

AURORA DEVELOPMENT PLAN: PART 2

11 December 2007

Aurora Development Plan Part 2

Development Plan approved by the City of Whittlesea
on 18 December 2007, in accordance with Clause 43-04
Schedule 5 of the Whittlesea Planning Scheme.



Signature of the Responsible Authority

24/12/07

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1 INTRODUCTION

1.1 DEVELOPMENT PLAN

A Development Plan (DP) is a report and enclosed DP map that provides a general outline of the way land is intended to be developed. The DP designates proposed housing areas and other main land uses, the neighbourhood connector and arterial street network and the location of community facilities, for a comprehensively planned development of land.

The DP forms the framework for more detailed planning at the subdivision plan and permit application plan stages. The detail may vary or 'fine-tune' the DP provided it does not change its general intent (except to the satisfaction of the responsible authority).

Objectives for the development of the land and guidelines relating to the provision of infrastructure, facilities, services and other matters may form important parts of the DP.

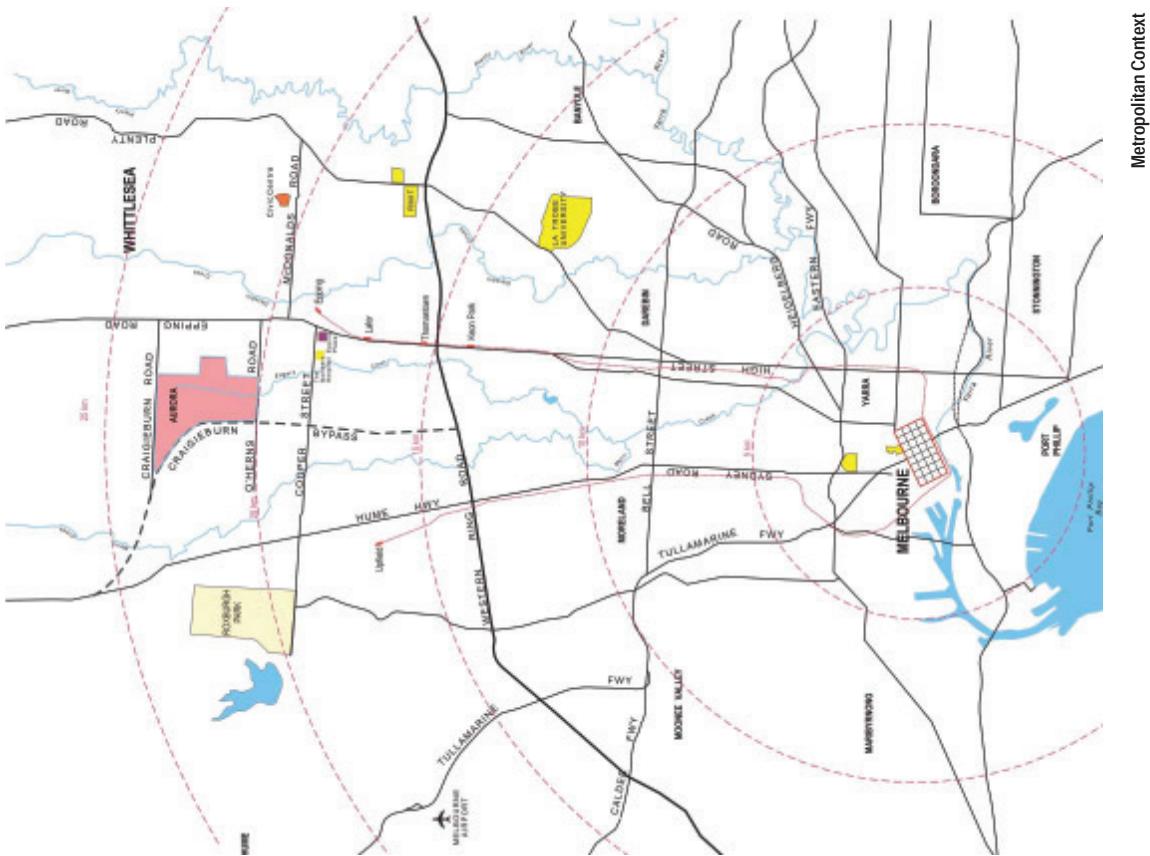
1.2 AURORA AND AURORA DEVELOPMENT PLAN

The area north of Epping in the City of Whittlesea (Whittlesea), has been known for some time as Epping North. In the past, a constraint to the development of Epping North has been the availability and capacity of infrastructure services and the cost of overcoming these servicing constraints. An associated constraint has been the fragmented land ownership, which has made it more difficult to plan for and implement the necessary coordinated approach to overcoming the identified constraints.

Whittlesea representatives have acknowledged over time that the solution would lie with a larger developer becoming involved in Epping North and thus having the capability of coordinating the planning and development of the area.

In 2001 and 2002, VicUrban determined to put in place arrangements to become the developer of a significant (in area and focal location) portion of Epping North. These arrangements have now resulted in VicUrban controlling a large part of the land, known as Aurora.

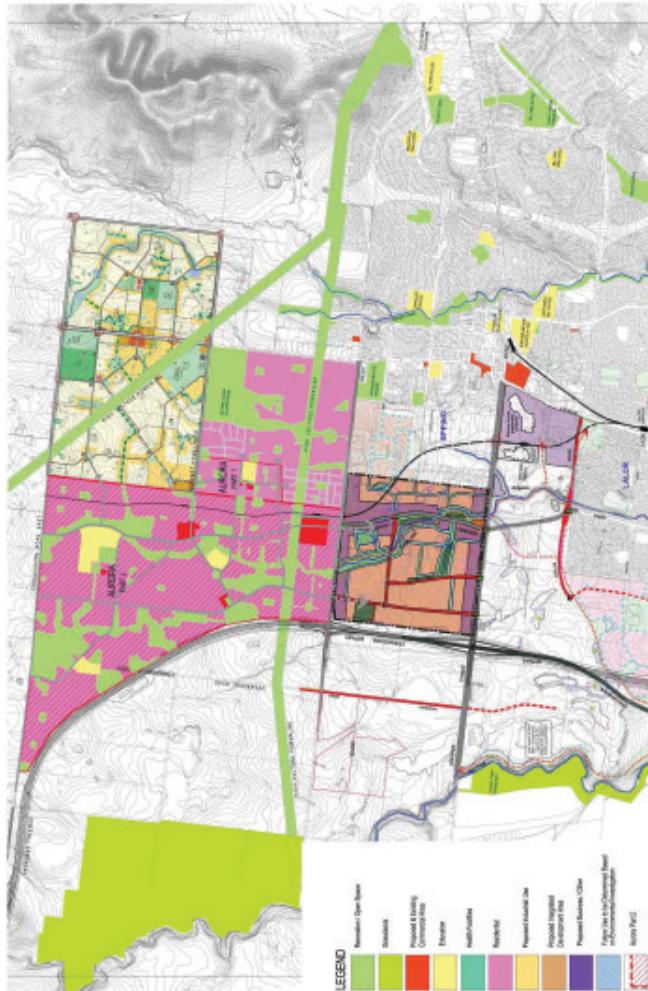
Aurora is approximately 20 kilometres north of the Melbourne central activities district and consists of about 630 hectares of land bordered by Craigieburn Road East to the north, O'Hens Road to the south and the Hume Highway (Craigieburn Bypass) to the west. The east boundary follows existing property titles and is not marked by physical features of note.



Metropolitan Context

Aurora is approximately 1.5 kilometres north west of existing urban development in Epping and 3 kilometres from Epping railway station. Aurora is bounded generally by rural properties, several of which have had development plans prepared to facilitate the residential development of the land. The land south of O'Herns Road is identified as the Cooper Street Employment Area. The Craigieburn Grasslands and Merri Creek are approximately 2 kilometres west of the Craigieburn Bypass.

The Aurora Development Plan Part 2 (ADP2) relates to the western 592 hectares of Aurora (the subject land). The development of the eastern 37 hectares of Aurora is described in the Aurora Development Plan Part 1 (Edition 1, September 2003) (ADP1), which was endorsed by Whittlesea on 19 September 2003.



1.3 VICURBAN AND AURORA

ADP2 has been prepared by VicUrban as the intended developer of the majority of the subject land.

The functions of VicUrban are to deliver sustainable urban development, contribute to improving housing affordability, create prosperous communities and promote excellence in design.

VicUrban has extensive experience in urban development, ranging from comprehensively planned outer suburban estates to complex redevelopments in the established urban area. In its 30 years, VicUrban has developed and sold over 35,000 residential lots.

Aurora aims to raise the benchmark within the property development industry by demonstrating new and innovative ways to manage our finite resources. Aurora will be a pioneer in the reuse of water and energy efficiency. VicUrban aims through demonstration to encourage private industry to replicate its sustainable practices.

Like sustainability, Aurora will evolve over time. The goal of Aurora is to push continuously toward more sustainable land, community and built form outcomes. The initiatives that Aurora implements today will continue to evolve and change over time as new technology allows VicUrban to improve its practices. VicUrban is confident that Aurora will be a model development for the future, both now and through its life.

