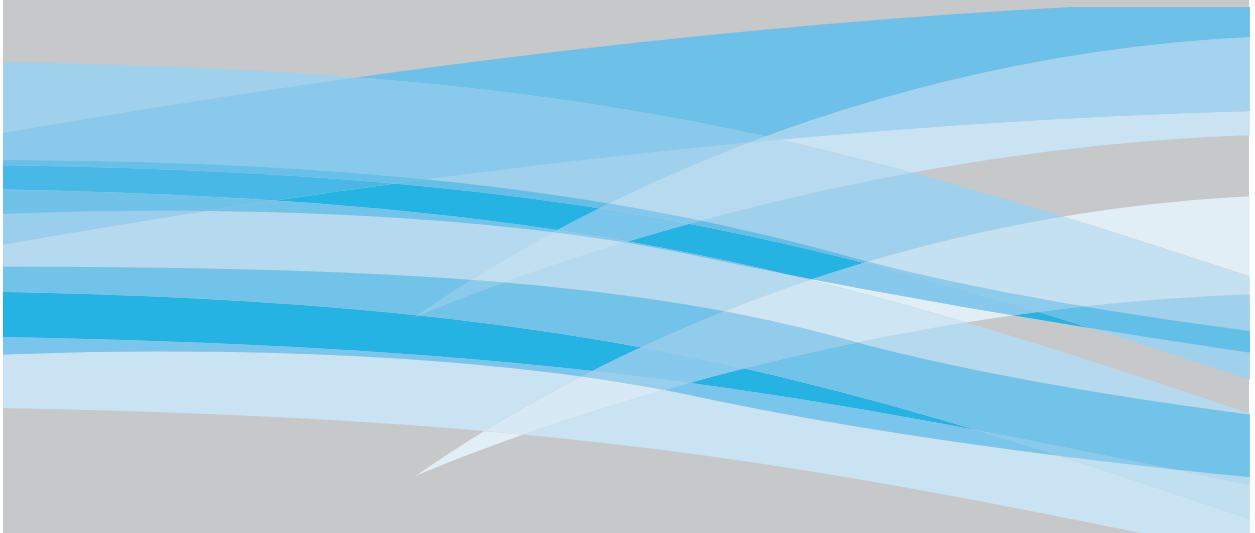


# WOLLERT - PSP 1070

Context and Background Report  
August 2012





**City of  
Whittlesea**



# 1. INTRODUCTION

The City of Whittlesea (CoW), in partnership with the Growth Areas Authority (GAA), has commenced preparation of the Wollert Precinct Structure Plan, which will establish the urban and open space framework for a new community of approximately 35,000 people (medium development scenario).

The Precinct Structure Plan (PSP) will identify the future location of housing and will provide for a wide variety of housing choice. In addition, it will create local employment areas, parks, open space networks and green corridors, a new major town centre and neighbourhood shopping centres along with social and community infrastructure. All of this will be supported by a network of transport options, including footpaths, cycle networks and the integration of public transport as key elements.

As part of the preparation of the PSP, a number of background studies have been completed that will help to inform and shape the planning for this new community.

The purpose of this document is to provide a brief overview and summary of the findings of this background work. It includes an outline of the wider regional and local context for Wollert, a summary of the key features of the PSP area. It also includes a summary of the following phase 1 background technical reports which have been prepared by specialist consultants to inform the preparation of the Wollert PSP:

- Aboriginal and Historical Heritage Assessment (Ecology and Heritage Partners)
- Arboricultural Assessment (Tree Logic)
- Biodiversity Assessment (WHP)
- Corridor Level Transport Modelling (Sinclair Knight Merz)
- Activity Centre and Employment Analysis (Essential Economics)
- Social and Community Infrastructure Assessment (ASR Research)
- Phase 1 Catchment Analysis (CPG Australia Pty Ltd)
- Integrated Water Management Strategy (CPG Australia Pty Ltd)
- Utilities Infrastructure Servicing Assessment (CPG Australia Pty Ltd)
- Phase 1 Environmental Site Contamination Assessment (Cardno Lane Piper)
- Hanson Landfill and Quarry Risk Assessment (Golder Associates)

Complete Phase 1 background technical reports will be made publicly available.

**Landowners and interested parties are now invited to consider the background reports and their conclusions and recommendations and provide any written comments back to Council by Friday 7 September 2012. You are not obliged to make a submission at this stage and there will be further opportunity to comment as the Precinct Structure Plan is prepared. All comments will be considered by the City of Whittlesea and the Growth Areas Authority however, no assurances are made as to whether submissions will result in changes to background technical material.**

**Details on how to make a submission will be provided on a separate information sheet.**

Further background technical studies to be commissioned in the next phase of the Wollert PSP preparation include:

- Ecological peer review of the Integrated Water Management Strategy where nominated Growling Grass Frog habitat exists
- Detailed Transport Modelling
- Functional Design of high level transport infrastructure
- Quantity Surveying of key transport and community infrastructure
- Conservation Management Plans for key biodiversity areas

## 2. CONTEXT AND SITE DESCRIPTION

### 2.1 METROPOLITAN AND REGIONAL CONTEXT

Refer to Figures 1 and 2

The Wollert Precinct Structure Plan (PSP) area is located within Melbourne's Northern Growth Corridor, as identified in the *Growth Corridor Plans* (see GAA website for more detail) recently released by the Growth Areas Authority in June 2012.

The Precinct is approximately 28 kilometres from Melbourne's Central Business District. The site is located to the east of the Hume Freeway – Craigieburn Bypass, and approximately ten kilometres north of the Metropolitan Ring Road.

The Wollert PSP area is located in the City of Whittlesea to the north of the Epping North growth corridor. The City of Whittlesea is experiencing rapid population growth associated with growth area development in its north in South Morang, Mernda, Doreen, Epping and Wollert and urban renewal in its southern established suburbs of Epping, Bundoora, Lalor and Thomastown. Development capacity in Whittlesea's existing growth areas corridor is forecast to be exhausted over the next five to ten years. As a result, further urban growth in Whittlesea will be concentrated in Wollert, Donnybrook and Woodstock.

Although a new urban growth front is planned for Donnybrook in the north, these precincts are separated by non-urban activities including areas of biodiversity significance, existing and planned quarries and utility infrastructure.

Land to the northeast of the precinct is predominately rural, forming Whittlesea's green wedge. This includes the Whittlesea Township, Eden Park, Humevale and Kinglake West. The Merri Creek and the Craigieburn Grasslands are located to the west of the Wollert PSP area, and the Darebin Creek and the Quarry Hills to the east. The Wollert PSP area is afforded views of Melbourne's CBD to the south and the foothills of the Great Dividing Range to the north-east.

Figure 1: Metropolitan Context Plan

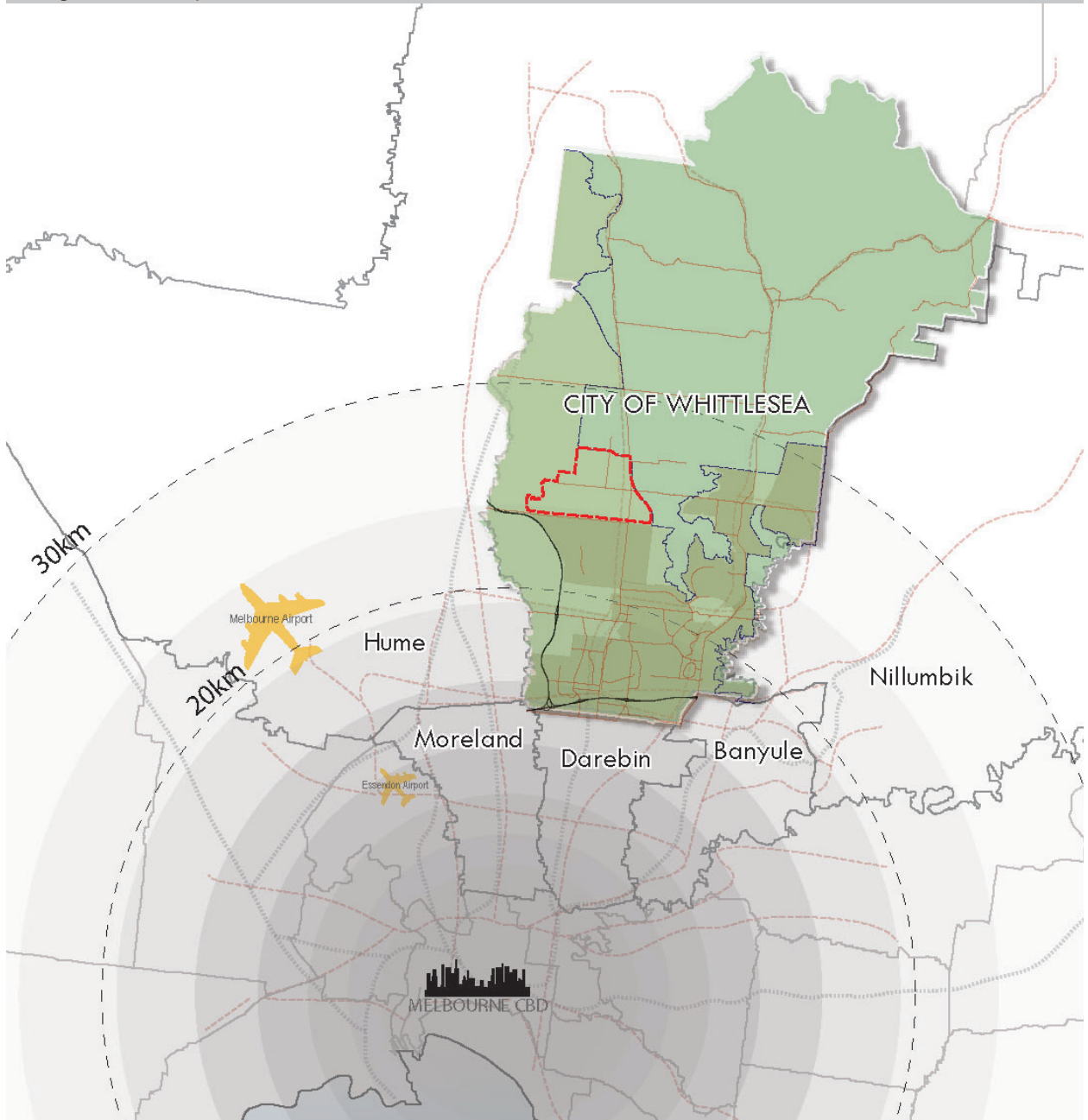
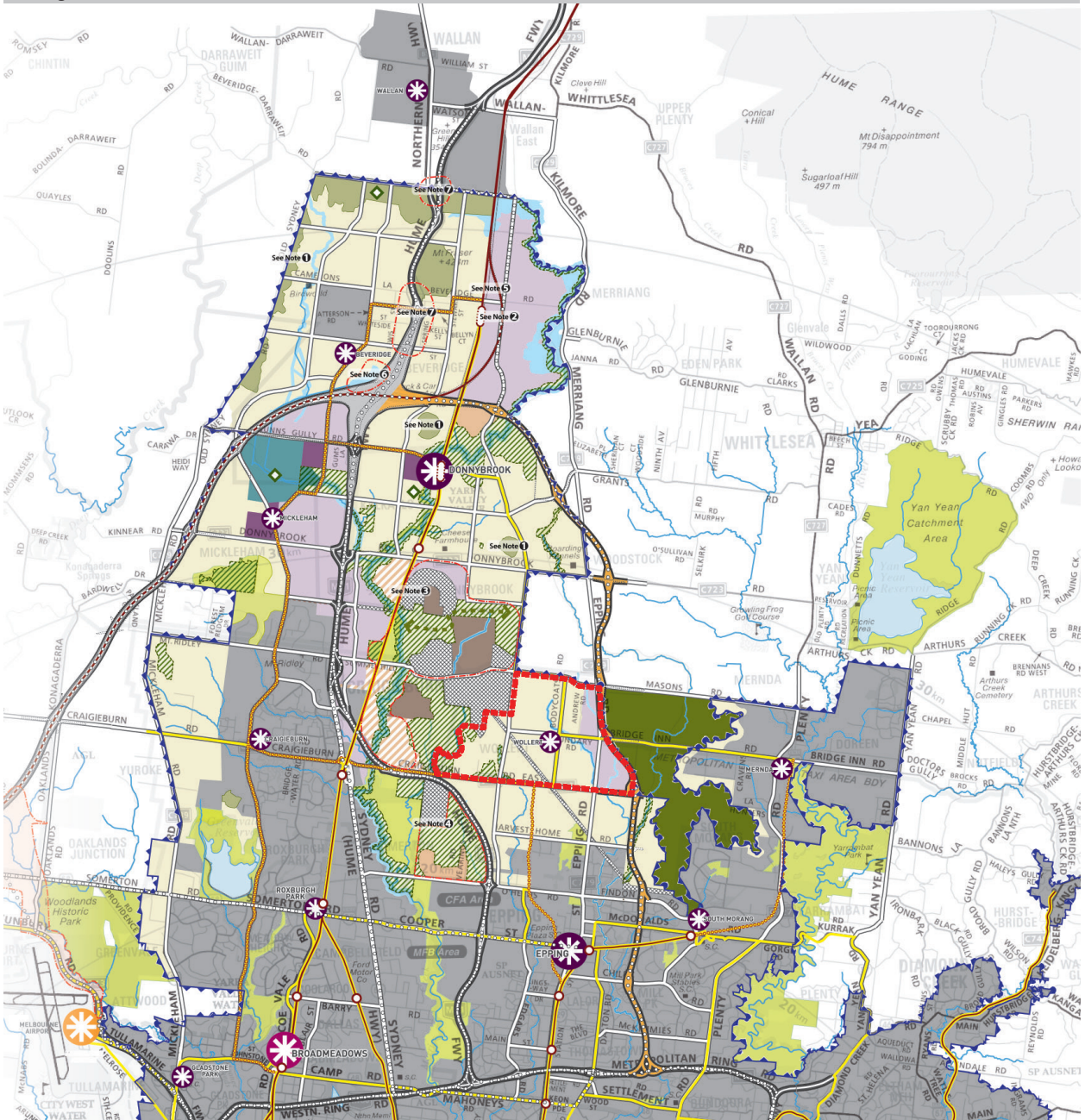




Figure 2: North Growth Corridor



## 2.2 LOCAL CONTEXT

Refer to Figure 3.

