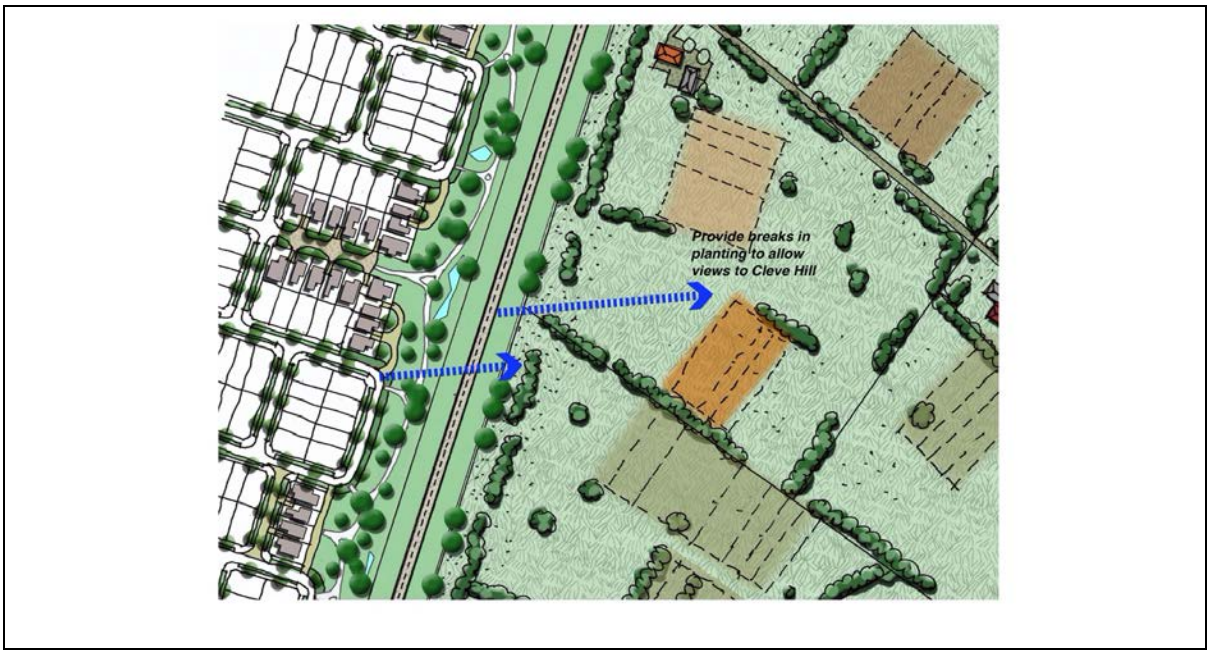
Plan view of potential BIFT interface (BIFT at bottom)

- Protect, enhance and incorporate roadside vegetation in Wallan - Whittlesea Road and Epping - Kilmore Road cross sections.
- 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.
- 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

Development at Epping - Kilmore Road interface

A key consideration for development at this road upgrade interfaces is to protect the rural character opposite the east as a key placemaking element. Allow for a:

- Continuity of major remnant exotic and indigenous vegetation with infill planting in gaps
- Views to Cleve Hill through breaks in planting
- Bushfire attack separation required
- Creation of a linear open space with shared walking/cycling trails on edges



Plan view of Epping -Kilmore Road interface to rural area

- Active surveillance from variable edge treatments
- Protect, enhance and incorporate roadside vegetation in Epping - Kilmore Road cross sections
- 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

Development at Railway Interfaces

A key consideration for development at the future rail line and Wallan Station future rail upgrade interfaces is the amenity of residential areas to the east.

This will also require consideration of the impact on the Merri Creek corridor.

- Provide landscape and built form treatments to buffer noise and visual impacts of rail corridor
- Ensure active surveillance of corridor
- Refer case studies

13.5 Conceptual development control areas

The plan below is a conceptual arrangement of the preceding recommendations with edge controls suggested along Merri Creek, major roads and the rail line described in the previous section.