Regional Context

2 SITE CONTEXT AND ANALYSIS

- 2.1 PLANNING POLICY AND STATUTORY CONTROLS
 - for residential, commercial, industrial, recreational, institutional and other public uses" (Clause 14.01 Planning for urban settlement).
 - "To facilitate the orderly development of urban areas" (Clause 14.01).
 - "To assist the protection and, where possible, restoration of catchments, waterways, water bodies, groundwater and the marine environment" (Clause 15.01 Protection of catchments, waterways and groundwater).
 - "To assist the protection of:
 - Life, property and community infrastructure from flood hazard.
 - The natural flood carrying capacity of rivers, streams and floodways.
 - The flood storage function of floodplains and waterways.
 - Floodplain areas of environmental significance" (Clause 15.02 Floodplain management).
 - "To assist the control of noise effects on sensitive land uses" (Clause 15.05 Noise abatement).
 - "To assist the protection and conservation of biodiversity including native vegetation retention and provision of habitats for native plants and animals and control of pest plants and animals" (Clause 15.09 Conservation of native flora and fauna).
 - "To assist creation of a diverse and integrated network of public open space commensurate with the needs of urban communities and rural areas" (Clause 15.10 Open space).
 - "To assist the conservation of places that have natural, environmental, aesthetic, historic, cultural, scientific or social significance or other special value important for scientific and research purposes, as a means of understanding our past, as well as maintaining and enhancing Victoria's image and making a contribution to the economic and cultural growth of the State" (Clause 15.11 Heritage).
 - "To encourage land use and development that is consistent with the efficient use of energy and the minimisation of greenhouse gas emissions" (Clause 15.12 Energy transport links).
 - "To ensure a sufficient supply of land is available
 - efficiency).
 - "To promote the provision of renewable energy, including windenergy facilities, in a manner that ensures appropriate siting and design considerations are met" (Clause 15.14 Renewable energy).
 - "To encourage:
 - Subdivisions in locations with access to physical and community infrastructure and providing a range of lot sizes, a convenient and safe road network, appropriate pedestrian and cycle paths, sufficient useable public open space and low vulnerability to fire.
 - Residential development that is cost-effective in infrastructure provision and use, energy efficient, incorporates water-sensitive design principles and encourages public transport use.
 - Opportunities for increased residential densities to help consolidate urban areas" (Clause 16.01 Residential development for single dwellings).
 - "To encourage the development of well-designed medium-density housing which:
 - Respects the neighbourhood character.
 - Improves housing choice.
 - Makes better use of existing infrastructure.
 - Improves energy efficiency of housing" (Clause 16.02 Medium density housing).
 - "To encourage the concentration of major retail, commercial, administrative, entertainment and cultural developments into activity centres (including strip shopping centres) which provide a variety of land uses and are highly accessible to the community" (Clause 17.01 Activity centres).
 - "To encourage developments which meet community needs for retail, entertainment, office and other commercial services and provide net community benefit in relation to accessibility, efficient infrastructure use and the aggregation and sustainability of commercial/facilities" (Clause 17.02 Business).

Aurora facilitates the implementation of the above policy objectives as follows.

- Aurora is within generally the Urban Growth Boundary, is designated as 'Future urban' within the Plenty Valley-Epping North growth area, is identified as 'Residential - Future' in the Municipal Framework Plan and forms part of the identified urban development area in the Epping North Strategic Plan (ENSP). ADP2 is the relevant structure plan that will facilitate the orderly development of the subject land.
- Aurora is opposite the Cooper Street Employment Area (on the south side of OHems Road). The population of Aurora creates a potential local labour source to support this area.
- The dwelling density at Aurora will be significantly higher than 'conventional' subdivisions, in growth areas, to facilitate opportunities for high quality and sustainable public transport. Aurora incorporates a public transport corridor with a proposed station / interchange adjacent to each primary activity centre. ADP2 envisages higher density, mixed uses surrounding the two primary activity centres.
- The Scheme includes Edgars Creek, which traverses Aurora, in the Floodway Overlay (RFO). A planning permit is generally required to construct a building or construct or carry out works and to subdivide land in a RFO. A planning permit application is required generally to be referred to the relevant floodplain management authority. ADP2 retains Edgars Creek within a buffer area 15 metres wide on either side of the Creek and proposes to improve its habitat quality through revegetation, weed control and wetland creation designed to be suitable for the Growing Grass Frog, native fish and other aquatic species. A drainage management plan will also be developed to manage the stormwater runoff from Aurora into Edgars Creek.
- The Scheme includes that part of Aurora within 150 metres of the east edge of the reservation of the Craigieburn Bypass in Schedule 2 to the Design and Development Overlay (DDO). A planning permit is generally required

to construct a building or construct or carry out works and to subdivide land in DDO2. Any development in DDO2 which is associated with a specified use, including a dwelling, must include noise attenuation measures to the satisfaction of the Roads Corporation.

- A flora and fauna survey of the subject land has been completed and Aurora has been designed to protect the sites of greatest ecological value.
- The Aurora open space system protects and enhances natural and cultural features within a series of highly accessible and connected open spaces that provide a diverse range of recreation opportunities.
- The Aboriginal and European histories of the subject land have been investigated and Aurora has been designed to conserve and retain as much of the evidence of both histories as practicable.
- The orientation of the Aurora street network and the lots will maximise the potential for energy efficient buildings. A six-star energy rating is a compulsory requirement for each new dwelling at Aurora.
- ADP2 anticipates a typical lot size mix ranging from 180 to 650 square metres, which will encourage a diverse range of housing options.
- Aurora incorporates two primary activity centres providing a wide range of retail, commercial, community and residential opportunities. Each primary activity centre is located adjacent to a public transport station / interchange, near the intersection of arterial streets and on the principle walking and cycling network.
- The arterial street network of Aurora is a loose grid that provides straightforward connections between the activity centres, education centres and public open spaces within and outside Aurora.
- ADP2 envisages a broad mix of land uses in close proximity to each other and to a high proportion of the dwellings, to facilitate walking and cycling between activities.
- The education centres shown on the ADP2 map have been confirmed by the Department of Education and Training and independent school providers. These centres are located generally on the edge of the walkable

catchments of the public transport stations / interchanges to maximise the dwelling density within the catchments to support public transport. All of the education centres are located on the principle walking and cycling network and adjacent to public open space.

- All services, including water supply, sewerage, drainage, gas, electricity and telecommunications (including fibre to the home), will be provided to all dwellings at Aurora in the manner that is the most economically sustainable and minimises the impact on the environment.
- VicUrban will continue to work with Whittlesea to develop appropriate development contributions for the provision of physical and social infrastructure at Aurora and Epping North.
- All built form at Aurora will express a contemporary aesthetic and aspects of sustainable building design will become an integral part of the architecture. VicUrban proposes a number of processes to ensure high quality in the built form.
- Sections 2.2 to 7 provide a comprehensive explanation of the response of Aurora to the key policy objectives of the SPPF.

"rainwater tank for each dwelling, and significant dwelling diversity and densities" (page 26, draft Implementation Plan 2: Growth Areas).

- Aurora responds as follows to the specific features described in Melbourne 2030.
 - ADP2 incorporates a public transport corridor with a proposed station / interchange adjacent to each primary activity centre. The creation of Aurora as a public transport oriented development will be enhanced significantly by the provision of a rail connection to the suburban passenger rail network.
 - A minimum six-star energy rating is prescribed for each new dwelling at Aurora.
 - Aurora has been designed to treat sewage locally to tertiary standard and to reticulate the recycled water back to lots for toilet flushing and private and public open space irrigation.
 - Rainwater tanks for capture of roof water for hot water, bathroom and laundry uses are expected to be utilised at Aurora.
 - ADP2 anticipates a typical lot size mix ranging from 180 to 650 square metres to encourage a range of housing options.
- 2.1.3 Municipal Strategic Statement

The Whittlesea Municipal Strategic Statement (MSS) contained in Clause 21 of the Scheme "encapsulates significant planning policy directions for the municipality and in turn provides the strategic basis for statutory land use controls" (Clause 21.01).

The MSS describes the framework for growth area planning in Whittlesea, which, following on from Ministerial Directions and the MSS, includes strategic plans, local structure plans / incorporated plans / incorporated documents, development plans and permits for subdivision. Whittlesea has prepared the ENSP which includes Aurora. The Aurora Comprehensive Development Plan is an incorporated document in the Scheme while ADP2 combines the local structure plan and DP for the subject land required by this framework.

The vision of Whittlesea for the Municipality is summarised in twelve key land use planning objectives and the Municipal Framework Plan, which identifies the subject land as 'Residential - Future' with one 'Activity Centre' on Harvest Home Road and another near OHems Road.

The key land use planning objective for Residential Growth Areas is "to plan for a diverse series of residential communities that have a unique identity and sense of place, cater to all segments of the housing market and respect and incorporate local environmental and cultural features" (Clause 21.06-1).

Epping North is identified specifically as a growth opportunity. Clause 21.06-1 states that investigations "as to the suitability of urban growth occurring within the Epping North area will continue with the possibility of short to medium term growth occurring within the first stage of development subject to a comprehensive strategic planning process". The preparation of this ADP2 is the final step in the 'comprehensive strategic planning process' required to demonstrate the suitability of the subject land for residential development.

Clause 21.06-1 summarises the development density, style of development, capacity and intended housing market for the Epping North (West) growth opportunity as follows.

- "Medium to high development density with a target density across the entire area of approximately 19 dwellings per hectare.
- Comprehensive, permeable style of development which emphasises: walkability, high quality and sustainable public transport, innovative and sustainable infrastructure solutions, protection of sites of high ecological and heritage value, activity centres with a wide range of commercial, community and residential opportunities, appropriate interfaces with and connection to adjoining land uses, Edgars Creek story rises and River Red-gum stands will form the basis of the public open space network.
- Maximum capacity of approximately 25,000 persons over a development life of approximately 16 years.
- Mixture of first, second and third home buyers seeking more sustainable urban outcomes, such as energy efficient

dwellings, close proximity to activity centres, community facilities and public open space and the provision of a variety of easily accessible modes of transport. Emphasis will be placed on the provision of a mix of lot sizes to encourage a range of housing options".

Other relevant key land use planning objectives of the MSS are as follows.

- "To effectively manage urban growth in a manner that maximises beneficial relationships between compatible land uses and which avoids inappropriate incursions into non-urban or environmentally sensitive areas" (Clause 21.06-2 Managing Urban Growth).
- "To promote the establishment of increased diversity and quality in housing provision to meet the needs of existing and future residents of the City of Whittlesea in a manner which contributes positively to local character and sense of place" (Clause 21.06-3 Housing Provision).
- "To create a better jobs / housing balance and achieve greater diversity in employment opportunities" (Clause 21.06-4 Employment and Economic Development).
- "To define the role and extent of a series of activity centres which establish a focus for the provision of accessible goods and services, employment generation, community meeting places and associated land uses" (Clause 21.06-5 Activity Centres).
- "To establish an efficient, interconnected (multi mode) transportation system which increases the level of accessibility and choice within and beyond the City of Whittlesea" (Clause 21.06-6 Transport and Accessibility).
- "To actively pursue resolution of provision of key strategic items of physical infrastructure for unserviced growth areas and to plan for and identify means to fund the establishment and maintenance of social and physical infrastructure in a timely and efficient manner" (Clause 21.06-7 Infrastructure Provision).
- "To progressively upgrade the image and appearance of the City of Whittlesea focusing on retention of local environmental features, landscape qualities and urban and landscape design improvements" (Clause 21.06-9

Image and Appearance).

"To identify, permanently preserve and promote opportunities for the enhancement of local environmental assets which are vital to the maintenance of ecological processes" (Clause 21.06-10 Environmental Assets).