### 2.2.1 SITE AND SURROUNDING AREA

The PSP area itself covers a total land area of approximately 1434 hectares, and is bounded by Craigieburn Road East in the south, Summerhill Road in the north, Curly Sedge Creek in the west and the reservation for the future E6 in the east. The *North Growth Corridor Plan* identifies approximately 965 hectares of land within the PSP area as being available for urban development (residential, town centres, schools, parks etc), with an additional 215 hectares nominated for employment purposes. The remaining land is set aside due to environmental and conservation values, transmission easements or flood zones (Growth Areas Authority, 2012). These areas will be refined as part of the planning for the Wollert PSP and the detailed subdivisional plans that follow through the planning permit process.

The Wollert PSP area continues the existing Epping North urban growth front north from the established area of Epping. The current growth area of Mernda/Doreen sits to the east, separated by the Quarry Hills Regional Parkland. The developing suburb of Craigieburn lies to the west beyond the Craigieburn grasslands and the Hume Freeway – Craigieburn Bypass. The proposed Quarry Hills Precinct Structure Plan area lies to the south-east.

### 2.2.2 LOT SIZE AND OWNERSHIP PATTERNS

The Wollert PSP area is highly fragmented, with its 1,434 hectares comprised of over 100 rural properties ranging from approximately two to sixty hectares in area. Approximately 44 % of land in the PSP area is held or controlled by four developers, with the remaining properties primarily in private ownership.

#### **CURRENT USES**

Landholdings within the Wollert PSP area typically accommodate residential dwellings, associated sheds and areas of grass paddocks, areas that have been cultivated for crops and/or pasture and landscaped gardens (Cardno Lane Piper, 2012).

Small commercial/industrial uses found within the PSP area include retail nurseries (two such properties), a poultry farm for egg production, a bus servicing and maintenance operation and storage yards (Cardno Lane Piper, 2012).

Key strategic commercial/industrial uses requiring careful consideration during the PSP preparation process include the Hanson Quarry and Landfill and the APA Gasnet site (current gas compression station and proposed combined-cycle gas fired power station).

### 2.2.3 TOPOGRAPHY AND LANDFORM

The Wollert precinct is characterised by basalt plains which vary in their elevation, escarpments and valleys formed by drainage lines, stony rises and ephemeral lakes or soaks (Ecology and Heritage Partners, 2012). The area is flat to undulating, with a regional slope to the south and a series of low hills to the north. The surface water in the study area generally drains towards the south, where it then flows into the tributaries that sit within the precinct. These include the two branches of the Findon and Edgars Creeks, and the Curly Sedge Creek (Cardno Lane Piper, 2012).

A significant number of River Red Gum trees (*Eucalyptus Camaldulensis*) are scattered throughout the site. The North Growth Corridor Plan identifies two pockets in the southwest of

the site as holding significant biodiversity values. Another significant cluster of River Red Gums sits in the north-east of the precinct around Epping Road while significant remnant scatters of the trees sit throughout most of the remainder of the precinct.

## **BIODIVERSITY**

The biodiversity values of the PSP are discussed in the background report by WSP. The PSP area supports a number of significant biodiversity assets in the form of a number of patches of remnant vegetation associated with the numerous stony rises that interrupt the landscape. Two EPBC listed communities exist within the PSP area (Natural Temperate Grassland of the Victorian Volcanic Plain and Grassy Eucalypt Woodland of the Victorian Volcanic Plain) and a number of the patches support populations of the threatened flora species, including Matted Flax-lily, Slender Tick-trefoil and Small Scurf-pea.

Grassy Eucalypt Woodland of the Victorian Volcanic Plain exists across the site. As this community is a matter of National Environmental Significance (NES), its removal would trigger the need for an EPBC act referral. In response to the need for a strategic approach between the federal and state governments for the management of matter of NES, DSE released the draft "Biodiversity Conservation Strategy for Melbourne's Growth Areas" in November 2011. This strategy encompasses all relevant matters of national environmental significance and matters of state significance, particularly species and communities listed under the FFG Act, 1988.

At the time of the preparation of this report, the Biodiversity Conservation Strategy has not been ratified by the Federal Government, hence the approach to dealing with nationally significance communities and species has yet to be confirmed. Typically a planning permit under Clause 52.17 of the Whittlesea Shire Council Planning Scheme would be required for the removal of native vegetation within CA 1094. It is likely however, that the entire area would be subject to the development of a Native Vegetation Precinct Plan (NVPP) which, under Clause 52.16 of the planning scheme negates the need for a permit under 52.17 provided that the removal is in accordance with that stipulated in the NVPP. Any removal of native vegetation within CA 1094 will be subject to the 3-step approach to vegetation management (Avoid, minimise and offset) as outlined in Victoria's Native Vegetation Management Framework (DNRE, 2002).

The remainder of the PSP area, although supporting a number of patches of vegetation, is largely degraded due to the long term land use history of human disturbance and alteration from agricultural practices (SMEC, 2011).

### **2.2.4 HISTORY**

#### **ABORIGINAL HERITAGE**

The Wollert area is located on the traditional lands of Aboriginal people known as the *Woi wurrung*, a language group whose territory centred on the Yarra River and its catchment areas and extending west to the Werribee River. The *Woi wurrung* language group was part of a broader language area known as the East Kulin Language Area (Ecology and Heritage Partners, 2012).

It is believed that the clan which occupied land including the South Morang area was the *Wurundjeri william*, a patriline of the *Wurundjeri balug* and one of the four *Woi wurrung* clans. Today, the *Wurundjeri* Tribe Land Compensation and Cultural Heritage Council Incorporated is the Registered Aboriginal Party (RAP) under the *Aboriginal Heritage Act 2006* (Vic), with responsibilities in relation to the management and administration of Aboriginal Cultural Heritage matters in the Activity Area (Ecology and Heritage Partners, 2012).



## **POST-CONTACT HERITAGE**

Permanent European settlement of Victoria commenced with the arrival of the first squatters in the mid-1830s. The Wollert area was first surveyed in 1838, and was first subdivided in 1853. During the Victorian gold rush (1851-1888) the area was an important food production region servicing the goldfields. The region has since been variously used for grazing, agriculture and dairying (See Section 3.1).

A variety of historical archaeological sites are located in the PSP area, including dry stone walls, homesteads and farming complexes (Ecology and Heritage Partners, 2012). Other site types occurring in the study region included tree plantings, dry stone walls, a bluestone ford and bridges.

### **2.2.5 TRANSPORT AND MOVEMENT**

#### **EXISTING ROAD INFRASTRUCTURE**

The major existing piece of road transport infrastructure serving the Epping North-Wollert Corridor is the Hume Freeway - Craigieburn Bypass, which connects south to the Metropolitan Ring Road and thereafter to Melbourne's northern freeway network (City Link, Tullamarine Freeway, Calder Freeway) and north to the Hume Highway, which extends through the northernmost parts of the northern growth corridor, regional Victoria and Sydney. Access to the Bypass is currently available at a full interchange with Cooper Street and a half interchange providing city-bound access at Craigieburn Road East. A future interchange at O'Herns Road has been proposed but has not yet been funded.

Epping Road is the main existing arterial road connection providing residents with access south to the Epping Central Principal Activity Centre, Epping railway station, the Northern Hospital and other regional-level services and facilities, and to the north provides a connection through the rural areas of Wollert and Woodstock, Beveridge and Wallan.

Edgars Road and Scanlon Drive are both proposed to be extended from Cooper Street to Craigieburn Road and north into the Wollert PSP area, with some parts of this road (north and south of Harvest Home Road) already under construction. In the future, both roads will become important north-south alternatives to Epping Road, providing through-connections south to O'Herns Road and beyond.

East-west road connections include Craigieburn Road East (forming the southern boundary of the Wollert PSP area), providing access west to the Hume Freeway and Craigieburn, and Bridge Inn Road/Boundary Road which links through to the Mernda/Doreen growth area. Harvest Home Road, O'Herns Road, and Cooper Street are also important east-west roads in the Epping North Growth Corridor. Several rural roads currently exist within the Wollert PSP area including Boundary Road, Summerhill Road, Bodycoats Road, Andrews Road and Vearings Road.

#### **RESERVATION FOR THE PROPOSED E6**

The reservation for the proposed E6 (currently covered by a Public Acquisition Overlay) forms the eastern edge of the Wollert PSP area. It is proposed that the E6 will provide north-south connections to the South Morang Major Activity Centre and further south to the Metropolitan Ring Road in the south. Provision has been preserved in the E6 reservation for a number of potential interchanges including at Findon Road, Craigieburn Road and Bridge Inn/Boundary Road.

#### **PUBLIC TRANSPORT**

Fixed rail public transport is available several kilometres south of the Wollert Precinct at Epping on the South Morang line and west of the precinct at Craigieburn. However, a high capacity public transport corridor reservation extends from Lalor Station (also on the South Morang

train line) northwards through the Epping Central Principal Activity Centre, the Cooper Street Employment Area and the Aurora estate to the east of the Edgars Road alignment and up to Craigieburn Road East. There is potential for this reservation to be extended further north, allowing major public transport infrastructure to serve the Wollert PSP area.

The exact nature of public transport provided and timing of provision for this higher capacity public transport infrastructure are yet to be determined, however it is noted that the reservation has the potential to accommodate rail services. In the short to medium term, this corridor is more likely to be utilised for Bus Rapid Transit services, as envisaged in the North Growth Corridor Plan (Growth Areas Authority, 2012).. Once the Wollert Precinct is developed, local bus services will be also provided throughout the precinct.

## 2.2.6 TOWN CENTRES AND EMPLOYMENT

### TOWN CENTRES

The highest order town centre in the Northern Growth Corridor is the Broadmeadows Central Activity District which is one of six centres in metropolitan Melbourne which has been nominated to provide regional capital city functions.

Major town centres currently existing in the vicinity of the Wollert PSP area include the Epping Principal Activity Centre, the, South Morang, Craigieburn and Mernda Major Activity Centres. In addition to this, a number of neighbourhood centres are existing or are planned within the Epping North Corridor immediately south of the precinct at Aurora, Lyndarum and Epping North East. The North Growth Corridor Plan also nominates and another principal town centre in the corridor at Donnybrook (Lockerbie) in the north. . Other existing or planned major town centres in the Northern Growth Corridor include Roxburgh Park, Mickelham (Merrifield), Greenvale and Beveridge.

The current centre planning for Aurora identifies two town centres to serve the retail needs of people living in the surrounding community. A Southern Town Centre is proposed for a location near the intersection of O'Herns Road and Edgars Road, and a Northern Town Centre is proposed for a location near the intersection of Edgars Road and Harvest Home Road.

### EMPLOYMENT

A number of key employment areas are located in the northern region of Melbourne, with further tracts of employment land identified in the North Growth Corridor Plan.

The major employment land locations in the region currently include industrial estates in Somerton, Broadmeadows, Thomastown, Campbellfield and Epping. As these industrial estates are now approaching capacity, new areas of industrial land have been designated further to the north at Kalkallo and Merrifield. Land along Cooper Street between the Craigieburn Bypass and Merri Creek is identified for employment-related development, and may in the future be developed for industrial purposes.

The North Growth Corridor Plan identifies significant new industrial land precincts in northern Melbourne to support future economic activity in the region. Major new areas of industrial land or other dedicated employment precincts are identified at Mickleham, Kalkallo, Beveridge, Donnybrook and at Wollert.

The Northern Growth Corridor will be a key area in which the future employment and industrial requirements of metropolitan Melbourne will be located. It is noted that there are several existing and proposed industrial/employment nodes located within relatively close proximity of the PSP area, including the Melbourne Wholesale Markets, the Cooper Street Employment Area which includes the Northpoint Employment Park, the potential Beveridge Intermodal Freight

Facility to the north of the PSP area and the employment opportunities which will be located within the South Morang Activity Centre.

## 2.2.7 KEY SURROUNDING COMMERCIAL/INDUSTRIAL LAND USES

### **APA GASNET SITE**

APA Gasnet Australia Pty Ltd currently operates a gas compressor station at 365 Summerhill Road, Wollert, which borders the north-west corner of the PSP area. APA has indicated that it is planning to expand the compressor facility. In addition, it has also publicly stated its vision to construct and operate a 1000 Megawatt combined cycle gas fired power station on part of its site, however, planning for such a facility is still very formative. A number of approvals would also be required if such a facility were to ever be established.

The Growth Corridor Plan provides some discussion about a possible future gas fired power station and states that *“if built, such a facility has the potential to generate significant noise and it will therefore be necessary to take account of the sort of buffer requirements for such a facility in considering its ultimate siting, and also in determining land uses on sites surrounding the APA Gasnet site”* (Growth Areas Authority, 2012).

This matter will be examined in more detail through the PSP process when consideration of the possible adjoining land uses commences. APA has been asked to provide more detail and information about any proposal in the context of the Wollert PSP.

### **HANSON QUARRY AND LANDFILL**

The eastern extent of urban development is constrained by the existing Hanson Quarry and Landfill site located directly to the east of the PSP area between Masons Road and Bridge Inn Road. Relevant buffers for quarrying and landfill activities have informed the current delineation between the Urban Growth Zone and the Farming Zone within the precinct. The potential for this land to be used for employment uses is being investigated as part of the PSP process. In line with EPA guidelines, any development within 500m of the Hanson Landfill site, which stores putrescible landfill, will be subject to an environmental audit to ensure that any potential landfill gas migration is mitigated.