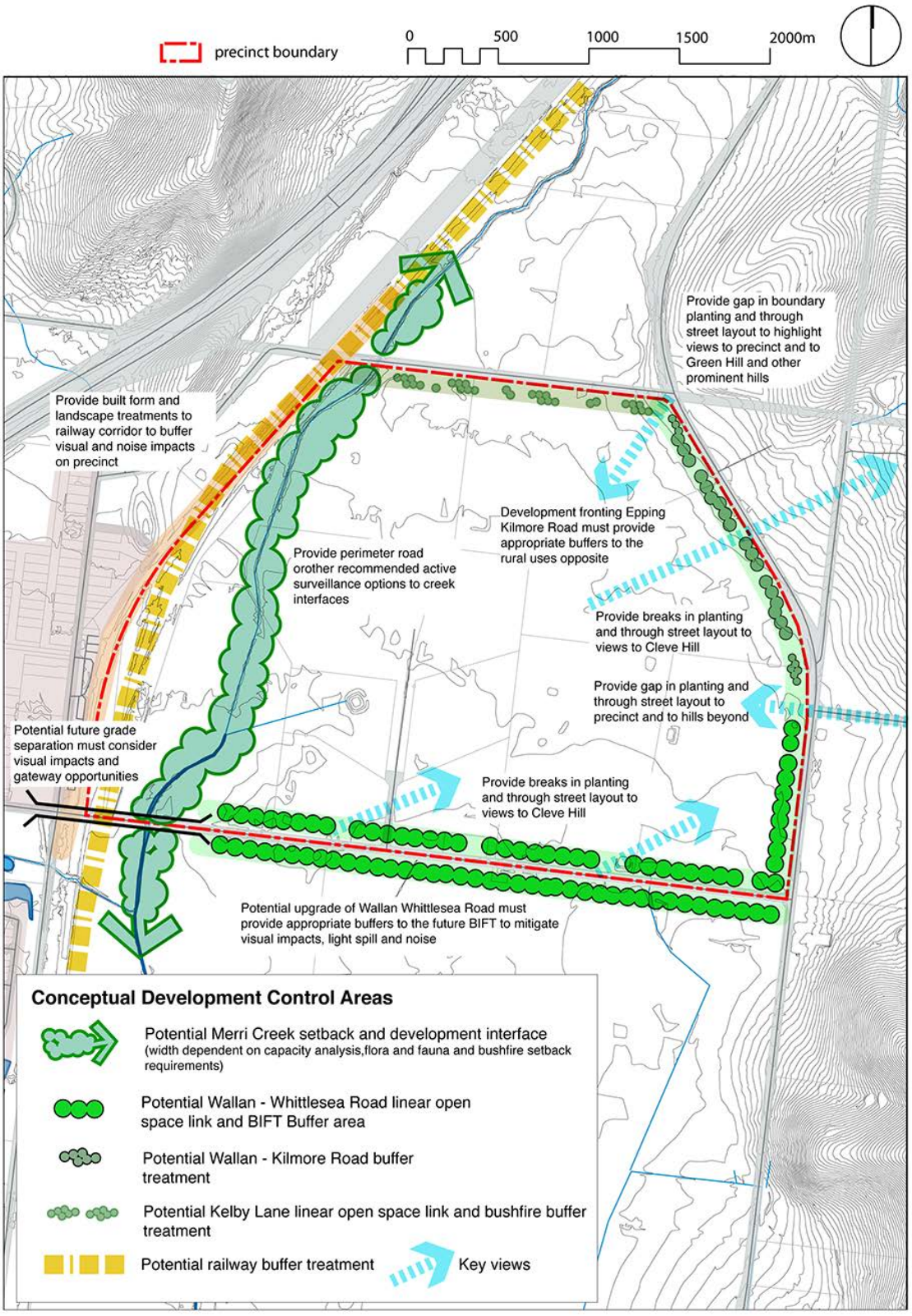


Figure 13– Conceptual Development Control Areas
Source: VPA GIS data and study team analysis

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. A field inspection was then made on November 13, 2020 following the lifting of COVID-19 travel restrictions. 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 car roof to produce composite images. Our on-site images were taken with a 50mm focal length lens (the industry standard for 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 composite image

50 mm lens image November 2020

Photo Location	Wallan Whittlesea Road
Direction	East
Landscape Character Type	Western Plains Zone 1
View Type	Foreground, Middle Ground, Background
Comments	Gateway to the precinct from Wallan township. The railway crossing is in the foreground, and low hills appear in the background. Mount Disappointment lies on the horizon and aligns with the road.