"To plan for the comprehensive leisure and recreation needs of existing and future residents and to support the establishment of tourism enterprises that are compatible with the local environment and pattern of land uses"

(Clause 21.06-11 Leisure, Recreation and Tourism)

"To increase the level of protection for and opportunities for incorporation of the City's European and Aboriginal heritage" (Clause 21.06-12 Heritage and Culture),

In general, Aurora responds as follows to the key land use planning objectives of the MSS.

The net dwelling density (around 19 dwellings per hectare) at Aurora will be higher than that identified for the Epping North (east) growth opportunity and 'conventional' subdivisions in the outer areas of Melbourne in order to facilitate opportunities for high quality and sustainable public transport. It is also intended to provide alternative housing options such as apartment-style dwellings at a denser level, as well as a small number of larger lots.

The style of development and capacity of Aurora is in accordance generally with that outlined for the Epping North (west) growth opportunity.

The provision of a range of lot sizes at Aurora will encourage a variety of housing options to attract a mixture of first, second and third home buyers.

Aurora will contribute to the protection of the non-urban and environmentally sensitive areas of Whittlesea as it is within generally the Urban Growth Boundary, is designated as 'Future urban' within the Plenty Valley-Epping North growth area identified by Melbourne 2030, is identified as Residential - Future in the Municipal Framework Plan and forms part of the ENSP.

The population of Aurora will create a potential local labour

source to support the Cooper Street Employment Area on

the south side of OHems Road.

- The two primary activity centres of Aurora are located appropriately to attract a significant proportion of the undistributed retail floorspace in Whittlesea, as they are adjacent to the public transport stations / interchanges, near the geographic centre of Epping North (northern primary activity centre) and opposite the Cooper Street Employment Area (southern primary activity centre).
- ADP2 incorporates a public transport corridor with two new stations / interchanges and an interconnected street network that allows for alternative modes of transport including convenient bus and car travel, walking and cycling.
- VicUrban will continue to work with Whittlesea to agree on appropriate development contributions for the provision of physical and social infrastructure at Aurora and Epping North.
- Existing landscape character elements of the subject land will be an integral part of the landscape design of Aurora to aid the development of a local sense of place.
- A flora and fauna survey of the subject land has been completed and Aurora has been designed to protect the sites of greatest ecological value. The highest quality examples of Plains Grassy Woodland and stony rises are protected in conservation areas.
- The Aurora open space system protects and enhances natural and cultural features within a series of highly accessible open spaces that provide a diverse range of recreation opportunities for both passive and active recreation.
- The Aboriginal and European histories of the subject land have been investigated and Aurora has been designed to conserve and retain as much of the evidence of both histories as practicable.

Sections 2.2 to 6 provide a comprehensive explanation of the response of Aurora to the key land use planning objectives of the MSS.

2.14 Local Planning Policies

	Aurora to the objectives and policy directions of this Policy.	(e) Telecommunications Conduit Policy	Other key features of the ENSP include the following.
(a) Open Space Policy	The Open Space Policy (Clause 22.01) of the Scheme relates to the provision of open space in the Municipality.	(c) River Redgum Protection Policy	The Telecommunications Conduit Policy (Clause 22.13) of the Scheme applies to subdivision and the construction of dwellings and other buildings and works in the Municipality.
	The objective of this Policy is "to provide a framework to undertake planning, provision, development and maintenance of an integrated open space system which meets the wide ranging needs of the community".		The objective of this Policy is "to ensure that the development of urban and rural areas takes into account the presence, retention, enhancement and long term viability of River Red Gums in urban areas".
	Section 5.5 describes the response of Aurora to the objective and policy directions of this Policy.		The objective of this Policy is "to ensure provision of conduits for optical fibre cabling to facilitate future installation of advanced telecommunications services".
(b) Subdivision Design Policy	The Subdivision Design Policy (Clause 22.04) of the Scheme applies to subdivision for residential, rural residential, rural living, industrial and commercial development.	(d) Development Contributions Plan Policy	The Development Contributions Plan Policy (Clause 22.11) of the Scheme applies to new residential and non-residential subdivisions in the Municipality.
	The objectives of this Policy are as follows.		The objective of this Policy is "to ensure the provision of basic infrastructure in a timely fashion to meet the needs generated by new development".
			"To achieve appropriate site responsive subdivision design for the creation of new undeveloped allotments for residential, rural residential, rural living, industrial and commercial development.
			To define and evenly apply municipal planning objectives for subdivision design.
			To create a sense of place and community focus through subdivision design.
			To promote subdivision that ensures integration, lot size diversity, efficient open space provision, movement, and appropriate streetscape design.
			To define the need for and requirements for site analysis procedures".
		(e) Incorporated Documents	Clause 21.05 of the Scheme describes the ENSP as setting "the broad directions for urban development within Epping North covering issues such as the pattern of urban development, a neighbourhood based approach to more detailed local structure planning, open space, provision for a broad transport network, protection of environmental features, servicing, and provision for community, commercial and recreational facilities".
		(a) Epping North Strategic Plan	Integral to the overall layout of the ENSP is the creation of interlinked communities with each having a relationship to the central core or 'town centre' which is shown in Aurora on Harvest Home Road and surrounded by 'high density residential'.

Section 5 provides a comprehensive explanation of the response of

The ENSP acknowledges that further studies may be required to inform the preparation of Incorporated Plans. More detailed investigations of the subject land have been completed as part of the preparation of the Aurora Comprehensive Development Plan (incorporated in the Scheme) and ADP2 and are described in Sections 2 and 3. Aurora responds as follows to the features shown on the ENSP.

- Aurora incorporates two primary activity centres providing a wide range of retail, commercial, community and residential opportunities, including a total of 20,000 square metres of retail and commercial floor space. In accordance with the ENSP, the northern primary activity centre is positioned on Harvest Home Road between the transport corridor to the east and Edgars Creek to the west. ADP2 envisages also higher density, mixed uses surrounding the two primary activity centres.
- ADP2 incorporates two local activity centres. In accordance with the ENSP, one of the local activity centres is to the south west of the northern primary activity centre. Both of the local activity centres are located on higher order streets and the principal walking and cycling network. The local activity centre to the north of the northern primary activity centre incorporates a community activity centre and is adjacent to education centres and public open space.

Section 5 provides a more comprehensive explanation of these responses. Based on the above, ADP2 is consistent generally with the ENSP.

The transport corridor of the ENSP is incorporated close to the east boundary of Aurora. A new station /interchange is proposed adjacent to each of the primary activity centres.



Epping North Strategic Plan

The Aurora open space system protects and enhances natural and cultural features within a series of highly accessible open spaces that provide a diverse range of recreation opportunities for both passive and active recreation. In accordance with the ENSP, the open space network connects Edgars Creek, the power easement and the portion of Plains Grassy Woodland of high regional conservation significance in the north west of Aurora.

Edgars Road, O'Herns Road and Harvest Home Road within and adjacent to Aurora are intended to be divided arterial streets in their ultimate configuration, which is in accordance with the ENSP. Section 5.6 provides further detail on the design of these streets.

The arterial and neighbourhood connector street network of Aurora is spaced generally between 600 and 900 metres. While it does not match the network of concentric

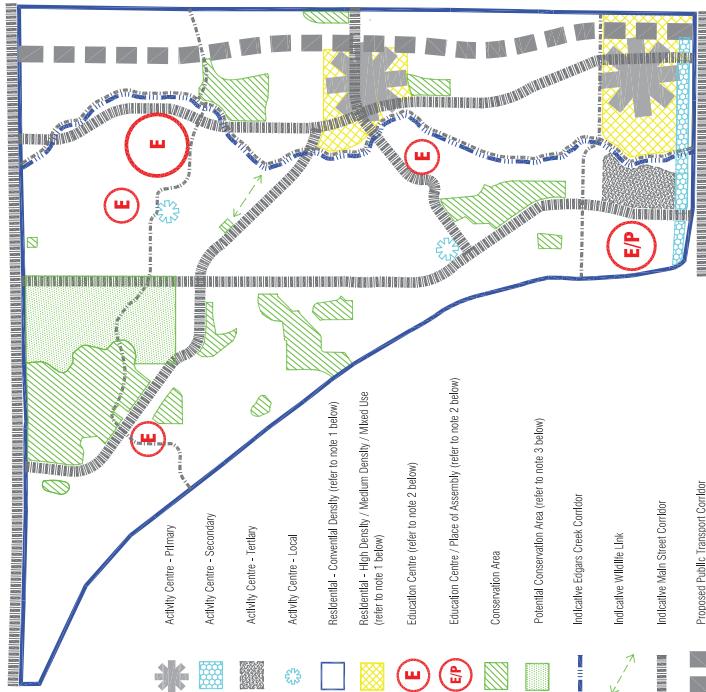
(b) Aurora Comprehensive Development Plan

The purpose of the Comprehensive Development Zone includes "to provide for a range of uses and the development of land in accordance with a comprehensive development plan incorporated in this scheme" (Clause 37.02).

As required under the Comprehensive Development Zone, the key features of the Aurora Comprehensive Development Plan (ACDP) are as follows.

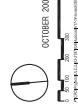
- Two activity centres - primary at planned transport nodes in the north and south of Aurora.
- An activity centre - secondary along the south boundary (O'Hans Road) of Aurora.
- An activity centre - tertiary in the south west corner of Aurora.
- One activity centre - local to the north of the northern primary activity centre and one to the south west.
- Three possible education centres in the north of Aurora and one possible centre in the south.
- Conservation areas spread throughout Aurora.
- Indicative main street corridors consisting of predominantly north-south and east-west streets.
- A north-south indicative public transport corridor close to the east boundary of Aurora.

As outlined above ADP2 is consistent with the ACDP incorporating all of the key features.



NOTES:

1. Predominantly residential but may include other developments and uses in accordance with the relevant comprehensive development zone schedule.
2. Preferred densities are shown but alternative densities are not prohibited, the particular location and corresponding boundaries of the density areas may vary with final decisions on matters such as a public transport node and the location of stops, the exact content and size of the retail component of activity centres and other broader considerations.
3. May include alternatively, other developments and uses in accordance with the relevant comprehensive development zone schedule.
4. Potential conservation areas - actual extent of area to be conserved will be determined by further ecological studies. Destination of land as potential conservation does not preclude residential use and development where appropriate.