### **AUSTRAL BRICKWORKS**

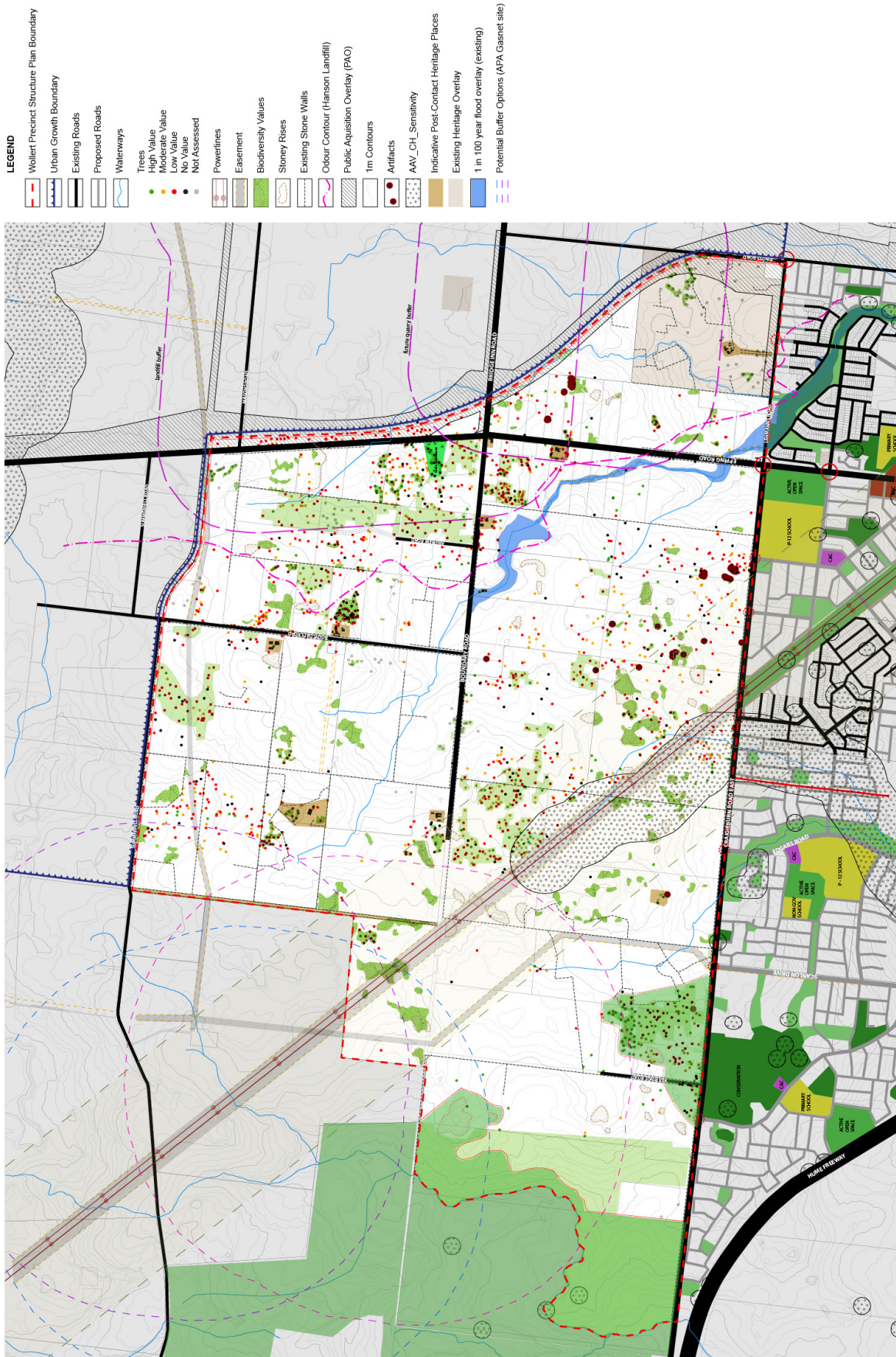
Austral Bricks operates a clay extraction and brick manufacturing business at 600 and 605 Craigieburn Road and 585 Summerhill Road. It is a relatively low impact facility that has a limited life span remaining. Austral Bricks has already indicated that the extraction business will be gradually wound down over the short to medium term and the land rehabilitated with a view to the land being used for urban purposes. This is reflected in the Growth Corridor Plans. New kiln facilities, anticipated to operate for up to 40 years, to the north of Summerhill Road are not likely to have any adverse impacts on the possible range of land uses within the Wollert PSP area owing to their low impact nature.

## 2.2.8 OPEN SPACE AND COMMUNITY FACILITIES

Once developed, the Wollert PSP area will have sufficient population to warrant a significant quantity and diversity of community infrastructure. Most of this infrastructure will be located within main community infrastructure hubs based around proposed town centres. Government and Non-Government schools, community centres, passive and active open space, indoor recreation facilities, arts and cultural facilities, justice and emergency services, and residential aged care services may all be required (ASR Research, 2012).• Meadow Glen Regional Recreation Facility



Figure 3: Local Context and Site Features Plan





## 2.3 KEY PRECINCT FEATURES

Key features of the Wollert PSP area requiring careful consideration in the preparation of the Precinct Structure include the following:

### **HERITAGE**

A number of sites of Aboriginal and Post-contact Heritage have been identified within the Precinct.. The location and level of significance of these sites can potentially impact upon the developable land within the Precinct. Further detailed assessment of individual sites will be required in order to guide sensitive development.

### **ARBORICULTURE AND BIODIVERSITY**

The Arboricultural Assessment identified 2815 trees within the study area, of which 2630 are River Red Gums. These trees provide an opportunity for place-making. A sensitive design approach will be required in order to maximise tree retention rates.

### **CATCHMENTS AND DRAINAGE**

The Wollert PSP encompasses 3 major catchments being Findon Creek, Edgars Creek, and Curly Sedge Creek. (a tributary of the Merri Creek). Careful consideration is needed regarding retardation measures to manage flood protection in the Findon and Edgars Creek systems due to the low existing grades of these drainage lines and the need to manage vegetation and protected species.

### **PROPOSED E6**

Although the Public Acquisition Overlay has been applied to land, indicating the reservation, no detailed studies or planning has taken place to date. It is unlikely that the E6 will be developed in the next 15-20 years. This has implications for type and timing of development of land in the immediate vicinity of the reservation.

The reservation currently sits directly over the Findon Creek In the event that the E6 is constructed, the realignment of the tributary is to be considered to allow for continued drainage service to the development and to mitigate any environmental impact.

### **EASEMENTS AND OTHER CONSTRAINTS**

The land is bisected by a major transmission easement running north-west to south-east and continuing on to the Eastern Energy terminal station in South Morang. Two high pressure gas pipelines also transect the site – one in a north-south direction along the western side of the precinct and another running in an east-west direction along the northern side of the precinct. Careful consideration will need to be given to the future urban form to address the transmission easement in such a way that it can be used positively, such as using part of it as a green corridor that may include passive and active open space, for example.

### **SURROUNDING STRATEGIC LAND USES – EXISTING AND PROPOSED**

Key strategic commercial/industrial uses requiring careful consideration during the PSP preparation process include the Hanson Quarry and Landfill and the APA Gasnet site (current gas compression station and proposed combined-cycle gas fired power station).

## 3. SUMMARY OF TECHNICAL STUDIES FOR BACKGROUND REPORT

### 3.1 ABORIGINAL AND HISTORICAL HERITAGE ASSESSMENT

Ecology and Heritage Partners Pty Ltd, August 2012

#### SUMMARY

The purpose of this assessment is to provide a preliminary assessment of the Aboriginal and post-contact heritage values within the Wollert PSP area. The consultants have undertaken a desk top and field based archaeological survey in order to identify heritage places and areas of archaeological sensitivity.

The following activities were undertaken in the preparation of the cultural heritage assessment:

- A review of the relevant heritage databases (e.g. Victorian Aboriginal Heritage Register [VAHR] at Aboriginal Affairs Victoria [AAV], Local Government Heritage Overlays, Heritage Victoria [HV] Inventory and Register, National Trust) and other relevant available literature;
- A brief review of the land use of the activity area to assist determine the likely archaeological value that may be found;
- An assessment of any implications of Commonwealth and State environmental legislation and Government policy associated with the proposed development;
- discussion of any opportunities and constraints associated with the activity area; and
- an archaeological survey in order to identify Aboriginal and historical cultural heritage places and areas of archaeological sensitivity.

#### ABORIGINAL HERITAGE

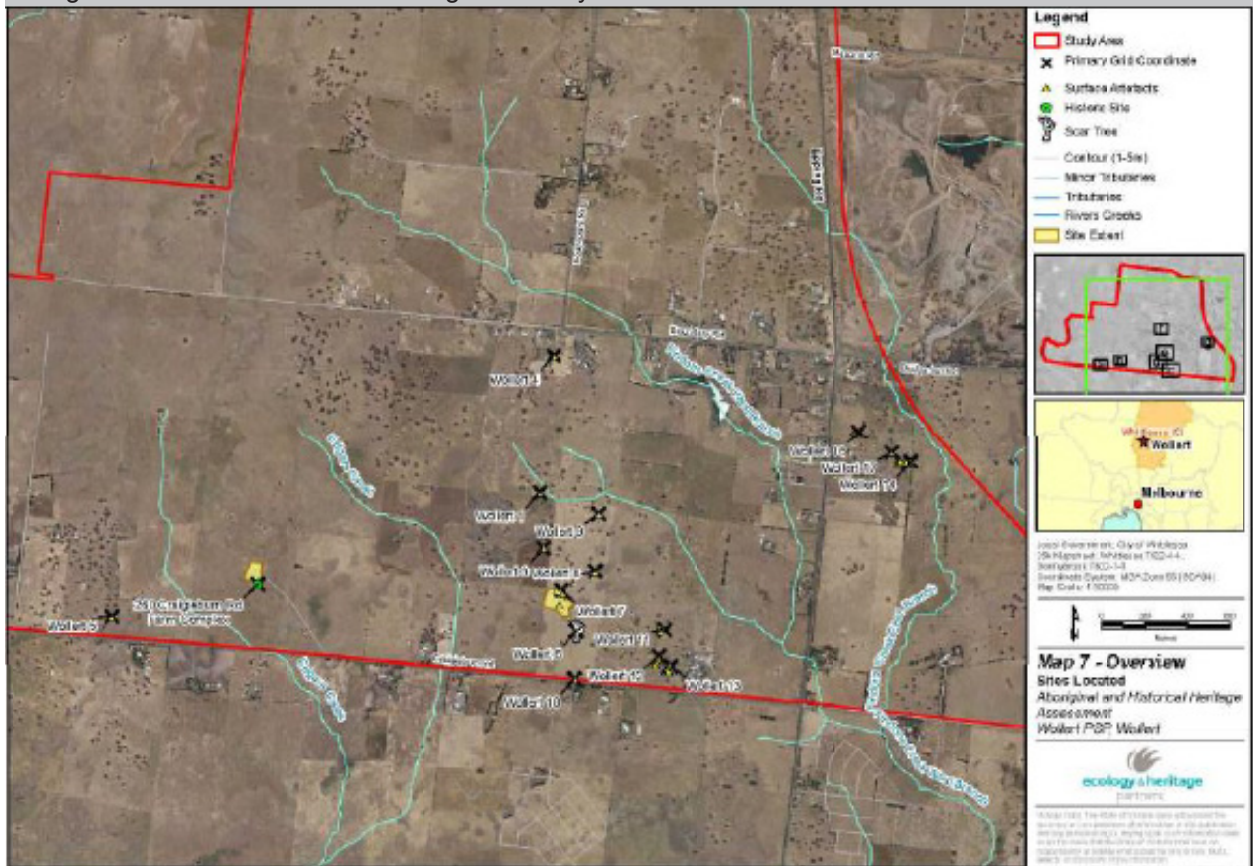
##### KEY FINDINGS

A search of the VAHR found a total of 112 registered Aboriginal Places within a 2 km radius and that there were no previously recorded places within the study area. The search indicated that the 112 registered Aboriginal Places comprise six place component types including isolated artefacts (56%), artefact scatters (22%), earth features (11%), scarred trees (8%), stone features (2%) and a shell deposit (1%). The two most common site component types include isolated artefacts and artefact scatters (Ecology and Heritage Partners, 2012).

During the field assessment Fifteen Aboriginal Places were recorded. Ten of these sites are stone artefact scatters, four are isolated artefacts, and one is a scarred tree. A review of previous archaeological assessments undertaken in the region indicated that most areas of Aboriginal Archaeological Likelihood were sites distributed on stony rises. Sites are also likely to occur in areas close to waterways and of higher ground (such as ridges or hill crests) as these locations were favoured by Aboriginal people as they provided excellent vantage points and formed part of travelling Routes (Ecology and Heritage Partners, 2012).

The sites of Aboriginal Heritage significance are shown on Figure 4.

Figure 4: Results of the Archaeological Survey



## MANAGEMENT RECOMMENDATIONS

Recommendations 1 to 5 within the report related to Aboriginal Heritage.

### **RECOMMENDATION 1 – REGISTER OF GEOGRAPHIC PLACE NAMES**

Ecology and Heritage Partners Pty Ltd is advised that CoW is currently in the process of naming Curly Sedge Creek, Findon Creek and its tributaries under the Victorian Register of Geographic Names (under the *Geographic Place Names Act 1998*). The naming will automatically include the waterways within areas of cultural heritage sensitivity as defined by the *Aboriginal Heritage Regulations 2007*<sup>3</sup>. If this is the case, any future high impact activities located within 200 m of these newly named places will trigger the preparation of a mandatory CHMP.

### **RECOMMENDATION 2 – CONSULTATION (RAP)**

It is recommended that the Growth Areas Authority in conjunction with the City of Whittlesea continue their consultation with the Wurundjeri Tribe Land and Compensation Cultural Heritage Council Incorporated (Registered Aboriginal Party) throughout all phases of the PSP planning process.