Viewpoint 2 - north

Google Street View wide-angle composite image

Photo Location	Wallan Whittlesea Road
Direction	North
Landscape Character Type	Western Plains Zone 1
View Type	Middle Ground, Background
Comments	Vegetation along the Merri Creek corridor. The creek passes under the road at this point and heads south

Viewpoint 2 - south

Google Street View wide-angle composite image

iPhone image November 2020

Photo Location	Wallan Whittlesea Road
Direction	South
Landscape Character Type	Western Plains Zone 1
View Type	Middle Ground, Background
Comments	Merri Creek and the open grassy plain immediately to the south of the precinct. Mount Fraser is visible in the background to the right of the creek

Viewpoint 3

Google Street View wide-angle composite image

Composite image November 2020

Photo Location	Wallan Whittlesea Road (intersection with Hart Court)
Direction	North-east
Landscape Character Type	Western Plains Zone 1
View Type	Middle Ground, Background
Comments	Cleve Hill is prominent to the left and Mount Disappointment is visible on the horizon. A windbreak of Eucalyptus is visible to the right.

Viewpoint 4

Google Street View wide-angle composite image

50mm lens November 2020

Photo Location	Hart Court
Direction	East
Landscape Character Type	Western Plains Zone 1
View Type	Foreground
Comments	Residences at the top of the court, together with cypress windbreaks. Cleve Hill appears to the right of the red brick residence.

Viewpoint 5

Google Street View wide-angle composite image

50 mm lens November 2020

Photo Location	Wallan Whittlesea Road
Direction	West
Landscape Character Type	Western Plains Zone 1
View Type	Foreground
Comments	The unscreened Wallan City Gate gas facility is directly opposite the site at this point

Viewpoint 6

Google Street View wide-angle composite image

50mm image November 2020

Photo Location	Epping-Kilmore Road at southern intersection with Wallan-Whittlesea Road
Direction	North-west
Landscape Character Type	Western Plains Zone 1
View Type	Foreground, Middle Ground, Background
Comments	This is the south-east corner of the precinct. The site is relatively flat and open. Hills are visible on the horizon

Viewpoint 7

Google Street View wide-angle composite image

50 mm lens November 2020

Photo Location	Wallan-Whittlesea Road at northern intersection with Epping-Kilmore Road
Direction	West
Landscape Character Type	Western Plains Zone 1
View Type	Foreground
Comments	A row of mixed species trees obscures the view directly ahead.

Viewpoint 8

Google Street View wide-angle composite image

Composite image November 2020

Photo Location	Epping-Kilmore Road (intersection with Kelby Road)
Direction	South-west
Landscape Character Type	Western Plains Zone 1
View Type	Middle Ground, Background
Comments	View looking down Kelby Lane and across the flat, open site to the left. Mount Fraser, Spring Hill and Green Hill are visible in the background. A pine windbreak is seen on the far right

Viewpoint 9

Google Street View wide-angle composite image

50 mm lens November 2020

Photo Location	Kelby Lane
Direction	East
Landscape Character Type	Western Plains Zone 1
View Type	Foreground, Middle Ground, Background
Comments	A mature pine windbreak encloses the view on the left side of the road. A cypress windbreak is seen on the right together with the fence of a residence. Cleve Hill is visible at the end of the lane

Viewpoint 10

Google Street View wide-angle composite image

Photo Location	Kelby Lane
Direction	South
Landscape Character Type	Western Plains Zone 1
View Type	Foreground
Comments	Merri Creek passes under Kelby Lane in a three-pipe culvert

Viewpoint 11

Google Street View wide-angle composite image

Composite image November 2020

Photo Location	Kelby Lane
Direction	South-east
Landscape Character Type	Western Plains Zone 1
View Type	Middle Ground, Background
Comments	At this point the land to the east is relatively flat with scattered native and exotic trees. Cleve Hill is visible at the end of Kelby Lane.