**AURORA
COMPREHENSIVE
DEVELOPMENT PLAN**
(Applies to land zoned CD2a in the Whittlesea Planning Scheme.)

Aurora Comprehensive Development Plan

2.1.6 Zoning and Overlays	<ul style="list-style-type: none"> • to serve the needs of existing and future residents of the area. • To provide a safe, efficient, highly permeable, multi-modal and attractive movement network. • To ensure that non-residential uses do not cause loss of amenity to people in areas set aside and used for dwellings*. 	<p>The Scheme includes the subject land in Schedule 4 to the Comprehensive Development Zone (CDZ4).</p> <p>The purpose of CDZ4 is as follows.</p> <ul style="list-style-type: none"> • "To designate land suitable for urban development. • To provide for development of land generally in accordance with the relevant comprehensive development plan. • To pursue a sustainable form of greenfield development based on traditional neighbourhood design principles. • To engender a positive sense of place through incorporation of diverse landscapes and good urban design in the public realm. • To implement a high standard of contemporary architectural and urban design outcomes. • To encourage a reduction in the use of natural resources such as potable water through the provision and utilisation of recycled water provided to future residents of the area to achieve the sustainability objectives identified in the Aurora Sustainability Covenant. • To protect, retain and enhance the natural and cultural features of the land. • To facilitate a mix of land uses, including residential, community, retail, commercial and recreational, to support a sustainable community. • To facilitate a range of lot sizes with generally increased development densities and dwelling types to meet a diversity of lifestyle choices and to provide the opportunity for high quality and sustainable public transport. • To assist in the protecting and enhancing the Edgars Creek (as part of the larger Merri Creek Catchment) as an environmental conservation and recreation asset of local significance, through sensitive design and landscaping. • To provide for a range of pedestrian scale retail, commercial and community facilities of appropriate sizes 	<ul style="list-style-type: none"> • "To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies. • To identify areas which require the form and conditions of future use and development to be shown on a development plan before a permit can be granted to use or develop the land. • To exempt an application from notice and review if it is generally in accordance with a development plan" (Clause 43(4)).
(a) Comprehensive Development Zone	<p>The Scheme includes the subject land in Schedule 4 to the Comprehensive Development Zone (CDZ4).</p> <p>The purpose of CDZ4 is as follows.</p> <ul style="list-style-type: none"> • "To designate land suitable for urban development. • To provide for development of land generally in accordance with the relevant comprehensive development plan. • To pursue a sustainable form of greenfield development based on traditional neighbourhood design principles. • To engender a positive sense of place through incorporation of diverse landscapes and good urban design in the public realm. • To implement a high standard of contemporary architectural and urban design outcomes. • To encourage a reduction in the use of natural resources such as potable water through the provision and utilisation of recycled water provided to future residents of the area to achieve the sustainability objectives identified in the Aurora Sustainability Covenant. • To protect, retain and enhance the natural and cultural features of the land. • To facilitate a mix of land uses, including residential, community, retail, commercial and recreational, to support a sustainable community. • To facilitate a range of lot sizes with generally increased development densities and dwelling types to meet a diversity of lifestyle choices and to provide the opportunity for high quality and sustainable public transport. • To assist in the protecting and enhancing the Edgars Creek (as part of the larger Merri Creek Catchment) as an environmental conservation and recreation asset of local significance, through sensitive design and landscaping. • To provide for a range of pedestrian scale retail, commercial and community facilities of appropriate sizes 	<p>A planning permit is required generally to remove, destroy or lop native vegetation in VPO2. A planning permit is not required to remove, destroy or lop vegetation that is not native vegetation.</p> <p>The preparation of ADP2 involved a flora and fauna assessment of the subject land that considered all of the matters specified in VPO2 (refer Sections 2.2.3, 2.2.4 and 2.2.5). The response of Aurora, which is outlined in Section 5.3, is consistent with the vegetation protection objectives of VPO2.</p>	<ul style="list-style-type: none"> • "To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies. • To identify areas which require the form and conditions of future use and development to be shown on a development plan before a permit can be granted to use or develop the land. • To exempt an application from notice and review if it is generally in accordance with a development plan" (Clause 43(4)).
(c) Design and Development Overlay	<p>The Scheme includes the subject land in Schedule 2 (Significant Vegetation - River Redgum Grassy Woodland) to the Vegetation Protection Overlay (VPO2).</p> <p>The vegetation protection objectives to be achieved in VPO2 are as follows.</p> <ul style="list-style-type: none"> • "To protect and enhance the diversity of vegetation types and communities within Epping North" • "To maintain and enhance the ecological integrity of indigenous vegetation within Epping North during its transition from rural to urban" • "To allow for faunal movement through the area by the maintenance and enhancement of habitat links" • "To protect the ongoing viability of vegetation communities by allowing for regeneration" • "To preserve and maintain significant vegetation and the character of the area" 	<p>The DPO requires that a DP be prepared generally to the satisfaction of the responsible authority before a planning permit is granted to use or subdivide land, construct a building or construct or carry out works (Clause 43(4)-1). Once the DP has been prepared to the satisfaction of the responsible authority, any planning permit application that is generally in accordance with the DP is exempt from notice requirements, decision requirements and review rights (Clause 43(4)-2). Any permit granted must also be generally in accordance with the DP (Clause 43(4)-1). The DP may be amended to the satisfaction of the responsible authority (Clause 43(4)-3).</p>	<p>ADP2 is the DP required by DPO23. Sections 2 to 7 address the required elements of DPO23.</p>
(b) Vegetation Protection Overlay	<p>The Scheme includes the subject land in Schedule 2 (Significant Vegetation - River Redgum Grassy Woodland) to the Vegetation Protection Overlay (VPO2).</p> <p>The vegetation protection objectives to be achieved in VPO2 are as follows.</p> <ul style="list-style-type: none"> • "To protect and enhance the diversity of vegetation types and communities within Epping North" • "To maintain and enhance the ecological integrity of indigenous vegetation within Epping North during its transition from rural to urban" • "To allow for faunal movement through the area by the maintenance and enhancement of habitat links" • "To protect the ongoing viability of vegetation communities by allowing for regeneration" • "To preserve and maintain significant vegetation and the character of the area" 	<p>Preserve natural habitat for flora and fauna".</p>	<p>"To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.</p>
(d) Development Plan Overlay	<p>The Scheme includes the subject land in Schedule 23 (Aurora Development Plan) to the Development Plan Overlay (DPO23).</p>	<p>The purpose of the DPO is as follows.</p>	<p>"To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.</p>
(e) Floodway Overlay	<p>The Scheme includes Edgars Creek, which traverses the subject land, in a Floodway Overlay (RFO).</p>	<p>The purpose of the RFO is as follows.</p>	<p>"To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.</p>



- To ensure that any development maintains the free passage and temporary storage of floodwater, minimises flood damage and is compatible with flood hazard, local drainage conditions and the minimisation of soil erosion, sedimentation and silting.

To reflect any declarations under Division 4 of Part 10 of the Water Act, 1989 if a declaration has been made.

To protect water quality and waterways as natural resources in accordance with the provisions of relevant State Environment Protection Policies, and particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Matters of Victoria).

A planning permit is required generally to construct a building or construct or carry out works (Clause 44.03-1) and to subdivide and (Clause 44.03-2) in a RFO. A planning permit application is required generally to be referred to the relevant floodplain management authority (Clause 44.03-4).

(f) Road Closure Overlay

The Scheme includes part of Vearings Road on the subject land in a Road Closure Overlay (Rxo).

The purpose of the Rxo is as follows.

- "To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies,
- "To identify a road that is closed by an amendment to this planning scheme" (Clause 45.04).

The Rxo states that a road included in the Rxo is closed on the date that the notice of approval of the amendment is published in the Government Gazette (Clause 45.04-1).

2.2 NATURAL ENVIRONMENT

2.2.1 Topography, Soils and Drainage

The parent geology is basalt, which produces soils that are high in clay content, fertile and often seasonally waterlogged in flat, low lying situations. Although variable across the subject land, there is a high presence of surface rock as well as indications of shallow sub-surface rock.

Aurora is located in the upper reaches of the catchment of Edgars Creek which runs north-south through the centre of the subject land. Edgars Creek is part of the larger Merri Creek Catchment. Merri Creek is approximately 2 kilometres to the west of the Craigieburn Bypass.

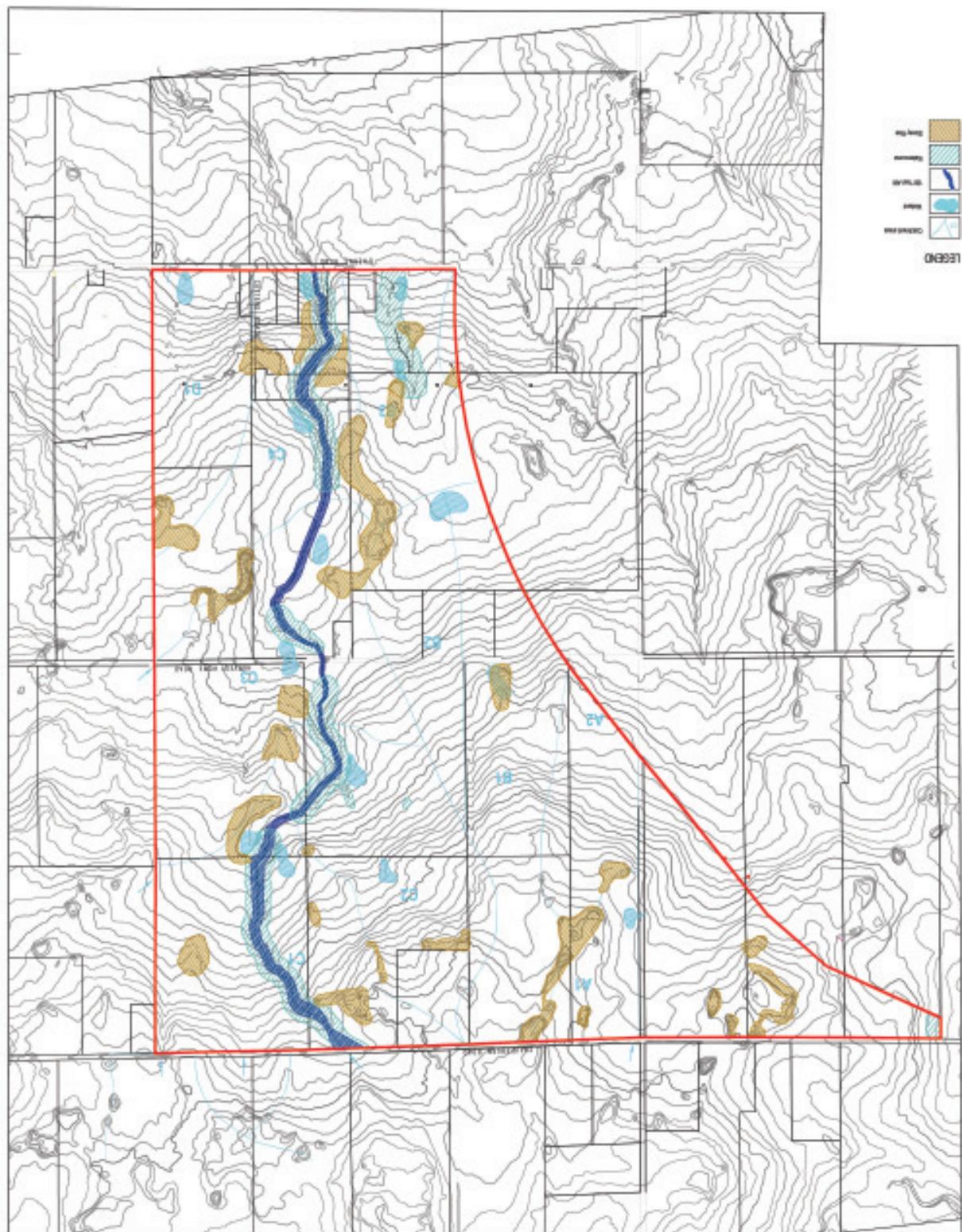
The form and intermittent flow rates of Edgars Creek are typical of the watercourses that run through much of the western volcanic plains. Within Aurora, Edgars Creek is an ephemeral waterway with highly intermittent flow levels resulting from the relatively low rainfall levels of the district, the location of the subject land at the top of the limited catchment of Edgars Creek and the mostly gentle slope characteristics of the subject land and surrounds. It is only slightly incised into the landform for most of its length within the subject land and therefore, only a few locations exhibit a strong creek form.