### **RECOMMENDATION 3 – MANDATORY CULTURAL HERITAGE MANAGEMENT PLAN(S)**

In properties where areas of cultural heritage sensitivity intersect, it is recommended that a 'complex assessment' as part of a Cultural Heritage Management Plan (CHMP) be undertaken which includes an archaeological subsurface testing program to establish the nature, extent and significance of all Aboriginal cultural heritage in the activity area (in accordance with r.60 and r.61 of the *Aboriginal Heritage Regulations 2007*). This must include consultation with the RAP, Sponsor and cultural heritage advisor to agree on an appropriate sampling methodology suitable to the subsurface testing of Aboriginal cultural heritage within the activity area. Please see page 128 of the report for further detail on the requirements of a complex assessment.

### **RECOMMENDATION 4 – VOLUNTARY CULTURAL HERITAGE MANAGEMENT PLAN(S)**

In properties where there is no area of cultural heritage sensitivity present, the proponent is not legally required by the *Aboriginal Heritage Act 2006* and the *Aboriginal Heritage Regulations 2007* to prepare a mandatory Cultural Heritage Management Plan (CHMP) because the activity area is not situated within any areas of cultural heritage sensitivity. However, it is recommended that the proponent consider preparing a voluntary CHMP given that the Wollert region comprises landscapes known to contain Aboriginal cultural heritage; therefore, there is a risk that any future development of the activity area may impact potential Aboriginal archaeological sites.

Advantages for preparing a voluntary CHMP are noted on page 128 of the EHP report.

### **RECOMMENDATION 5 – PROTECTION OF ABORIGINAL PLACES**

Section 61 of the *Aboriginal Heritage Act 2006* states that when seeking approval of a CHMP the following conditions need to be considered:

- a. Whether the activity will be conducted in a way that avoids harm to Aboriginal cultural heritage; and,
- b. If it does not appear to be possible to conduct the activity in a way that avoids harm to Aboriginal cultural heritage, whether the activity will be conducted in a way that minimises harm to Aboriginal cultural heritage.

Please see Table 12 of the report for a list of all of the Aboriginal Places in the study area which are protected by the *Aboriginal Heritage Act 2006*. It should also be noted that all Aboriginal



cultural heritage, whether registered or yet to be discovered, is protected by the *Aboriginal Heritage Act 2006*.

## POST CONTACT HERITAGE

### **DESKTOP ASSESSMENT – HISTORICAL [POST-CONTACT] CULTURAL HERITAGE**

A search of the historical heritage registers and a review of previous historical and archaeological studies indicated that there is a common occurrence of domestic and pastoral structures and/or remains throughout this study region. These are a reflection of the early activity that occurred in the nineteenth century in this area, as well as a clear indication of the growing dairying industry and economy at the time. Other site types occurring in the study region included tree plantings, dry stone walls, a bluestone ford and bridges.

Areas of historical archaeological likelihood and significance occur within the following locations within the PSP activity area:

- '260 Craigieburn Road Farm Complex' (H7922-0484);
- Heritage Overlay No. 41 ('Schultz Farm 'Pine Grove Farm') located at 65 Lehmanns Road, Wollert;
- Heritage Overlay No. 51 ('Main School Building – Wollert Primary School') located at 455 Epping Road, Wollert;
- 'Epping Road Bridge' (D7922-0205);
- 'Medland Estate Conservation Area' (refer to Gould 1991: A.10);
- 'Hayes Cottage' (45 – 55 Boundary Road, Wollert) (Gould 1991: 5.09);
- The 'Wollert General Store and Post Office' (491 Epping Road, Wollert)(Gould 1991: 5.01);
- 'Pittaways Wayside House Dance Palais' (491 Epping Road, Wollert) (Gould 1991: 5.02);
- 'Cameron's House' (450 Epping Road not 480 Epping Road, Wollert) (Gould 1991: 5.02);
- 'Wollert Methodist Church' (340 Epping Road, Wollert) (Gould 1991: 5.14);
- 'Springvale-Bodycoats Farm' (80 Bodycoats Road, Wollert) (Whittlesea Study 5.05 (see also Gould [1991: 5.05]);
- Dry stone walls and potential road reserves (refer to Map 8); and

In addition to the above locations, there are three potential historic farm complexes located at 71-75 Bodycoats Road, 210 Boundary Road and 115 Bodycoats Road, Wollert that were not assessed during the field assessment due to time and property access constraints.

## MANAGEMENT RECOMMENDATIONS

Further to the recommendations noted below, in most instances further consultation into the nature of the impacts of any proposed disturbance to sites of heritage significance will be required. It is advised that in the first instance a Conservation Management Plan and an Interpretative Reuse Plan be considered if the site is to be retained. If this is deemed necessary they should be prepared by a qualified built heritage consultant and a qualified historical archaeologist or other relevant consultant (e.g. stone mason).

### **RECOMMENDATION 6: PROTECTION OF HERITAGE PLACES**

*The Heritage Act 1995* protects all non-Aboriginal cultural heritage sites older than 50 years. If a site is of State Significance it is listed on the Victorian Heritage Register and a Permit from Heritage Victoria is required to disturb it. If an archaeological site is not of State significance it is usually listed on the Victorian Heritage Inventory and Consent from Heritage Victoria would be required to disturb it.

If a site is on the Council Heritage Overlay then consultation must take place directly with Council in regard to any impacts. If a historical archaeological site is uncovered in the course of the activity, under s.127 of the *Heritage Act 1995*, it is an offence to knowingly damage, disturb or excavate without obtaining the appropriate consent from the Executive Director of the Heritage Victoria.

### **RECOMMENDATION 7: THE IMPORTANCE OF HERITAGE PROTECTION**

Heritage places are significant for educating communities. Buildings, areas, landscapes and other places of heritage value provide insights into the origins of the Wollert region. Heritage places can also add character, appeal and interests to Wollert and in turn neighbouring regions and thus are irreplaceable and valuable.

Respect for cultural heritage includes the retention and management of places that are important to the Wollert community. One of the objectives of planning in Victoria is to conserve and enhance buildings, landscapes or other heritage places which are of scientific, aesthetic, architectural or historical interest, or otherwise of specific cultural value. The City of Whittlesea has a significant a role in protecting heritage places of value to the local Wollert community.

### **RECOMMENDATION 8: 260 CRAIGIEBURN ROAD FARM COMPLEX (H7922-0484)**

Heritage Place 260 Craigieburn Road Farm Complex (H7922-0484) is listed on the Victorian Heritage Inventory and Consent from Heritage Victoria would be required to disturb it. Consultation with Heritage Victoria is required in order to address the potential impacts to H7922-0484. A Consent to Disturb from the Executive Director is required under s. 127 –s.129 of the Heritage Act 1995 if any of the proposed development will impact any component or feature of H7922-0484. The consent may include a set of conditions such as additional historical research, archaeological excavation, photographic requirements, monitoring of potential impacts to the farm complex and a detailed report.

### **RECOMMENDATIONS 9 &10: HERITAGE OVERLAY SITES**

The following properties are listed on the Heritage Overlay and cannot be disturbed without permission from the City of Whittlesea.

- Schultz Farm 'Pine Grove Farm (HO41) located at 65 Lehmanns Road, Wollert
- The Main School Building – Wollert Primary School (HO51) located at 455 Epping Road, Wollert

### **RECOMMENDATION 11: EPPING ROAD BRIDGE (D7922-0205)**

'Epping Road Bridge' (D7922-0205) is 'D' listed (de-registered) on the Inventory at Heritage Victoria and does not afford any legislative protection under the Heritage Act 1999; consequently, no Consent is required from Heritage Victoria. However, it is recommended that consultation with the City of Whittlesea take place to determine the future management of this site.

### **RECOMMENDATION 12: MEDLAND ESTATE CONSERVATION AREA**

The remains of the Medland Estate Conservation Area also form part of the Schedule 1 to the Environmental Significance Overlay (refer to Section 2.1.2.1). Following on from the Gould (1991: A.10) and the City of Whittlesea Heritage Citation Report (2009), it is recommended that the Medland Estate Conservation Area be placed on the City of Whittlesea Heritage Overlay as a heritage precinct. This heritage place cannot be disturbed without permission from the City of Whittlesea. Consultation with the Council is required in regard to the future of this significant landscape.

### **RECOMMENDATIONS 13 –18: SITES RECOMMENDED FOR HERITAGE OVERLAY PROTECTION**

Based on recommendations within the Gould *Whittlesea Heritage Study* (1991) and the *Whittlesea Heritage Study - Vol. 2; Key Findings and Recommendations* (Context 2009), it is

recommended that the following heritage sites are placed on the City of Whittlesea Heritage Overlay:

- Hayes Cottage, 45-55 Boundary Road, Wollert (Gould 1991: 5.09)
- Wollert General Store and Post Office, 491 Epping Road, Wollert (Gould 1991: 5.01)
- The Pittaways Wayside House Dance Palais, 491 Epping Road, Wollert (Gould 1991: 5.02)
- Cameron's House, 450 Epping Road, Wollert (Gould 1991: 5.04) (The City of Whittlesea has advised EHP that the Gould report incorrectly maps Cameron's House at 480 Epping Road and Cameron's House is located on 450 Epping Road.
- Wollert Methodist Church, 340 Epping Road, Wollert (Gould 1991: 5.14)
- Springvale-Bodycoats Farm, 80 Epping Road, Wollert (Gould 1991: 5.05)

The above heritage places cannot be disturbed without permission from the City of Whittlesea. Consultation with the Council is required in regard to the future of these sites.

### **RECOMMENDATION 19 – DRY STONE WALLS AND POTENTIAL ROAD RESERVES**

None of the dry stone walls identified in the Wollert PSP activity area are included on the Heritage Victoria Inventory and do not afford any legislative protection under the Heritage Act 1995. However, it should be noted that dry stone walls are afforded protection pursuant to Clause 52.37 of the Whittlesea Planning Scheme. The network of dry stone walls within the Wollert PSP activity area are of high local significance and it is recommended where possible that the dry stone walls be incorporated into the Wollert Precinct Structure Plan in their present locations. Reconstruction of the dry stone walls by a suitably qualified stone mason ought to be considered as part of a dry stone wall retention strategy.

### **RECOMMENDATION 20 – ADDITIONAL HERITAGE INVESTIGATIONS**

Due to time and property access constraints, it is recommended that an historical archaeological survey be extended to include the farm complexes located at the following three properties:

- 71-75 Bodycoats Road, Wollert;
- 210A Boundary Road, Wollert; and
- 115 Bodycoats Road, Wollert.

The purpose the additional investigation is to assess and document these potential heritage places, provide information in relation to relevant legislation associated with the proposed development and to provide recommendations in regard to the management of these potential heritage places.

## 3.2 ARBORICULTURAL ASSESSMENT

Tree Logic, 19 July 2012

### SUMMARY

All trees within the Wollert PSP area have been assessed to determine:

- Health
- Nature e.g. indigenous
- Value e.g. ability to contribute to future urban structure

2816 trees were found and surveyed

The trees have been mapped and their arboricultural value recorded in the Tree Logic Report (see Figure 5 and 6).

Nine recommendations regarding retention, tree protection zones and suitability within an urban environment are made

### KEY FINDINGS

In conclusion, the report found that:

- The broader landscape is characterised by scattered remnant indigenous trees, with substantial stands of these trees located to the centre, south, central, south-west; and north-west extending to the north-east of the site. The three water courses within the boundary of the site were largely devoid of mature trees.
- A total of two thousand eight hundred and sixteen trees were assessed comprising one thousand six hundred and twenty-two (1,622) individual trees with the remainder occurring within one hundred and ten (110) tree group features. The values of these tree features can be described as follows:
- One hundred and forty six individual (146) trees and eleven groups (11) of trees were of high arboricultural value
- five hundred and forty-five (545) individual trees and forty-two (42) tree groups were of moderate arboriculture value
- seven hundred and eighty-nine (789) individual trees and fifty-seven (57) tree groups were of low arboricultural value
- the remaining one hundred and forty-two (142) trees were of no arboricultural value. Among the trees of no arboricultural value were eighty (80) dead trees, including numerous large scattered old tree stumps.
- Although nine indigenous species were recorded, ninety-one (91) percent of assessed trees were indigenous River Red Gum, nearly all of which were naturally occurring specimens. Of botanical interest were six remnant specimens tentatively identified as Studley Park Gum (*Eucalyptus studleyensis*). Other remnant trees of interest included three remnant Drooping She-oak (*Allocasuarina verticillata*), located on a north-south aligned stony knoll, and included Tree No. 4, a specimen with DBH of 95cm, substantial for the species in Victoria. Among the River Red Gum were numerous trees of interest due to large dimensions, form and habit and / or relatively good condition. Most large



remnant trees were located on private landholdings where long term pastoral activity has stifled natural recruitment creating an aging population, characterised by health and/or structural defects resulting in such trees attracting lower arboricultural values. There were no obvious concentrations of high value trees, low value trees or trees of no arboricultural value however, it is noted that many of the remnant tree features present substantial landscape values irrespective of their arboricultural value.

- Two patches of trees were identified where concentrations of trees of moderate value were recorded, being located around Vearings Road and on Epping Road, north of the Boundary Road intersection.
- Most planted and exotic trees within the study were excluded from the assessments as they failed to meet the arboricultural value required for inclusion. In general, most non indigenous specimens were either not significant in size, or quality due to inferior biological suitability to the area, having the effect of reducing plant performance and overall quality, often leading to premature mortality.
- The predominant aging River Red Gums were characterised by visually interesting forms and structural defects, including cavities. The latter provide ecologically important habitat for a range of fauna, yet conversely reduces arboricultural value, and because of their location and extent in trunks and primary limbs, often cannot be mitigated through contemporary arboricultural treatments.
- Given the population characteristics, fundamental to successful tree preservation therefore will be prudent selection of specimens to ensure trees are appropriately located, considering surrounding future land use, tree condition and suitable landscape function, and the ability to meet successful preservation requirements so trees can be retained as low risk assets. Arboricultural data is useful to inform the design stage of the appropriate functionality of the trees, whilst also providing information on spatial requirements for tree protection.
- The persistence in the locale of several species of remnant trees with small populations could potentially be threatened by urban development of the site, and steps to preserve the gene pool of this remnant stock would be prudent, though more for ecological than any perceivable arboricultural benefit.