Viewpoint 12

Composite image November 2020

Photo Location	Railway line reservation
Direction	North-west
Landscape Character Type	Western Plains Zone 1
View Type	Middle Ground, Background
Comments	A relatively flat open area with hills visible in the background including Cleve Hill to the right

Viewpoint 13

50mm lens image November 2020

Photo Location	Station Street
Direction	North-west
Landscape Character Type	Western Plains Zone 1
View Type	Middle Ground, Background
Comments	Wallan Station and car park

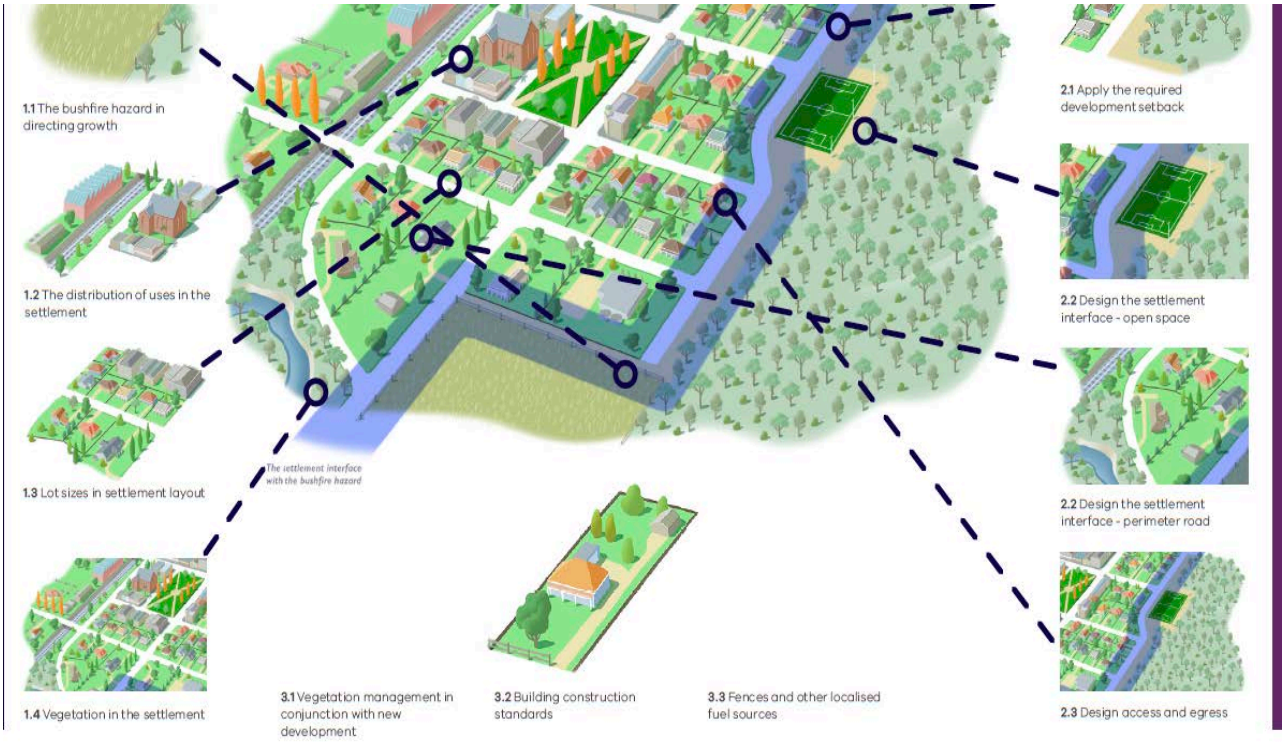
Appendix Two – Design Guidelines Settlement Planning at the Bushfire Interface

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



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.

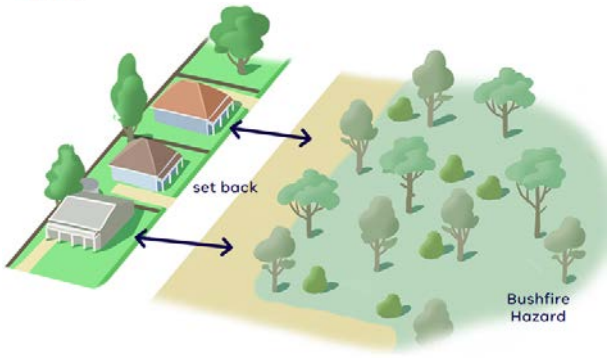


Figure 5: Apply the required setback from the hazard

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 East Precinct, Victorian Planning Authority / WSP (2020)
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