Throughout most of the year, Edgars Creek is a dry, shallow and ill-defined creek bed with occasional ephemeral pools. Several small and ill-defined tributaries of Edgars Creek are also found in the western portion of the subject land. Portions of Edgars Creek have been channelled and redirected, such as a section south of Harvest Home Road where the Creek bed has been channelled into a straight line through very flat land. There are also a number of small dams located on the subject land.

Generally, the drainage of the subject land is not highly concentrated into depressions or gullies and consists mostly of 'sheet flow' to the south.



Topography, Soils and Drainage





2.2.2 Landscape and Visual Character

The majority of Aurora has been cleared and grazed. There are a number of prominent stands and individual specimens of River Red-gums (*Eucalyptus camaldulensis*) and other indigenous tree species, especially in the north west of the subject land. Many of the remnant River Red-gums are hundreds of years old and contribute to the sense of place and local character. The recent years of drought however, have caused deterioration in the condition of the trees.

The stony rises are important visual elements that also contribute to a sense of place. The stony rises are considered to be the source material for many of the dry stone walls and stone buildings of the district. Apart from their visual features and importance as flora and fauna habitat, some of these stony rises contain sites of Aboriginal importance.

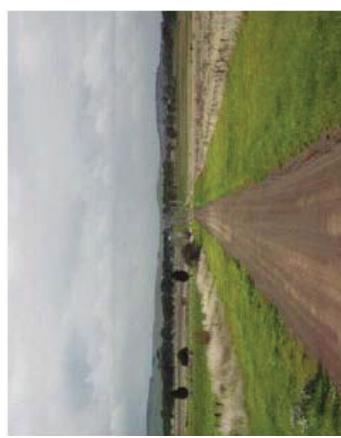
The open character of the subject land provides the following long distance views from the higher areas:

- Plenty Ranges to the north.
- Quarry Hills to the east.
- Dandenong Ranges to the south east.
- The skyline of the central activities district to the south.
- Macedon Ranges to the west.

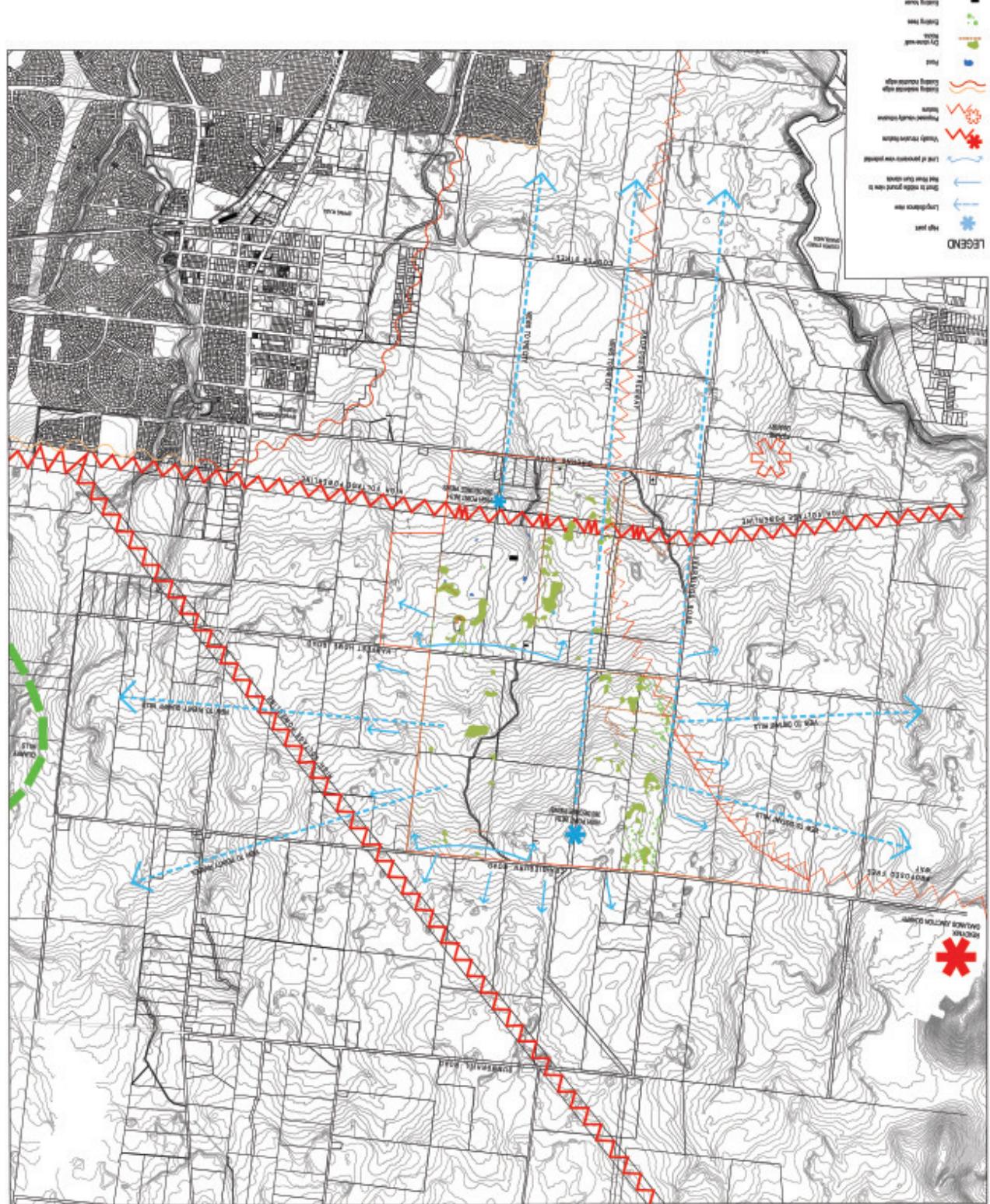
The views to the skyline of the Melbourne central activities district are particularly attractive, with the rural foreground providing somewhat of a screen to the industrial land to the south. Many of the above long distance views will be limited once development of the subject land occurs. Conservation areas, Edgars Creek and the street alignments will then provide important opportunities for distant views.

A number of complexes, incorporating a variety of farm buildings, dry stone walls and pockets of exotic vegetation, contribute to the historic character of the subject land and can provide strong visual elements in the landscape. Stands of pines, peppercorns and other large exotic trees create visual highlights around the existing and former farm complexes.

Powerlines extend east-west through the southern portion of the subject land. While the towers and cables are visually dominant at closer range, they are less obtrusive when viewed from the north as the foreground to the distant views to the skyline of the Melbourne central activities district.