## RECOMMENDATIONS

- a) Tree retention decisions should be underpinned by risk management principles.
- b) All indigenous trees including dead and dying specimens are suitable for retention in open space and / or to be set aside for meaningful ecological conservation purposes.
- c) Trees of moderate or high arboricultural value are the most suitable for retention as amenity trees in built areas and preferential treatment for retention should be given to such specimens in built areas where tree function is primarily one of amenity.
- d) Trees of low and no arboricultural values due to health deficiencies are generally unsuited to retention into built areas as amenity specimens unless access is carefully managed.
- e) Where trees of low arboricultural values due to structural defects are to be incorporated into built areas, they should generally only be considered for retention where the risk associated with their retention can be mitigated through contemporary arboricultural

treatments, and / or by designing the urban area to exclude targets from around or beneath the trees. Where the latter is not feasible retention should be reviewed on a case by case basis.

- f) Where trees are to be incorporated into built areas, primarily serving an amenity function, and where excluding targets from around or beneath the trees is not feasible, preferentially consider retaining trees of moderate or high arboricultural value.
- g) In accordance with Council's tree protection, any application for subdivision/development within the PSP area will need to be accompanied by TPZ data calculated in accordance with Council guidelines, and based on the actual form of the tree. Where necessary, TPZ data should also be adjusted meet the minimum TPZ requirements set out under AS4970 to ensure adequate root and canopy protection is achieved.
- h) Retain remnant trees in groups, particularly in built areas to take advantage of a more extensive TPZ than may otherwise be afforded trees retained as individuals.
- i) Undertake seed collection of remnant trees with small populations for the purpose of future propagation to perpetuate the local gene pool.

Figure 5: Spatial distribution of assessed trees, PSP 1070

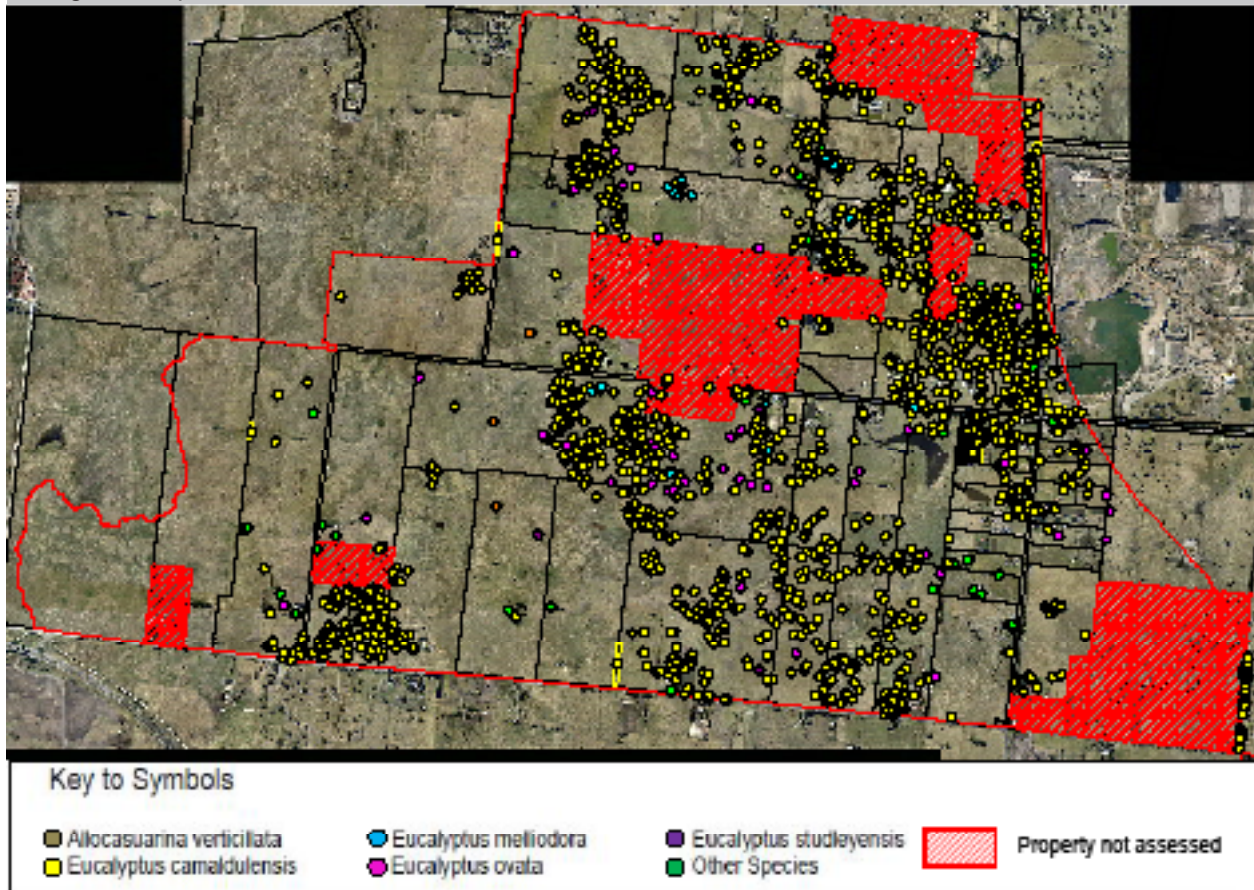
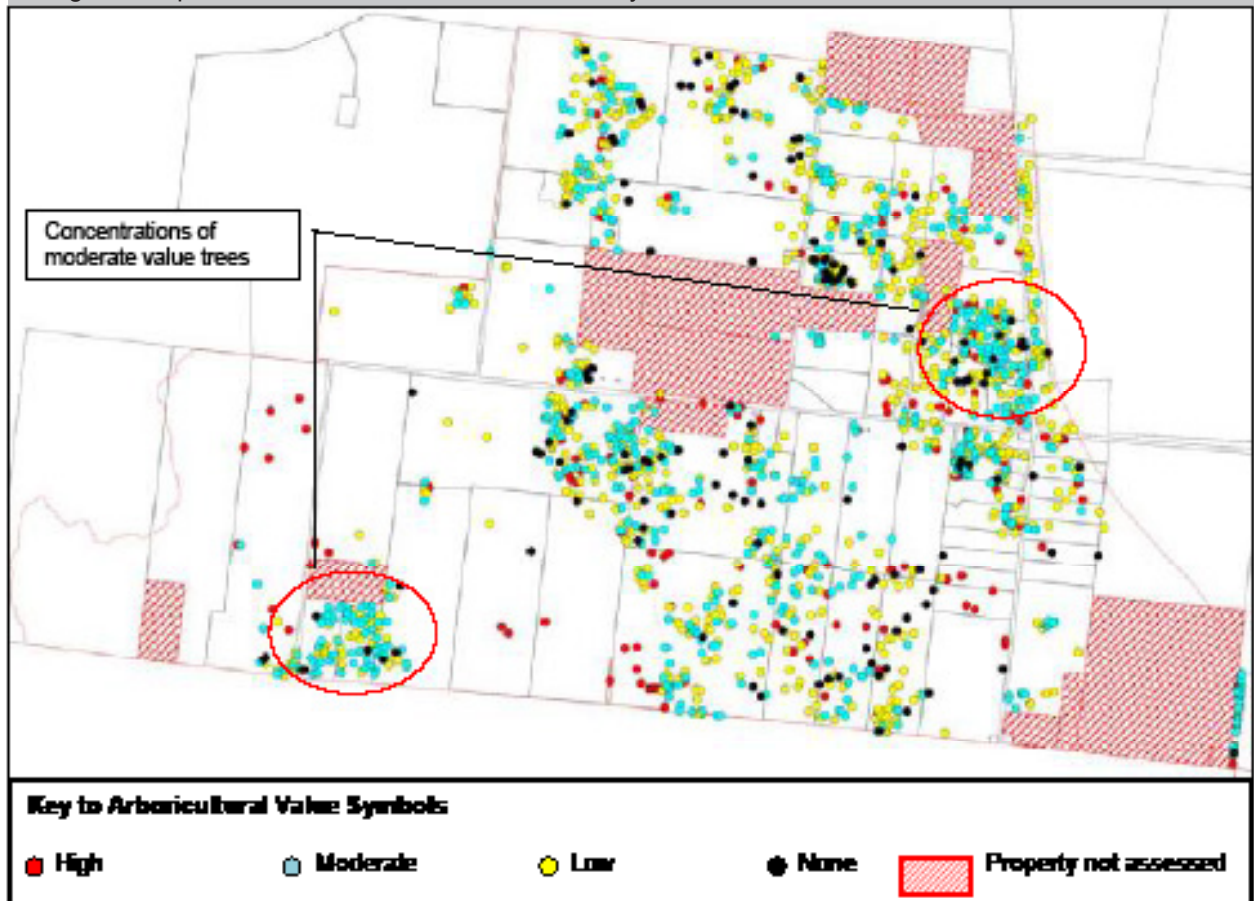


Figure 6: Spatial Distribution of Assessed Trees by Arboricultural Value, PSP 1070





### 3.3 BIODIVERSITY ASSESSMENT

SMEC, 17 June 2011, and WSP, August 2012

#### SUMMARY

The purpose of the GAA Biodiversity Assessment and Mapping Project is to undertake detailed field surveys of native vegetation and targeted flora and fauna species and to assess and map their ecological significance.

The preparation of Biodiversity Reports (covering native vegetation and flora and fauna habitat) will provide background input into precinct structure planning at an early stage in the planning process allowing for greater certainty.

The GAA flora and fauna mapping and assessment project was undertaken in close association with the Department of Sustainability and Environment (DSE) which is the regulator for biodiversity protection and conservation in Victoria

In summary the biodiversity assessment

- Involved detailed field surveys of native vegetation and targeted flora and fauna species to assess and map their ecological significance
- Identified a total of 182 zones of remnant native vegetation within the PSP, encompassing a total area of 136.04 hectares and representing 45.15 habitat hectares
- Found that of the 182 habitat zones, 10 were of Very High conservation significance, 165 were of High conservation significance and 7 were of Medium conservation significance
- Found a total of 642\* scattered indigenous trees were identified within the PSP area, the majority of which were River Red Gum *Eucalyptus camaldulensis*
- Found two EPBC listed communities exist within the PSP area (Natural Temperate Grassland of the Victorian Volcanic Plain and Grassy Eucalypt Woodland of the Victorian Volcanic Plain)
- Found the PSP area has populations of threatened flora species, including Matted Flax-lily, Slender Tick-trefoil and Small Scurf-pea
- Identified opportunity to create suitable habitat links external sites adjacent to the PSP area

**Note \*: It should be pointed out that the SMEC/ WSP calculation of scattered trees, compared to the Tree Logic Assessment does not count individual trees that are within a 'patch' of native vegetation. The SMEC/ WSP assessment has considered patches of native vegetation for their combined value, as per legislative assessment requirements.**

#### BIODIVERSITY ASSETS

WSP Environmental was commissioned by the GAA to map the location of indigenous trees, and to conduct targeted survey for a range of threatened flora species within Hume/Whittlesea/ Mitchell investigation area north of Melbourne. The northern investigation area of Melbourne has been divided into a number of future development precincts, of which WSP Environmental were contracted to survey a total of five. This biodiversity assessment report covers Contract Area 1070- Wollert, which is located solely within the City of Whittlesea boundary. The Wollert Contract Area (CA) is bound to the south by Craigieburn Road East, to the north by Summerhill Road, to the east by Epping Road and the proposed Outer Metropolitan Ring and E6 transport corridors, and to the west by a drainage line, just east of Brick Makers Drive.

This Contract Area has been previously investigated (SMEC, 2012), however many properties were unable to be accessed during the required survey time. WSP were subsequently



contracted to complete survey on as many of those properties possible. WSP Environmental undertook field surveys on those properties for which access had been expressly given during the landowner consultation phase of the project in October and November 2011.

### **PROVISION OF ACCESS**

CA 1070 covers an area of approximately 1434 hectares, and is comprised of 110 parcels of land. The majority of these parcels were accessed by SMEC (2012) during the 2010-2011 survey period. 23 parcels of land were required for survey during to fulfil this contract. WSP were able to gain access to a total of 15 parcels, or 53% of the total number of properties requiring survey (64% of the total land area requiring survey). WSP were denied access to seven parcels of land, and were unable to contact the landowners of a further six parcels.

### **ECOLOGICAL VEGETATION CLASSES**

DSE's vegetation mapping (DSE, 2012a) for the CA 1070 suggests that both EVC 55- Plains Grassy Woodland and EVC 132 Plains Grassland were the dominant vegetation type across the landscape prior to European colonisation, with EVC 124 Grey Clay Drainage-line Aggregate lining the headwaters of the Edgars Creek and Findon Creek East Branch which begin within the contract area. This EVC is also thought to have lined the tributary to Merri Creek which forms the western boundary of the Wollert CA.

Following European colonisation of the area, much of the original native vegetation was cleared to provide land suitable for grazing and cropping, activities that continue at the site today. Numerous scattered River Red Gums persist across the site and are remnants of the Plains Grassy Woodland EVC.

No habitat hectares assessments were required to be conducted by consultants for this current contract. DSE have provided the NV 2012\_TS\_GA dataset, which is the current DSE 'time-stamped vegetation' dataset (DSE 2012b). The current time-stamped dataset suggests that the CA supports a total of 7 Ecological Vegetation Classes, including EVC 124 Grey Clay Drainage-line Aggregate, EVC 125- Plains Grassy Wetland, EVC 132- Plains Grassland, EVC 203- Stony Rises Woodland, EVC- 55 Plains Grassy Woodland, EVC 649- Stony Knoll Shrubland and EVC 654- Creekline Tussock Grassland. This 'time-stamped' dataset is comprised of the habitat hectares information collected during the survey undertaken by SMEC (2012), and modelled vegetation extent and quality.

Although not all of these EVC's were observed within the contract area during the fieldwork undertaken by WSP Environmental, those that persist within the landscape were of poor quality, and in the case of Plains Grassy Woodland, were typically identifiable only by an overstorey of River Red Gums. The Stony Knoll Shrubland observed was of higher quality than most of the remnant vegetation, as the surface rock has prevented both past human interference as well as impacts caused by grazing animals.

## SCATTERED TREES

183 scattered indigenous trees exist across those properties surveyed by WSP, comprising 66 Very Large Old Trees (VLOT), 90 Large Old Trees (LOT), 20 Medium Old Trees (MOT) and 7 Small Old Trees (SOT). The vast majority of these trees are Remnant River Red Gums, and are representative of the Plains Grassy Woodland EVC. Scattered trees with a class size of MOT or above are assigned the lowest conservation significance appropriate to the conservation status of the EVC to which they originally belonged. This all trees of size MOT and above are considered to be of 'high' conservation significance. Small Old Trees are assigned a conservation significance of low.

A large number of scattered indigenous trees have been recorded across those properties that were previously surveyed by SMEC (2012).

## EPBC COMMUNITIES

No survey for either Natural Temperate Grassland of the Victorian Volcanic Plain, or Grassy Eucalypt Woodland of the Victorian Volcanic Plain was required as a part of this contract.

DSE have supplied consultants with the modelled extent of Grassy Eucalypt Woodland of the VVP layer. According to this dataset, CA 1070 supports 381 patches of this endangered vegetation community, comprising some 340 hectares of this endangered vegetation community (24% of the total area of the precinct.). At the time of the compilation of this report, the dataset for Natural Temperate Grassland of the Victorian Volcanic Plain had not been provided. The Biodiversity Conservation Strategy for Melbourne's Growth Area's (DSE, 2011 – draft) stipulates that the prescriptions for Natural Temperate Grassland does not require land to be protected within the growth areas, as impacts on these matters were avoided and minimised in locating the Urban Growth Boundary.

## SIGNIFICANT SPECIES

Consultants were engaged to undertake targeted survey for a range of federal and state listed threatened flora species. Consultants were not contracted to undertake any threatened fauna surveys within CA 1070

### National Significance

No nationally significant threatened flora species were recorded during the targeted survey that WSP Environmental undertook between November and December, 2011.

No incidental sightings of nationally significant fauna species were recorded during the current assessment. An historical record (from 1930) exists from within the contract area boundary for a Superb Parrot *polytelis swainsonii*, listed as vulnerable under the EPBC act.

### State Significance

No flora species of State significance were observed during the current assessment. There are no historical records of flora species from within the contract area boundary.

A Pied Cormorant *Phalacrocorax varius*, was recorded from the eastern boundary of the CA during the current assessment. This species is listed at state level as a Victorian Rare or Threatened (VROT) species. Historical database searches have revealed that records exist from within the precinct for the Australian Shoveler *Anas Rhynchosotis* (VROT), a Fat-tailed Dunnart *Smithopsis crassicaudata* (VROT), Bush Stone-curlew *Burhinus grallarius* (FFG, VROT), Hardhead *Aythya australis* (VROT), Blue-billed Duck *Oxyura australis* (FFG, VROT), and a Spotted Harrier *Circus assimilis* (VROT). These records range from 1930 to 1999.

## **GOVERNMENT LEGISLATION AND POLICY**

According to information supplied by DSE, Grassy Eucalypt Woodland of the Victorian Volcanic Plain exists across the site. As this community is a matter of National Environmental Significance (NES), its removal would trigger the need for an EPBC act referral. In response to the need for a strategic approach between the federal and state governments for the management of matter of NES, DSE released the draft "Biodiversity Conservation Strategy for Melbourne's Growth Areas" in November 2011. This strategy encompasses all relevant matters of national environmental significance and matters of state significance, particularly species and communities listed under the FFG Act, 1988.

At the time of the preparation of this report, the Biodiversity Conservation Strategy has not been ratified by the Federal Government, hence the approach to dealing with nationally significance communities and species has yet to be confirmed.

Typically a planning permit under Clause 52.17 of the Whittlesea Shire Council Planning Scheme would be required for the removal of native vegetation within CA 1070. It is likely however, that the entire area would be subject to the development of a Native Vegetation Precinct Plan (NVPP) which, under Clause 52.16 of the planning scheme negates the need for a permit under 52.17 provided that the removal is in accordance with that stipulated in the NVPP.

Any removal of native vegetation within CA 1070 will be subject to the 3-step approach to vegetation management (Avoid, minimise and offset) as outlined in Victoria's *Native Vegetation Management Framework* (DNRE, 2002).

### 3.4 TRANSPORT MODELLING

SKM consultants were engaged by the Growth Areas Authority to establish a future traffic reference case to investigate future land use and transport scenarios for the whole of the North Growth Corridor region.

This will now feed into the Precinct Structure Plans (PSPs) of individual development areas, including Wollert.

The report, broadly identifies an expected land use pattern for the North Growth Corridor, including housing densities, population yield, jobs and primary schools.

The result is a model that will be used to define the future road and public transport network that will be required to support the development of a new community at Wollert. The report:

- Establishes an indicative arterial road network for new growth areas
- Identifies road capacity and traffic volumes
- Identifies public transport volumes, capacity and limitations
- Further traffic modelling will occur during the next phase of the PSP development to determine detailed planning aspects, such as signalised intersections.
- Does not consider the local road network; which will be developed around the arterial road network during the next planning stages

## 3.5 ACTIVITY CENTRE AND EMPLOYMENT ANALYSIS

Essential Economics Pty Ltd, July 2012

The Activity Centres and Employment Analysis:

- Considered the scale and type of town centres and/ or neighbourhood shopping centres that would be required to support a new community in Wollert
- Considered the proximity of other shopping facilities in the region
- Identified that one Major Town Centre would be required in the Wollert PSP area (which is broadly to be located next to Boundary Road)
- Identified that one larger neighbourhood centre and a range of smaller local centres would be required, depending on the final number of people who will live and work in the Precinct
- Identified that a 'homemaker' centre could be supported
- Identified that as the Precinct is on the edge of the urban area, employment provision is likely to be largely to serve local needs. The future of the E6 road may have some bearing on this.

### 3.5.1 BACKGROUND

Approximately 963ha of land Within the PSP area is identified as being grossly available for urban development, with a further 232ha of land designated for employment purposes (broad assessment prior to any detailed studies).. The proposed employment precinct involves land in the Farming Zone, which is affected by buffers from the Hanson Quarry to the east.

The *North Growth Corridor Plan* identifies a Major Town Centre (MTC) to be located in the Wollert PSP area, to serve residents in Wollert and in Epping North to the south. This MTC designation does not anticipate the current proposal for the Aurora Northern Town Centre (NTC) to accommodate more significant retail development, including a major non-food anchor in the form of a discount department store. Other smaller centres in Epping North will serve localised demand for weekly grocery and other neighbourhood-level retailing, and are not likely to affect development outcomes in Wollert.

### 3.5.2 KEY ISSUES

A number of issues have been identified as relevant for future development of the Wollert PSP:

- The precinct is likely to have an 'internalised catchment', with limited opportunity for incoming retail expenditure from beyond the PSP area.
- A more significant retail role for the Aurora NTC has the potential to affect the scale of retail activity that might be supported in the Wollert PSP, and the location for any higher-order activity centre.
- The number, scale and location of smaller centres in the Wollert precinct will depend upon the size of the MTC, the location of this higher-order centre, the planned road network, the distribution of dwellings across the PSP area, and other localised factors.
- The eastern part of the precinct is designated for employment purposes, mainly due to necessary buffers from the Hanson Quarry located to the east, and the opportunity created by the proposed E6. However, the timeframe for delivery of the E6 is unknown at this stage, and other competing employment precincts in the region are likely to be more attractive for development in the short and medium term.
- Wollert PSP is characterised by relatively large sites with few individual landowners. Moreover, a consortium of developers already has control over approximately 44% of the total precinct area. This will assist in realising a master-planned outcome to development of the precinct.



### 3.5.3 POTENTIAL RESIDENTIAL DEVELOPMENT OUTCOMES

According to analysis of available gross land area, potential dwelling yields, and expected average household size, the Wollert PSP area has potential to accommodate a total population in the range of 28,000 persons (low development scenario) to 43,000 persons (high development scenario). A population of approximately 35,000 residents is estimated under a medium development scenario and is considered the most likely development scenario.. This population outcome is associated with a dwelling yield of 9,400 lots under a low scenario, 11,800 lots under the medium scenario and to 14,400 lots under the high scenario.

### 3.5.4 ACTIVITY CENTRE PLANNING

An assessment of supportable retail floorspace development has been prepared on the basis of the anticipated population outcomes, and by analysing the potential to capture a share of the available spending by residents living within the PSP area. The analysis also takes account a relatively low share of incoming spending from non-PSP residents due to the position of the PSP at the outer edge of the metropolitan area.

#### **LOW DEVELOPMENT SCENARIO**

Under the low development scenario, total supportable floorspace development in activity centres is estimated at approximately 29,000m<sup>2</sup> and consisting of a possible tenancy mix including:

- A small-format DDS
- Two full-line supermarkets and a mid-sized supermarket
- A range of mini-majors and specialty retailing
- A range of non-retail activities.

A proposed centre configuration would involve a Major Town Centre of approximately 20,500m<sup>2</sup> of retail and non-retail commercial floorspace, a Neighbourhood Town Centre of approximately 6,100m<sup>2</sup>, and a smaller allocation for local stores/centres.

The location of these centres will be determined by a range of localised factors (including the complexity of planning the MTC due to the transmission easement), and by the need for adequate separation between the centres (including those located outside the PSP).

A homemaker centre of approximately 25,000m<sup>2</sup> (including non-retail uses) could also be supportable, with a preferred location near the intersection of Craigieburn Road East and Epping Road.

#### **MEDIUM DEVELOPMENT SCENARIO**

Under the medium development scenario, total supportable floorspace development in activity centres is estimated at approximately 43,000m<sup>2</sup>, and consisting of a possible tenancy mix including:

- A large DDS
- Three full-line supermarkets and a mid-sized supermarket
- A wide range of mini-majors and specialty retailing
- A range of non-retail activities.

A proposed centre configuration would involve a Major Town Centre of approximately 33,000m<sup>2</sup> of retail and non-retail commercial floorspace, a Neighbourhood Town Centre of approximately 7,000m<sup>2</sup>, and an allocation for local stores/centres. Potential may eventuate for a larger Local Town Centre that serves the northern part of the PSP area.

The location of these centres will be determined by a range of localised factors (including

the complexity of planning the MTC due to the transmission easement), and by the need for adequate separation between the centres (including those located outside the PSP). A homemaker centre of approximately 35,000m<sup>2</sup> (including non-retail uses) could also be supportable, with a preferred location near the intersection of Craigieburn Road East and Epping Road.

### **HIGH DEVELOPMENT SCENARIO**

Under the high development scenario, total supportable floorspace development in activity centres is estimated at approximately 57,000m<sup>2</sup>, and consisting of:

- A large DDS
- Three full-line supermarkets and 1-2 mid-sized supermarket
- A wide range of mini-majors and specialty retailing
- A range of non-retail activities.

A proposed centre configuration would involve a Major Town Centre of approximately 43,000m<sup>2</sup> of retail and non-retail commercial floorspace, a Neighbourhood Town Centre of approximately 8,000m<sup>2</sup>, and an allocation for local stores/centres. Potential may eventuate for a larger Local Town Centre that serves the northern part of the PSP area.

The location of these centres will be determined by a range of localised factors (including the complexity of planning the MTC due to the transmission easement), and by the need for adequate separation between the centres (including those located outside the PSP). A homemaker centre of approximately 40,000m<sup>2</sup> (including non-retail uses) could also be supportable, with a preferred location near the intersection of Craigieburn Road East and Epping Road.

### **IMPACT OF PROPOSED CHANGES TO ACTIVITY CENTRE PLANNING AT AURORA**

An analysis has been undertaken to examine the implications arising from proposed changes to activity centre planning for the Aurora NTC and the Aurora STC located 1.5km and 3km south of the Wollert PSP respectively. The proposed change will increase the retail provision at the Aurora NTC and increase its competitive relevance for future development of centres in the Wollert PSP. In particular, the inclusion of a Discount Department Store (DDS) at Aurora NTC (with the possibility of a second DDS in the future) would limit the opportunity to establish a strong DDS trader as part of the Wollert MTC.

Under the alternative scheme, it would be difficult to attract a DDS to anchor the Wollert MTC, particularly if insufficient separation between these two centres is provided. Even under the high development scenario, the analysis indicates that only a small-format DDS might be supported in the Wollert MTC.

Total retail provision in the Wollert PSP under this alternative scenario is estimated at 13,500m<sup>2</sup> under the low development scenario, 24,000m<sup>2</sup> under the medium development scenario and 30,000m<sup>2</sup> under the high development scenario. A provision of non-retail commercial floorspace will also be provided in the Wollert PSP centres.

While this alternative scheme would lead to lower retail provision within the Wollert PSP, it would also potentially have a beneficial effect on the activity centre network for the wider Epping North region. The designation of Aurora NTC as the major activity centre serving the wider Epping North-Wollert growth corridor would lead to one stronger higher-order centre that might potentially attract a more significant range of non-retail activities.