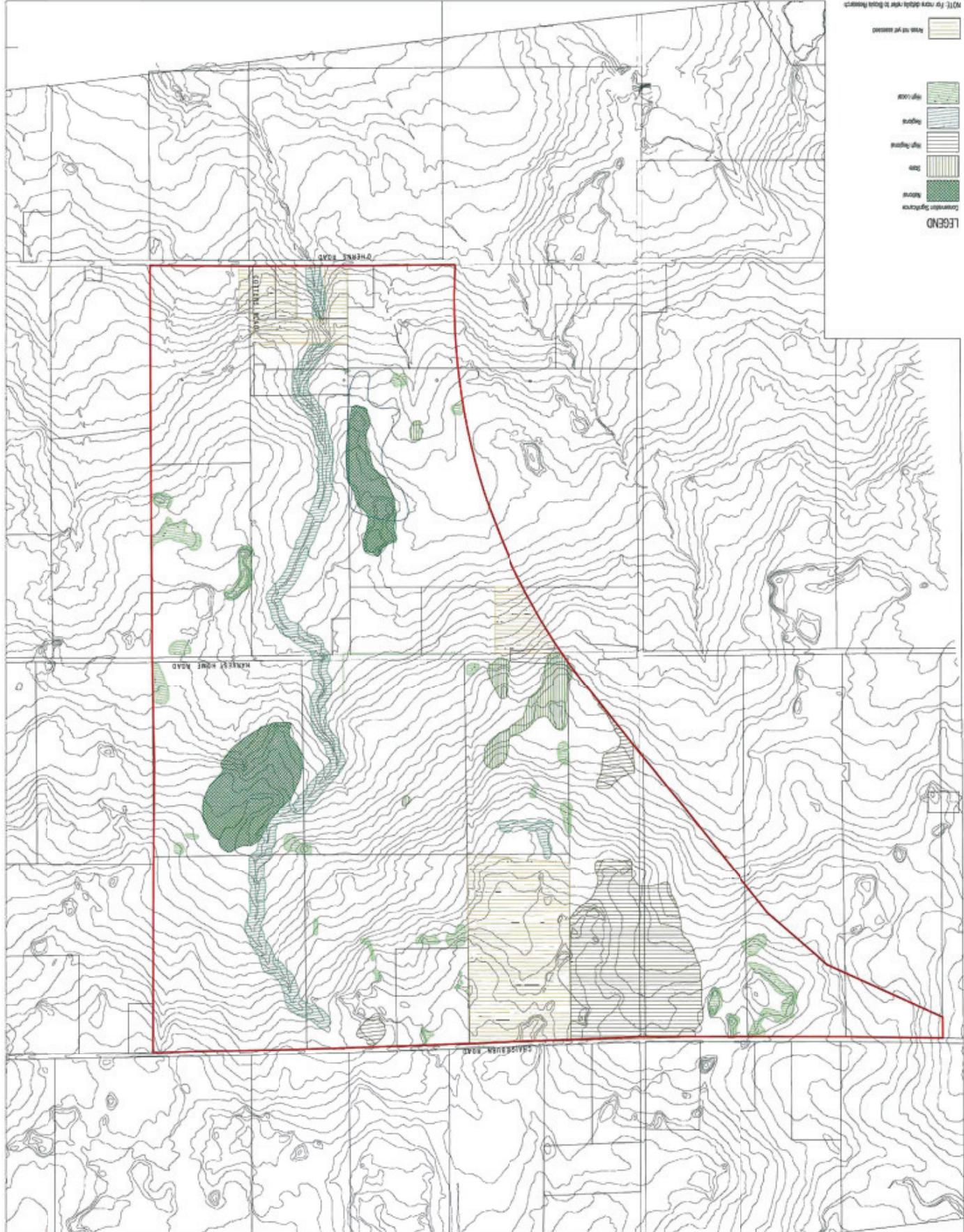
Landscape and Visual Character



2.2.3	Flora	2.2.4	Fauna
(a) Vegetation Communities (Ecological Vegetation Classes)	<p>The majority of the subject land supports exotic grassland, most of which is used for grazing. Remnants of five native Ecological Vegetation Classes (EVC) are present on the subject land - Plains Grassland, Plains Grassland, Stony Knoll Shrubland, Stony Knoll Grassland and Grey Clay Drainage-line Herbland / Sedgeland Complex. These EVC are distributed within the landscape according to the features of the subject land, such as soil depth, soil structure, soil moisture, drainage and presence of rock.</p>	<p>The Plains Grassland EVC on the subject land includes three sub-communities. While each sub-community contains some of the typical native species, exotic species are also found.</p> <p>The Stony Knoll Shrubland EVC and Stony Knoll Grassland EVC occupy the more pronounced stony rises and occur in a mosaic with the Plains Grassly Woodland EVC and Plains Grassland EVC. The stony rises are degraded to a varying extent by weed invasion, rock removal and grazing. The stony rises however, do support the greatest diversity of native species recorded during the survey, including most of the significant species.</p>	<p>Fauna habitat types vary in size and quality throughout Aurora. The following main fauna habitat types are present on the subject land and have the specified habitat quality based on their importance for terrestrial vertebrate and aquatic fauna.</p> <ul style="list-style-type: none"> • River Red-gum woodland: medium to high quality. • Stony rises: low to high quality. • Waterways (Edgars Creek and unnamed tributaries): low to medium quality. • Wetlands (artificial): low-medium to high quality. • Agricultural grasslands (predominantly non-rocky): low quality. • Non-natural rock structures: low to medium quality. • Planted vegetation: low quality. • Other man-made structures: low quality. <p>Wildlife Corridors</p> <ul style="list-style-type: none"> • Edgars Creek and its tributaries are likely to have supported the Grey Clay Drainage-line Herbland / Shrubland Complex EVC. The vegetation is now highly altered and mainly exotic due to grazing and trampling by stock. Less disturbed and stony sections of Edgars Creek retain small populations of native species. <p>The vegetation quality of the subject land has been assessed and the resultant habitat score represents vegetation that retains between 13 and 42 per cent of its original habitat quality.</p> <p>Vegetation condition</p> <p>The vegetation structure in all EVC present on the subject land is altered significantly from its presumed original state due to disturbance factors such as grazing, clearing of trees and shrubs, weed invasion and removal of surface rock.</p> <p>The Plains Grassly Woodland EVC is represented mainly by overstorey remnants on the flattest portions of the subject land. These are predominantly River Red-gums over largely exotic understorey with</p>
(b) Flora Species	<p>Biosis Research Pty Ltd between October 2000 and January 2006 completed a flora survey of Aurora and a list of species was compiled. A total of 257 vascular plant species was recorded including 131 (51 per cent) indigenous species.</p> <p>One species of national significance (Matted Flax-lily, <i>Dianella amoena</i>), four species of state significance and 56 species of regional significance (within the Victorian Volcanic Plains Bioregion) were recorded at Aurora. The remaining native species that occur on the subject land are of local significance.</p>	<p>Biosis Research Pty Ltd between October 2000 and January 2006 completed a fauna survey of Aurora and a list of species was compiled. A total of 81 terrestrial vertebrate fauna species was recorded on the subject land. These include 66 indigenous species (three mammals,</p>	<p>Fauna Habitat Types</p> <ul style="list-style-type: none"> • Fauna habitat types listed as 'migratory' under the Environment Protection and Biodiversity Conservation (EPBC) Act 1999 were recorded during the survey, including two species that were breeding on the subject land. <p>Wildlife Corridors</p> <ul style="list-style-type: none"> • Dy stone walls. • Edgars Creek and unnamed tributaries. • Agricultural grasslands. <p>Fauna Species</p> <ul style="list-style-type: none"> • Agricultural grasslands (predominantly non-rocky): low quality. • Non-natural rock structures: low to medium quality. • Planted vegetation: low quality. • Other man-made structures: low quality.
(c) Vegetation condition	<p>The vegetation structure in all EVC present on the subject land is altered significantly from its presumed original state due to disturbance factors such as grazing, clearing of trees and shrubs, weed invasion and removal of surface rock.</p> <p>The Plains Grassly Woodland EVC is represented mainly by overstorey remnants on the flattest portions of the subject land. These are predominantly River Red-gums over largely exotic understorey with</p>	<p>Vegetation condition</p> <p>The vegetation structure in all EVC present on the subject land is altered significantly from its presumed original state due to disturbance factors such as grazing, clearing of trees and shrubs, weed invasion and removal of surface rock.</p> <p>The Plains Grassly Woodland EVC is represented mainly by overstorey remnants on the flattest portions of the subject land. These are predominantly River Red-gums over largely exotic understorey with</p>	<p>Biosis Research Pty Ltd between October 2000 and January 2006 completed a fauna survey of Aurora and a list of species was compiled. A total of 81 terrestrial vertebrate fauna species was recorded on the subject land. These include 66 indigenous species (three mammals,</p>

- 2.2.5 Conservation Significance**
- relatively large population of Matted Flax-lily, modified example of the Plains Grassland EVC;
 - least robust populations of Golden Sun Moth within Aurora.
- Two areas of high regional significance, containing the following attributes:
- high quality examples of the Stony Knoll Grassland EVC;
 - populations of Matted Flax-lily, Arching Flax-lily (*Dianella sp. aff. longifolia*) (state significance) and Pale-flower Geranium (*Geranium sp. 3*) (state significance); up to thirty plant species of regional significance;
 - suitable stony rise habitat for the Striped Legless Lizard and other ground-dwelling vertebrates of regional and local significance;
 - multiple old-growth trees with abundant hollows for roosting, nesting and other activities by hollow-dependent fauna;
 - habitat for a range of woodland-dependent fauna, including birds, reptiles and marsupials.
- Three areas of state significance comprising a farm dam, a Matted Flax-lily site and a Golden Sun Moth population, containing the following relevant attributes:
- one of the largest documented populations of the Growling Grass Frog (national significance) within the Merri Creek Corridor, which is likely to be a breeding population; likely to function as a source population for the Growling Grass Frog from which Edgars Creek and any associated waterbodies could be re-populated;
 - a spring-fed land therefore permanent wetland that may function as a drought refuge for the Growling Grass Frog;
 - little or no access by stock that allows abundant growth of aquatic vegetation;
- Biosis Research Pty Ltd between October 2000 and January 2006 completed an assessment of the conservation significance of the flora and fauna at Aurora. Due to the substantial modification of the original vegetation and habitats, much of the subject land has very low conservation significance. Areas of conservation significance at Aurora are listed below and the map following shows their location.
- Two areas of national significance, containing the following attributes:
 - populations of Golden Sun Moth (national significance), Matted Flax-lily (national significance) and Tough Scurf-pea (*Cullen tenax*) (state significance); relatively large and high quality examples of the Plains Grassland EVC (endangered) and the Stony Knoll Grassland EVC (endangered); suitable (but not ideal) stony rise habitat for Striped Legless Lizard (*Delma impar*) (national significance) and other ground-dwelling vertebrates of regional and local significance.
 - Three areas of state significance containing the following attributes:
 - three types of areas of regional significance, including: stony rises and associated grassland that provide remnants of the Stony Knoll Shrubland EVC in poor condition and modified habitat for some ground-dwelling fauna, particularly reptiles; dry stone walls that contain abundant loose surface rock providing protection, breeding and foraging for a range of ground-dwelling vertebrates and potentially a wildlife corridor between stony rises by small ground-dwelling vertebrates;
 - a stand of young River Red-gums on Harvest Home Road that provides woodland habitat for some woodland-dependent fauna and has the potential for higher conservation value if the trees reach maturity.
 - All other remnant indigenous vegetation and habitat features have at least local conservation significance. Other areas dominated by non-indigenous plant species (for example, agricultural grasslands) have little or no value for flora however, they may be used by fauna species for movements between better quality habitat areas and for foraging activities by other species such as birds of prey.
- Herbland / Sedgeland Complex EVC, is