### 3.5.5 EMPLOYMENT AREA PLANNING

The designation of an employment precinct at Wollert has potential to add to the employment-generating capability of the precinct, and the wider Epping North-Wollert corridor. However, the Wollert employment precinct is unlikely to develop as a significant location for major industrial use, especially in the short to medium term, for the following reasons:

- Competitive disadvantage when compared against major existing and planned employment/industrial estates in the Hume Freeway corridor.
- Existing industrial land supply in the existing industrial estates in Whittlesea.
- Low accessibility to regional labour market.
- Relatively poor access to the freight network, at least until the E6 is constructed (a longer-term project)
- Limited opportunity for co-location with major related education precincts, higher-order activity centres or other pieces of infrastructure that might encourage investment.

In this context, the Wollert employment precinct is likely to evolve as a sub-regional or district-level industrial estate, accommodating a range of activities primarily focussed around servicing the local and regional population and catering for industrial land demand from building and service industries.

### 3.5.6 EMPLOYMENT OUTCOMES

According to a broad analysis of potential employment in the Wollert PSP, a total of approximately 7,500 jobs would be created under the low development scenario, representing an employment self-sufficiency rate of approximately 60% when compared against the estimated employed labour force of 12,700 persons.

Under the medium development scenario, a total of approximately 8,500 jobs would be created, representing an employment self-sufficiency rate of approximately 55% when compared against the estimated employed labour force of 16,000 persons.

Under the high development scenario, total employment generation is estimated at approximately 9,500 jobs, representing an employment self-sufficiency rate of approximately 50% when compared against the anticipated employed labour force of 19,500 persons.

The analysis shows that the Wollert PSP will provide a higher share of local employment opportunities than many other PSPs on the metropolitan fringe. However, many residents will still need to travel outside the region to access employment opportunities elsewhere, and in this regard it will be important to establish strong policy support for more significant employment generation in higher-order activity centres such as Epping Central and Aurora NTC (especially if this is to become a major retail destination), as well as in major industrial locations such as Cooper Street and employment precincts in the Hume Freeway corridor.

## 3.6 SOCIAL AND COMMUNITY INFRASTRUCTURE ASSESSMENT

ASR Research Pty Ltd

Consultants ASR Research Pty Ltd, provided a detailed analysis of community infrastructure issues and requirements across three population scenarios associated with the preparation of the Wollert Precinct Structure Plan (PSP) area.

The assessment involved:

- Review of the planning and policy documents that have relevance for social and community infrastructure provision in the Melbourne North Growth Region and its component growth areas.
- Analysis of the population forecasts for the Northern Melbourne Growth Region and its component growth areas.
- Audit of existing and planned social and community infrastructure in the Whittlesea municipality and, where relevant, the broader Melbourne North Growth Region and an assessment of the capacity of this infrastructure to cater for the Wollert and Quarry Hills PSP areas.
- The development of infrastructure provision standards and facility models for the community infrastructure provision in the Wollert and Quarry Hills PSP areas.
- A quantitative analysis of the demand for community infrastructure generated by:
  - The Wollert and Quarry Hills PSP areas and the Epping North-Wollert Area (for all infrastructure levels)
  - The Whittlesea Growth Sub-Region and the Northern Melbourne Growth Region (for sub-municipal, municipal and regional level infrastructure).
- A qualitative assessment of the social and community infrastructure needs in Wollert and Quarry Hills in the context of infrastructure needs and provision in Epping-Wollert and, where relevant, across the Whittlesea Growth Sub-Region, Whittlesea Municipal Area and the Northern Melbourne Growth Region.

Provision ratios were derived from a number of sources, including (but not limited to) standards used by Federal and State Government Departments and Agencies, and the GAA Precinct Structure Planning Guidelines. A summary of the findings and recommendations is provided below.

### ASSESSMENT FINDINGS

The report findings for the community infrastructure requirements for Wollert under the three scenarios are outlined below.

#### **POPULATION SCENARIO 1: 25,000 PEOPLE**

- 1 centre with 4 licensed rooms, 2 M&CH consulting rooms, community health/NGO space and activities rooms
- 1 centre with 3 licensed rooms, 2 consulting rooms for M&CH, PAG centre, community arts space and visiting services and activities rooms
- 1 reserve with 2 ovals, 6 tennis courts, 2 netball courts, skate ramp, aquatic centre, events space and passive space
- 1 reserve with 2 ovals
- 2 reserves with 3 soccer fields
- 1 reserve with 3 rugby fields
- 3 government primary schools
- 1 government secondary college
- 2 catholic primary schools

- 1 catholic secondary college
- 2 community gardens.

### **POPULATION SCENARIO 2: 33,000 PEOPLE**

- 1 centre with 3 licensed rooms, 2 M&CH consulting rooms, community health/NGO space and activities rooms
- 1 centre with 3 licensed rooms, 2 consulting rooms for M&CH and visiting services, PAG centre, community art space and activities rooms
- 1 centre with 3 licensed rooms, 2 consulting rooms for M&CH and visiting services and activities rooms
- 1 reserve with 2 ovals, 8 tennis courts, 2 netball courts, skate ramp, aquatic centre, events space and passive space
- 2 reserves with 2 ovals
- 2 reserves with 3 soccer fields
- 1 reserve with 3 rugby fields
- 4 government primary schools
- 1 government secondary college
- 2 catholic primary schools
- 1 catholic secondary college
- 3 community gardens.

### **POPULATION SCENARIO 3: 40,000 PEOPLE**

- 1 with 4 licensed rooms, 2 M&CH consulting rooms, community health/NGO space and activities rooms
- 1 centre with 3 licensed rooms, 2 consulting rooms for M&CH, PAG centre, community arts space and visiting services and activities rooms
- 1 centre with 4 licensed rooms, 2 consulting rooms for M&CH and visiting services and an activities room
- 1 reserve with 2 ovals, 10 tennis courts, 2 netball courts, skate ramp, aquatic centre, events space and passive space
- 3 reserves with 2 ovals
- 2 reserves with 3 soccer fields
- 1 reserve with 3 rugby fields
- 5 government primary schools
- 2 government secondary colleges
- 3 catholic primary schools
- 1 catholic secondary college
- 3 community gardens.
- Make provision for a special school.
- Provide 13 local parks of at least 1ha at strategic locations in Wollert. These locations could be in the active reserves, along the Darebin and Findon Creeks, near the community activity centres and at other positions in the development area. Provide playgrounds in the local parks.
- Provide a district passive park.
- Develop a path network which links the key facilities recommended for Wollert - community activity centres, recreation reserves, district park, schools etc – and connects with the proposed trails along the Darebin, Findon Creek and transmission line.
- Develop a 300 seat theatre at a government secondary college in Wollert
- Make provision for an emergency services precinct in Wollert. Allocate land within this precinct for a CFA station, SES unit and an ambulance station.
- Encourage the private sector to provide nursing homes and independent living facilities in Quarry Hills.
- Encourage the Office of Housing and developers to make provision for affordable/social housing in Quarry Hills.



The report also includes the following findings:

#### Epping North

- Develop a 2600m<sup>2</sup>-3200m<sup>2</sup> library facility to serve the Epping-Wollert area in the Harvest Home Rd Town Centre.
- Make provision for 2 additional bowling greens at the Epping RSL site.
- Develop a 6 court stadium at the Epping North Regional Recreation Reserve.
- Expand the ambulance station in Epping to provide for Epping North-Wollert.

#### Other

- Make provision for a 5-7 field softball/baseball venue in the Whittlesea Growth Sub-region.
- Identify a site for a regional equestrian venue in the Northern Melbourne Growth Region. This may be an existing facility which is upgraded to a regional standard.
- Identify a site for a regional lacrosse venue in the Northern Melbourne Growth Region.
- Make provision for dedicated gymnastics venue in Northern Melbourne Growth Region.
- Make provision for an off-road cycling facility in the Northern Melbourne Growth Region.
- Expand the Epping Police Station to provide for Epping North-Wollert.

## RECOMMENDATIONS

1. Appoint a community development officer to work with the Wollert and Quarry Hills communities.
2. Support the early introduction of programs specifically targeted at encouraging vulnerable groups to participate in community life – e.g. playgroups, occasional care, health and fitness programs, arts and craft activities etc for young mothers; recreation activities, music events for youth etc.
3. Advocate for and support the early delivery of critical health services and community support services – community transport, family support programs, M&CH, preschool, early intervention programs, GP services, allied health services etc.
4. Advocate for the early delivery of public transport services.
5. Provide facilities (community room, community garden, portable licensed children's room) and funding to support the activities listed in recommendations 2 and 3 – these facilities could be temporary or the initial stage of larger facilities.
6. Develop pathways between the community infrastructure.
7. Create the environment for non-Government agencies to provide services in Epping North-Wollert – e.g. access to temporary or permanent spaces, promotional and administrative support etc.

Please refer to Section 6.2.2 of the report for suggested locations and catchments for recommended facilities, and land required to house the facilities.

### 3.7 INTEGRATED WATER MANAGEMENT STRATEGY (INCLUDING CATCHMENT ANALYSIS)

CPG Australia Pty Ltd

18 July 2012 – Revision A

PLEASE NOTE THAT THE RELEASED REPORT IS A PRELIMINARY DRAFT AND DOES NOT REPRESENT THE VIEWS OF THE CITY OF WHITTLESEA, THE GROWTH AREAS AUTHORITY OR RELEVANT AUTHORITIES

The objective of the Integrated Water Management Strategy is to identify various sustainable water management systems and practices across a range of scales and sources to produce an integrated outcome to protect and enhance waterways within the PSP area. The Strategy is based on a Water Sensitive Cities approach, and is broken down into four elements:

- Conveyance and flood mitigation
- Waterway health (Stormwater quantity and quality)
- Alternate water sources
- Urban planning and community values

Recommendations are summarised below. Please also refer to Figure 7: Integrated Water Management Strategy Schematic for a diagrammatic representation of the recommended strategy.

#### CONVEYANCE AND FLOOD MITIGATION

##### **FINDON CREEK**

Three options for retardation and drainage reserves have been examined, with Option 3 the recommended solution (See Appendix A of the report - Drawing 137599G01-5). Option 3 comprises:

- Three retarding basins, refer to Section 5.1.2 for hydrologic discussion
- Constructed waterways of various hydraulic widths (refer to Section 5.2.1 for hydraulic discussion)
- Enhancement of Natural waterways (refer to Section 5.2.1 for hydraulic discussion)

See Figure 8 for detail on the size and location of retarding basins and drainage reserves under the Option 3.

##### **EDGARS CREEK**

The report examines one option for retardation and drainage reserves comprising:

- Two retarding basins (refer to Section 5.1.4 for hydrologic discussion)
- Constructed waterways of various hydraulic widths (refer to Section 5.2.3 for hydraulic discussion)
- Enhancement of Natural waterways (refer to Section 5.2.3 for hydraulic discussion)

See Appendix B of the report – Drawing 137599G02-3. This figure has not been include in the summary paper, as it incorrectly shows the east branch of Edgars Creek as Category 1 Growling Grass Frog Habitat. This alignment of Growling Grass Frog Habitat differs from that shown in the North Growth Corridor Plan. As such, recommendation will be subject to change following the release of the DSE Biodiversity Conservation Strategy.

##### **CURLY SEDGE CREEK (TRIBUTARY OF THE MERRI CREEK (UPPER))**

No retardation works or significant waterway works are recommended.

## WATERWAY HEALTH

### STORMWATER QUANTITY

It is recommended that runoff frequency be reduced to as few days as possible and runoff flow rate be limited to 1.5 times pre-development flow rate. The IWMS has recommended an arrangement of rainwater tanks at allotment scale, infiltration systems and rain gardens at the streetscape level, with retarding basins and wetlands at on a precinct scale to achieve this. The implementation of open space irrigation tanks will also act as reducer of both frequency and flow rate by diverting flow into storage for reuse.

### STORMWATER QUALITY

Water Sensitive Urban Design targets which have been recommended for the precinct include the following:

- 70% reduction of total Gross Pollutant loads
- 80% reduction of total Suspended Solids
- 45% reduction of total Nitrogen
- 45% reduction of total Phosphorus

This is achieved through the implementation of a 'train' of treatment measures across an assortment of scales that include the following:

- Rainwater tanks located at lot scale.
- Rain gardens on street scale
- Stormwater harvesting at open space locations
- Infiltration systems for removal of pollutants
- Sedimentation basins, wetlands located within retarding basins and other strategically identified points within the catchment.

## ALTERNATIVE WATER SOURCES

Alternate water sources to potable water include recycled water (Class A), stormwater and rainwater. Utilising these alternate sources reduces the demand for potable within the Wollert PSP site.

- Rainwater tanks installed at an allotment level can be reused for hot water in the shower with a potential saving of 20% per lot per annum.
- Stormwater tanks under active open spaces can be used for irrigation providing savings of up to 8% of the total Wollert site potable water demands, before filtering through the soil into infiltration systems where pollutants are further removed prior to entering natural waterways.
- Recycled water from the Aurora Craigieburn West treatment facility will be used as an alternate source for purposes of garden watering, toilet flushing, fire fighting and laundry use as well as open space irrigation to top up supply levels in periods of low rainfall.
- Grey water, Sewer mining and Aquifer recharge systems were all regarded as not viable or suitable for the Wollert precinct due to natural features and soil types.

## URBAN PLANNING AND COMMUNITY VALUES

- The option to place infiltration systems at an allotment level (i.e. rain gardens) was discussed in the draft IWM report), however, due to a number of issues with its implementation in the past, recommend their inclusion in the overall strategy for stormwater management.
- Strategic placement of the stormwater harvesting tanks has been nominated as a key to avoid excessive and costly infrastructure to divert runoff into storage tanks for irrigation. Consideration needs to be given as to where to place open space land use within the Wollert PSP to maximise efficiency.

- Integrating WSUD within the development should also consider the community values by creating public spaces that the community is proud of and can form a sense of attachment. The development should encourage bringing people to the water rather than fencing it off and creating a disconnection to these public spaces. Utilising such techniques such as boardwalks, information boards, activity nodes around these treatments will promote community engagement with the WSUD elements within the development.
- Rather than a growling grass frog conservation zone being seen as an isolated zone separate from development of the rest of the site, integrating this with recreational infrastructure such as bike paths, park benches and walkways could create the centrepiece around which a sustainable community can be established.

## KEY ISSUES IDENTIFIED

- Soil Infiltration rates for this report was assumed at 3.6mm/hour. However due to the unique properties of soil in the region, this figure can be as low as <0.01mm/hour in some areas of the Wollert PSP. While only further geotechnical investigation can substantiate these numbers, if they are found to be this low, any treatments that utilise infiltration as a means to treat stormwater runoff may not be efficient enough for implementation.
- There are several arrangements for the recommended 'treatment trains' that can be put into practice including a 'centralised' approach where an end of line stormwater harvesting tank and infiltration system is installed to service all of the Wollert PSP site open space irrigation requirements through a network of pipes, or a 'decentralised' approach whereby numerous smaller tanks are located throughout the precinct to irrigate the open space in that immediate area. While both are proven to be effective in reaching the targets of this paper, further feasibility study needs to be conducted in order to find the most efficient balance of the recommended approaches.
- The Department of Health has concerns with ensuring the quality of rainwater when captured for the purposes of hot water use also at an allotment scale and further investigation and discussion is required to ensure all parties are satisfied.



Figure 7: Spatial Distribution of Assessed Trees by Arboricultural Value, PSP 1070

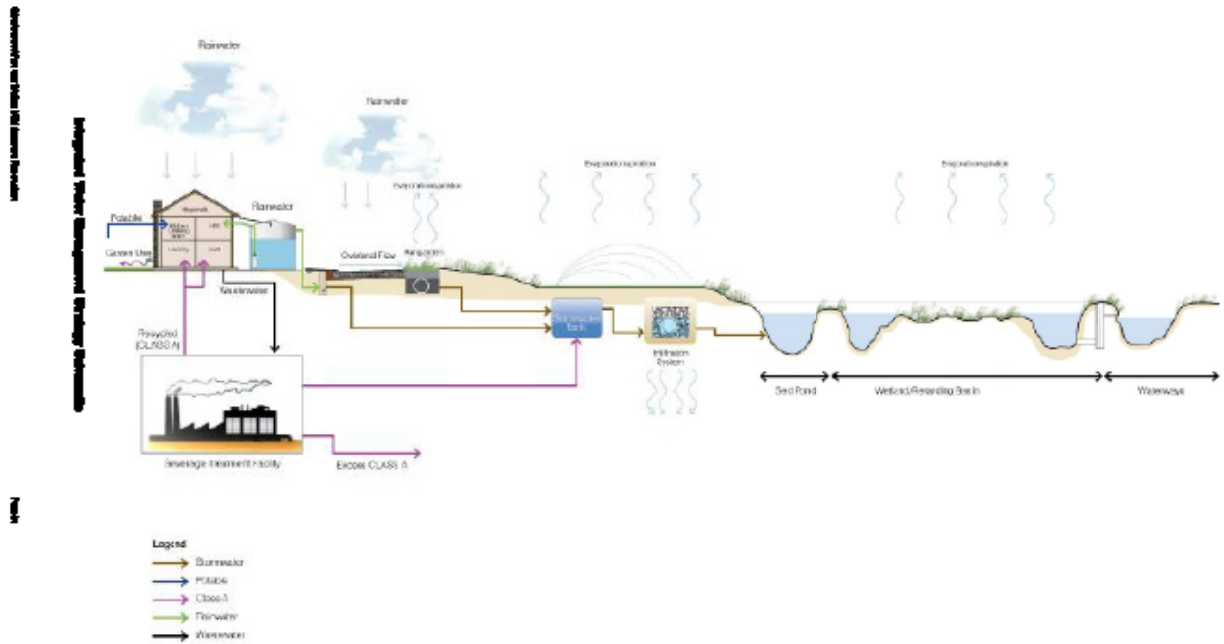
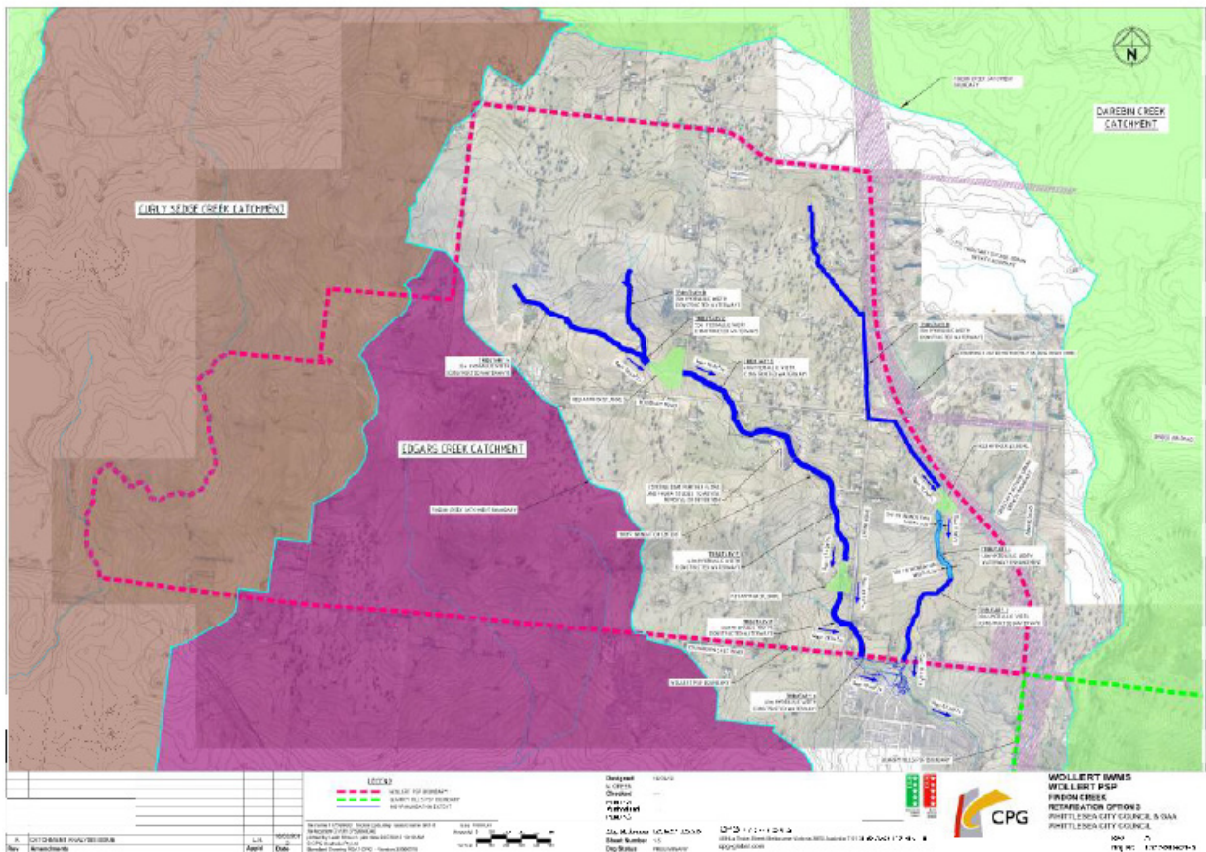


Figure 8: Spatial Distribution of Assessed Trees by Arboricultural Value, PSP 1070



### 3.8 UTILITIES AND SERVICES

CPG Australia Pty Ltd, August 2012

The Utilities and Services report provides a summary of the ability to get key services such as gas, water and electricity to the Wollert PSP area and what capacity they have or additional work would be required to augment any services.

The conclusions of the report are relatively straightforward but are replicated below for ease of reference:

#### **SEWERAGE**

Available; the Findon Creek Branch Sewer presents the most immediate opportunity for developments within Wollert.

#### **WATER SUPPLY**

Partially available; Yarra Valley Water will need to extend trunk mains up Bindts Road and along Lehman's Road and Craigieburn East Road.

#### **RECYCLED WATER SUPPLY**

Limited; Yarra Valley Water will need to commit to significant augmentation of the Epping North system to service Wollert.

#### **ELECTRICITY SUPPLY**

Available; high voltage supply is available to Wollert via overhead supply along Craigieburn East Road and Epping Road.

#### **GAS SUPPLY**

Will be made available; a new City Gate is to be constructed by APA in Craigieburn East Road. This will be coupled with a 3km extension to the distribution network along Craigieburn East Road from the City Gate.

#### **TELECOMMUNICATIONS**

Will be made available; this will be made available under the NBN Co national broadband network.

### 3.9 ENVIRONMENTAL SITE ASSESSMENT - PHASE 1

Cardno Lane Piper Pty Ltd, July 2012

The Environmental Site Assessment has investigated the history of land uses within the Wollert PSP area based on a range of background sources, including planning permits, mapping, primary industry records (e.g. work authority licences), historical records or EPA records). The report:

- Identifies potentially contaminated areas
- What risks they might pose to any future urban land use
- What further assessment may be required

A review of the site history and observations made during site inspections have identified a number of potential sources of contamination derived from the following associated uses:

- Automotive repair/engine works including chemical storage (i.e. fuels, automotive products, waste liquids)
- Historical or current potential for Chemical storage
- Filling with imported soil
- Stockyards
- Grazing
- Fuel storage
- Other industrial activities including one suspected poultry farm; one site used by an earthmoving construction business
- Offsite sources such as the Wollert landfill

The Wollert landfill is located immediately to the east of the PSP site. The closest cell to the PSP boundary appears to be over 500m which is in accordance with the recommended buffer distance from the proposed land use in the PSP area (Cardno Lane Piper, 2012).

Areas of potential contamination have been considered and in accordance with DSE guidance:

- Seventeen properties have a high potential for contamination and therefore require further assessment.
- Fifteen properties where past and current land use has included filling, market gardens, fuel storage or an industrial activity are ranked Medium Potential and therefore, would require an Environmental Site Assessment (DSE Assessment Level B).
- At 66 properties, site conditions and infrastructure have a low potential for contamination and are unlikely to require any further assessment.
- Five properties were not inspected due to access issues; however, these have been assessed to be a low ranking based on aerial and current photographs available.
- The onsite property located at 471 Epping Road, Wollert was issued with a Statement of Environmental Audit due to the presence of residual soil and groundwater contamination from a former Shell depot. The Statement was issued with a condition that resident occupiers should be informed where there is any future garden or landscaped areas constructed on the site where the occupiers could access the fill or soil. Additionally, groundwater testing should be undertaken prior to its proposed use (Cardno Lane Piper, 2012).

### 3.10 HANSON LANDFILL AND QUARRY – RISK ASSESSMENT

Golder Associates, 30 July 2012

#### BACKGROUND

The Hanson Landfill and Quarry is a major facility located to the east of the Wollert PSP area at 45 Bridge Inn Road, Wollert. The existing site is approximately 350 hectares in area.

The Landfill is one of the major landfills in the north and west of Melbourne, accepting putrescible waste, and is expected to be operational beyond 2040. It is recognised as a strategic site, providing regional waste disposal services at best-practice standards in an efficient and close location to metropolitan Melbourne. It is therefore an objective of the City of Whittlesea and the State Government to ensure services and facilities continue and are accessible to all while reducing the impact on the environment of these types of operations.

Current quarrying activities are isolated to the north of Bridge Inn Road, however a Work Authority issued by the Department of Primary Industries includes a second area south of Bridge Inn Road at 90 Bridge Inn Road, where operations are yet to commence (this site is now encumbered by the Public Acquisition Overlay reservation for the E6)..

The primary purpose of the risk assessment is to identify those environmental impacts with the potential to affect development of sensitive land uses within the Wollert PSP area. Sensitive uses are defined within the EPA Victoria Publication AQ2/96 Recommended Buffer Distances for Industrial Residual Air Emissions as “residential areas and zones, hospitals, schools, caravan parks and other similar uses involving the presence of people for extended periods, except in the course of their employment or for recreation”. Land uses which do not warrant amenity protection from emission sources include open space, commercial and business zones, public roads and light industry.

The Hanson Landfill and Quarry risk assessment involved the preparation of a site conceptual model to identify source/receptor pathways, allocations of risk where pathways existed, and assessment of medium or greater risks.

#### KEY FINDINGS

The above process identified in the further assessment of potential landfill gas, odour, noise and dust impacts on the PSP area.

Risk of fire, wind-blown litter, leachate, asbestos dust, migration of contaminants and stormwater/groundwater contamination were considered to be low (or lower), and so did not warrant further assessment.

The risk assessment did not examine site-specific assessments landfill gas migration or noise and vibration levels arising from quarry blasting, and so recommended buffer distances contained within EPA Victoria guidelines have been adopted.

The Environmental Protection Agency’s EPA Victoria’s Best Practice Environmental Management Guidelines (BPEM) recommend that where sensitive uses or buildings and structures are proposed to be developed within 500 metres of a putrescible waste landfill, then a site specific assessment of the risk should be undertaken, preferably through the conduct of an environmental audit under Section 53V of the Environment Protection Act.

EPA Victoria also provides recommended buffer distances for other industrial activities in the



publication Recommended Buffer Distances for Industrial Residual Air Emissions, EPA Victoria Publication AQ 2-86, dated July 1990. This Includes recommended buffer distances for mining and extractive industry, including hard rock quarrying. For Extractive Industries comprising hard rock with blasting, a 500 metre buffer distance is recommended. The medium-risk of odour line, 500 metre buffer distances for the current Quarry and Landfill sites, and the proposed future Quarry are identified on Figure 3: Local Context and Site Features Plan.

## KEY ISSUES IDENTIFIED

- Odour impacts are the primary issue affecting development of sensitive land uses within the Wollert PSP area, exceeding the 500 metre nominal landfill gas and noise separation distances in all directions (with the exception of a small section southwest of Boundary Road and Epping Road).
- Site-specific risk assessments of landfill gas migration will be required for any development or construction (including sub-surface infrastructure) within the 500 metre landfill gas buffer.
- Close consideration will need to be given to identifying appropriate land uses within the areas affected by moderate odour risk and within the buffer areas.