Conservation Significance



2.3 CULTURAL HERITAGE		SITE NAME	SITE TYPE	SIGNIFICANCE
2.3.1	Aboriginal History	Doherty 1 (AAV7822 - 1854)	Scarred tree	3 (moderate)
	Biosis Research Pty Ltd completed a field survey and subsurface archaeological testing program in consultation with the Wurundjeri Tribe Land Compensation and Cultural Heritage Council Incorporated. These investigations have demonstrated that Aboriginal archaeological sites survive on several stony rises and along water courses in Aurora.	Luppino 1 (AAV 7822-0772)	Surface artefact scatter	6 (moderate)
		Mandie 1 (AAV 7822-0684)	Isolated artefact	3 (low)
		Mandie 2 (AAV 7822-0685)	Surface artefact scatter and buried material	6 (moderate)
		Jenkins 2 (AAV 7822-1267)	Isolated artefact	5 (moderate)
		Scuffidi 1 (AAV 7822-0773)	Surface artefact scatter	6 (moderate)
		Shine 1 (AAV 7822-1411)	Surface artefact scatter	3 (low)
	The subject land lies within the boundary of the Kulin Aboriginal people, who identified themselves as members of "a regional block or confederacy - maintained by intermarriage, a common language and mutual interests" (Barwick, D.E. (1994) Mapping the Past: An Atlas of Victorian Clans 1835 - 1904; Aboriginal History, Vol 18 No 1 - 2, pp. 100 - 131). The lands of the Kulin people cover much of present day western and central Victoria.	Cecomancini 1 (AAV 7822-0639)	Surface artefact scatter and buried material	5 (moderate)
	Within the Kulin Nation, groups identify themselves by a language name and typically share a common dialect or manner of speaking, as well as economic and political affiliations. The subject land is located in the territory of the Woi wurrung who were composed of a number of clans that spoke the same language. Their territory extended from Kyneton to West Gippsland and the Werribee River and Bacchus Marsh to Mount Baw Baw. The language group occupied most of present metropolitan Melbourne, except for the southern suburbs and areas around Port Phillip Bay.	Cecomancini 2 (AAV 7822-0687)	Surface artefact scatter and buried material	7 (high)
		Konas 1 (AAV 7822-1265)	Surface artefact scatter and buried material	6 (moderate)
		Konas 2 (AAV 7822-0688)	Isolated artefact	3 (low)
		Cotters Road 1 (AAV 7822-0686)	Surface artefact scatter	6 (moderate)
		Cotters Road 2 (AAV 7822-1757)	Isolated artefact	3 (low)

2.3.2 European History

Epping became one of the prime dairy farming districts in Victoria.

Biosis Research Pty Ltd has completed a field survey of all features of historical interest. Part of only one historical site - a dry stone wall (H7822-0239) - on the subject land is listed on the Victorian Heritage Inventory. The historical sites below have been identified on the subject land and are shown on the following map.

European occupation of Epping North came after Batman's Treaty (1835) with the local Aboriginal people ceded 600,000 acres, including Whittlesea, to the Port Phillip Association. The Wollert Pastoral Run extended over Aurora and was first leased by John Pike. Charles Caldwell Campbell held the run between 1840 and 1850. The early squatters and landowners were constantly under threat of government displacement and the risk of losing capital discouraged them from developing their properties. These risks, coupled with the effects of the 1851 bushfires, means that traces of early settlement are extremely rare.

The subject land remained pastoral until it was surveyed into modest farms in the mid 1840s. Many properties went to auction on 27 January 1853 and those who purchased were of English, Irish, Scottish or German descent. At this time the village reserve was surveyed and the name Epping arose. After the land sales in the 1850s, there was increasing pressure for small scale farming and most properties were purchased by absentee landlords who leased them to tenant farmers for dairy farming and cultivation. The relative fertility of the basalt day soils made the region a significant agricultural producer.

Increasing settlement encouraged the development of roads and village-like settlements at key points along transport routes, which set the pattern of small farms that is still typical of the region today. Occupants began to use the reserves of bluestone in the region when rebuilding their farms after the 1851 bushfires.

With the discovery of gold (1851 - 1888) to the north, the population within the region rose sharply. Although the region was not mined, it became an important food producer and supplier to the goldfields.

The period that followed the Gold Rush and land boom was known as the 1890s depression (1888 - 1901). A minor boom followed this depression and was associated with the opening of the rail link between Melbourne and Heideberg. The rail links also allowed the expansion of dairying to supply Melbourne and from the 1890s to World War Two.

In addition to the above sites, basalt dry stone walls are located throughout the subject land. The main reasons for building walls were to provide property boundaries and to facilitate stock management, particularly after shepherds left for the gold fields and stock needed to be divided. Another reason was to clear the paddocks of rubble to improve pasture and mobility. Dry stone walling was used extensively in England, Ireland, Scotland and Germany, from where many of the early settlers originated. In the Epping region walls were usually made of freestone and cut stone was not introduced. As the farms were relatively small, dry stone walls were used extensively.

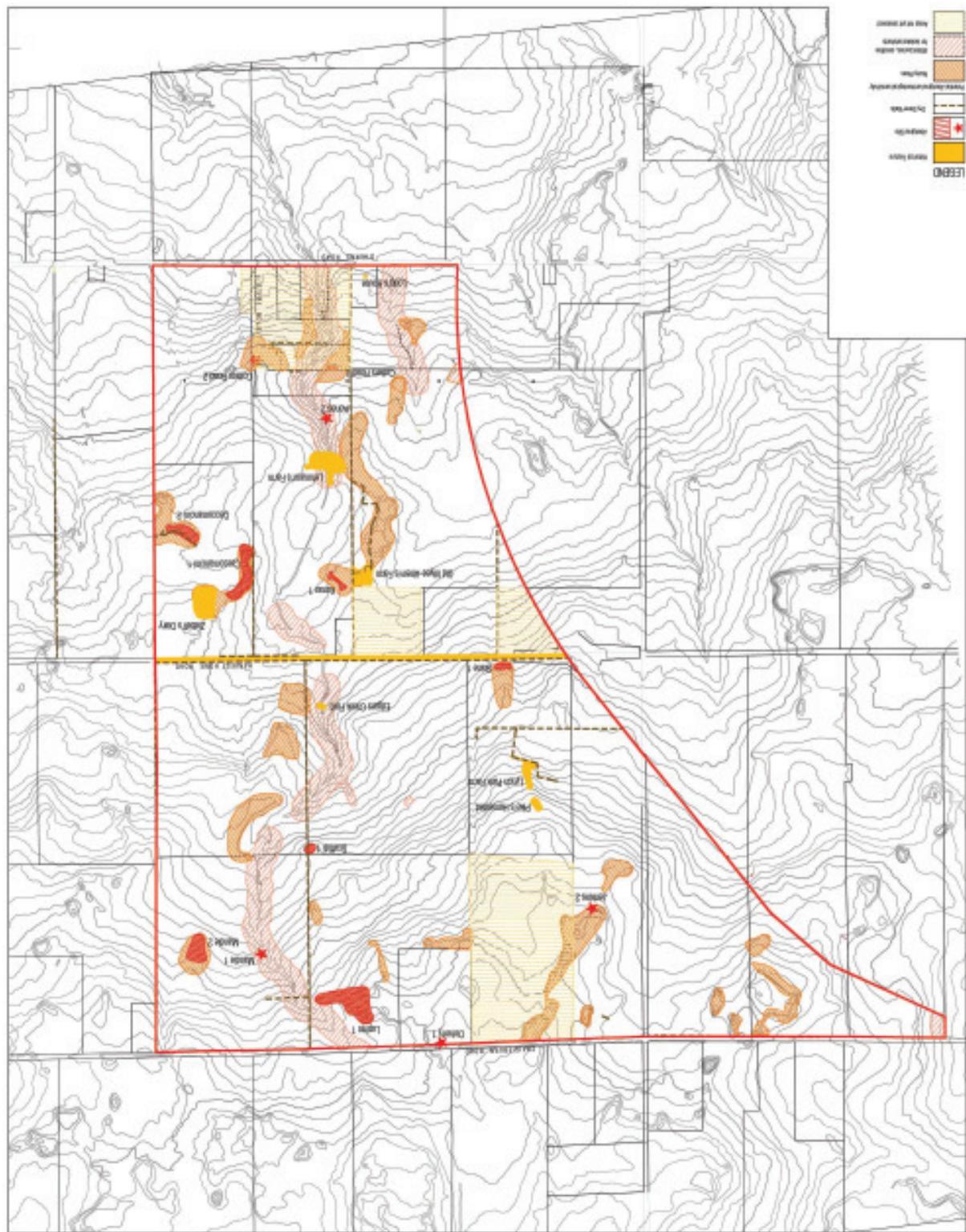
Along the remaining dry stone walls there are a number of associated stone features, such as animal enclosures, yards and pens. The dry stone walls at Aurora illustrate a pattern of small scale farming that developed in Epping in the 1850s and is still evident today. In general, the dry stone walls located on the subject land are of medium heritage significance.

In most parts of Aurora there is evidence of very small scale quarrying. This evidence is in the form of numerous depressions where *in situ* basalt floes appear to have been removed, broken surfaces, rock drill marks and remaining stones. These features are too numerous to record.

Small quarry holes are a feature of most of the stony rises on the subject land. They are most common on the larger stony rises closest to the sites of former bluestone buildings (for example, 200 metres east of Old Myee-Ahern's farm and 100 metres west of Lehmann's farm). These quarries are clearly the sources of building stone for the homesteads and barns of the earliest farm complexes in the 1850s and 1860s.

SITE NAME	SITE TYPE	YEAR OF CONSTRUCTION (approximately)	HERITAGE SIGNIFICANCE
Pike's homestead (H7822-0375)	Stone foundations, artefact scatter	1850s	High
Lynch Park farm (H7822-0374)	Building foundations, brick and rubble scatter	1940s or earlier	Low
Edgars Creek ford (H7822-0275)	Basalt cobbled ford	1880 - 1930s or earlier	Low
Ziebell's dairy (H7822-0260)	Bluestone dairy remnants, homestead debris	1901	High
Old Myee-Ahern's farm (H7822-0377)	Homestead complex	1860s	High
Lehmann's farm (H7822-0376)	Homestead ruins, building material scatters	1860s	Medium
Long's house	House and garden	1915	Medium

Aboriginal, Archaeological and Historical Sites



3 ASSESSMENT OF SERVICES AND FACILITIES NEEDS

3.1 LAND BUDGET

The land budget for Aurora is described in the table below. It is acknowledged that the outcomes associated with preparation of flora, fauna and habitat hectare assessments may reduce the assumed development potential of the land holdings not surveyed for flora and fauna values.

	Land area (ha)
A - Division Area (All land holdings)	592.37
B - Encumbered Land	114.31
Power Easement* (includes 2.76ha retarding basins)	13.81
Gas Easement* (land within POS)	1.64
Edgars Creek* (includes 1.91ha retarding basins)	21.58
Retarding Basins	1.11
Conservation Areas	57.43
Gas Easement (remainder not in POS)	5.96
Land for Arterial Road Widenings not required for ADP2 (All)	3.47
Transit Corridor	9.31
Gross Developable Area	478.06
C - Unencumbered Open Space	50.31
POS Passive/Unstructured Rec	31.17
POS Active/Structured Rec	19.14
Net Developable Area	427.75
D - Community Facilities	21.05
Educational Facilities	20.65
Library	0.40
E - Community Activity Centres	1.60
Gross Residential/Commercial Area	405.10
F - Approximate Number of Dwellings	7292
G - Approximate Projected Total Population	21,889

3.2 POPULATION

development that provides convenient and attractive walking / cycling distances to meet basic needs will reduce the costs associated with transport and hopefully household stress.

There will be a sustained growth in demand for dwellings to meet the needs of a wide variety of family and individual living arrangements. VicUrban recognises that the downward trend in household size does not always translate into a demand for smaller dwellings. For example, a non-custodial parent may form a one person household for the majority of the time but require additional bedrooms to accommodate children who visit regularly. Likewise, older adults are likely to prefer additional bedrooms to accommodate for example, alternative uses, visiting grandchildren or to provide for the contingency of a future live-in carer (permanent or respite).

Greater dwelling choice, including smaller dwellings, also creates the opportunity for existing family and social networks to remain intact by encouraging the families and friends of the traditional occupiers of new developments - young couples and families - to join them. This contributes to the social and cultural diversity aspects of sustainability.

3.3 HOUSING

3.4 SOCIAL INFRASTRUCTURE

- VicUrban anticipates that a significant proportion of the population of the subject land will be drawn from the primary catchment areas of Preston, Fawkner, Reservoir, Burdoora, South Morang, Epping, Lalor, Mill Park and Thomastown and has used the demographic trends in these areas as a partial indicator of the future demographic profile of Aurora. The sustainability features and range of dwelling types proposed in Aurora however are also expected to attract people from outside the primary catchment area. This group will represent a wider cross section of the new housing market and provide a more balanced mix of households than has been the case typically in the outer suburbs.
- The approach of VicUrban to determining what social infrastructure will be required for Aurora and where it will be located has been guided by the following key influences and objectives.
 - Whittsea key strategic and policy documents including the Housing Strategy, Community Activity Centres Review and Quantitative Assessment of Social, Leisure and Open Space Infrastructure Requirements within the Epping North Strategy Plan Area (the ASR report).
 - The Aurora Visioning Workshop in December 2004.
 - The Aurora Context Study prepared by The Hornery Institute.
- The proportion of households living under some degree of housing stress continues to grow, with those households living in outer suburbs particularly subject to such stress. While dwelling prices in the outer suburbs are more affordable than those in the inner suburbs, the accessibility to services and facilities is generally restricted. The cost of transport, in particular running one or more vehicles, to meet basic needs such as work, education and obtaining food, precludes other uses for a portion of the household budget and contributes to stress. A

<ul style="list-style-type: none"> Maximising access to community, commercial and public transport services and facilities within walkable catchments. Consultation with key service providers including the Department of Education and Training (DET) and independent school providers. The post occupancy feedback from residents of other equivalent outer suburbs that highlights the social and economic costs to residents of not being offered a range of community, commercial and public transport facilities within feasible walking distance. These costs include social isolation, increased financial burden of additional vehicle ownership and lack of independent access for key groups within the community including youth, mothers at home with young children and older adults no longer able to drive a vehicle. The experience of community centres within VicUrban developments, such as at The Boardwalk, Roxburgh Park and Caimlea. 	<p>• a welcoming foyer space;</p> <ul style="list-style-type: none"> ◦ small meeting rooms; ◦ a large hall; ◦ sufficient office and administration space. <p>• Emphasis should be on community development, using the CAC as a vehicle for generating resident interaction and community activity.</p>	<p>• Whittlesea active and passive public open space should be:</p> <ul style="list-style-type: none"> ◦ high quality to facilitate heavy use for sport; ◦ accessible places for teen agers ◦ attractive settings for children's play opportunities. <p>• The public open space network has a key role in shaping the nature, character and identity of urban development.</p>	<p>• the confirmed location of an independent primary school in Section A of Aurora;</p> <p>• the DET requirement for any school to be a minimum of 400 metres from a power easement;</p> <p>extensive consultation with the education providers concerning specific site and access requirements such as site area requirements, the number of preferred street frontages, proximity to the principal walking and cycling network and linkages to open space networks, public transport, primary activity centres and complementary community facilities.</p>
<p>3.4.3 The ASR Report</p>	<p>In 2001, VicUrban and Whittlesea engaged the services of ASR Research Pty Ltd to prepare a preliminary quantitative assessment of the likely social, leisure and open space infrastructure requirements within the ENSP area, including Aurora and non-VicUrban land.</p>	<p>The ASR report was reviewed in 2004 in order to:</p> <ul style="list-style-type: none"> ◦ consider the implications of increased population in Epping North, excluding Aurora, from 15,000 to 25,000 people; ◦ consider the indicative costs of land required for community infrastructure; ◦ review a draft of ADP2. 	<p>3.4.4 The ASR Report Review</p> <p>The ASR report was reviewed in 2004 in order to:</p> <ul style="list-style-type: none"> ◦ consider the implications of increased population in Epping North, excluding Aurora, from 15,000 to 25,000 people; ◦ consider the indicative costs of land required for community infrastructure; ◦ review a draft of ADP2.
<p>3.4.5 Community Activity Centres Review</p>	<p>In February 2001, Whittlesea completed a review of its community activity centres (CAC). The purpose of the review was to assess the success of existing CAC and determine their future role and function in both new and established communities.</p> <p>With regard to the performance of the three multi purpose CAC in operation within the Municipality in 2000 - 2001, the key findings from the review were as follows.</p> <ul style="list-style-type: none"> • The three CAC were operating well in terms of being financially healthy and with strong committees of management. • Future CAC should have the following components / attributes: <ul style="list-style-type: none"> ◦ located in prominent and attractive neighbourhood settings; ◦ ample storage areas; ◦ consulting rooms for visiting services; 	<p>The ASR report identified the following key planning principles.</p> <ul style="list-style-type: none"> • Whittlesea community centres, where possible, should be: <ul style="list-style-type: none"> ◦ consolidated into larger multi-functional centres (CAC); ◦ equitably distributed throughout the growth area; ◦ located adjacent to other community facilities such as schools and active and passive public open spaces and in areas accessible by public transport and walking and cycling paths to create neighbourhood hubs. 	<p>3.4.6 Walking and Cycling Network</p> <p>A comprehensive walking and cycling network linking all of the facilities and services in the ENSP is required to facilitate accessibility and choice for residents. The network should be designed to promote walking and cycling as equally important and attractive modes of transport to the private car and should meet therefore the actual and perceived safety needs of all potential users.</p> <p>3.4.7 Community Development</p> <p>VicUrban recognises the requirement for a community development strategy (CDS) as an important complement to the provision of community services and facilities. The Aurora CDS will be prepared in conjunction with Whittlesea and other service organisations to maximise opportunities for the integration of Aurora with the surrounding community. The Aurora CDS should facilitate new residents meeting each other and slowly, over time, developing the new social support networks that are important to the general well-being of the community.</p> <p>Aside from the population increase, the ASR report review did not alter the other assumptions or underlying planning principles. The ASR report review did clarify the recommendations for Aurora and has been used for comparison with the community infrastructure package proposed by VicUrban.</p> <p>3.4.8 Education</p> <p>The provision of education centres at Aurora (including Section A), including three State government primary schools, one State government secondary school and two independent primary schools, is planned by the DET and independent school providers. It is understood that there may be ultimately some variation in the DET class components to suit the needs of the community.</p> <p>The location of these schools will be determined having regard to:</p> <ul style="list-style-type: none"> • the confirmed location of a DET primary school to the east of Section A of Aurora in the ENSP;

3.5 RETAIL AND COMMERCIAL

The projected Aurora trade area for retail and commercial facilities as defined by Urbis JHD Pty Ltd is bounded generally by Donnybrook Road to the north, Darebin Creek and the E6 alignment to the east, Childs Road and Cooper Street to the south and High Street and Merri Creek to the west. Urbis JHD Pty Ltd has further defined the projected Aurora trade area for retail facilities as comprising four sectors: primary (Aurora is contained within this sector), secondary north, secondary east and tertiary.

A variety of retail and commercial facilities will be required to serve the residents of Aurora as there are no existing retail facilities within the primary sector of the projected Aurora trade area. Strong competition exists however, on the fringes of the projected Aurora trade area, particularly from Epping Plaza, which is the only sub-regional centre in the trade area and is being expanded to around 51,600 square metres of retail floor area. Other potential competing centres include the Greenbrook Shopping Centre, Plenty Valley Town Centre, Lalor Shopping Centre, Campbellfield Knart Centre, Roxburgh Park Shopping Centre, Craigieburn Plaza and the proposed Craigieburn Town Centre.

Despite the advantages of anticipated strong population growth and good road access in the Aurora location, the quality of retailing, in terms of the physical fabric of the primary activity centres as well as the type of tenants in the centres, will need to be high for the centres to thrive against retail competition located just beyond the projected primary trade area.

- Urbis JHD Pty Ltd anticipates that the full development of Aurora will support the following hierarchy of retail and commercial facilities

- A northern primary activity (town) centre of approximately 6000 square metres of retail and non-retail floorspace. This centre is likely to include a supermarket and additional retail and non-retail specialities. It is anticipated that a population of approximately 8000 people in the primary sector will be sufficient to support 3500 square metres supermarket and 1000 square metres of speciality shops at the northern primary activity centre. A population

of approximately 10,600 people in the primary sector is expected to sustain the remaining 1500 square metres of retail and non-retail specialities.

A southern primary activity (town) centre of approximately 14,000 square metres of retail and non-retail floorspace. This centre is likely to include a discount department store, a full scale supermarket, a smaller format supermarket and additional retail and non-retail specialities. A population of approximately 21,000 people in the primary sector will support two supermarkets (3500 square metres and 1500 square metres) and 2500 square metres of specialty shops in the southern primary activity centre. When the primary sector is fully developed, the population is expected to sustain a 6000 square metres discount department store and the remaining 500 square metres of retail and non-retail specialities.

A secondary activity centre (commercial precinct) along the north side of O'Hens Road to the east and west of Edgars Creek. It is difficult to estimate the amount of commercial floorspace that the location and population level will support; however, a review of developments of this scale and type indicate that the size of the commercial floorspace component can vary significantly from 1500 to over 5000 square metres.

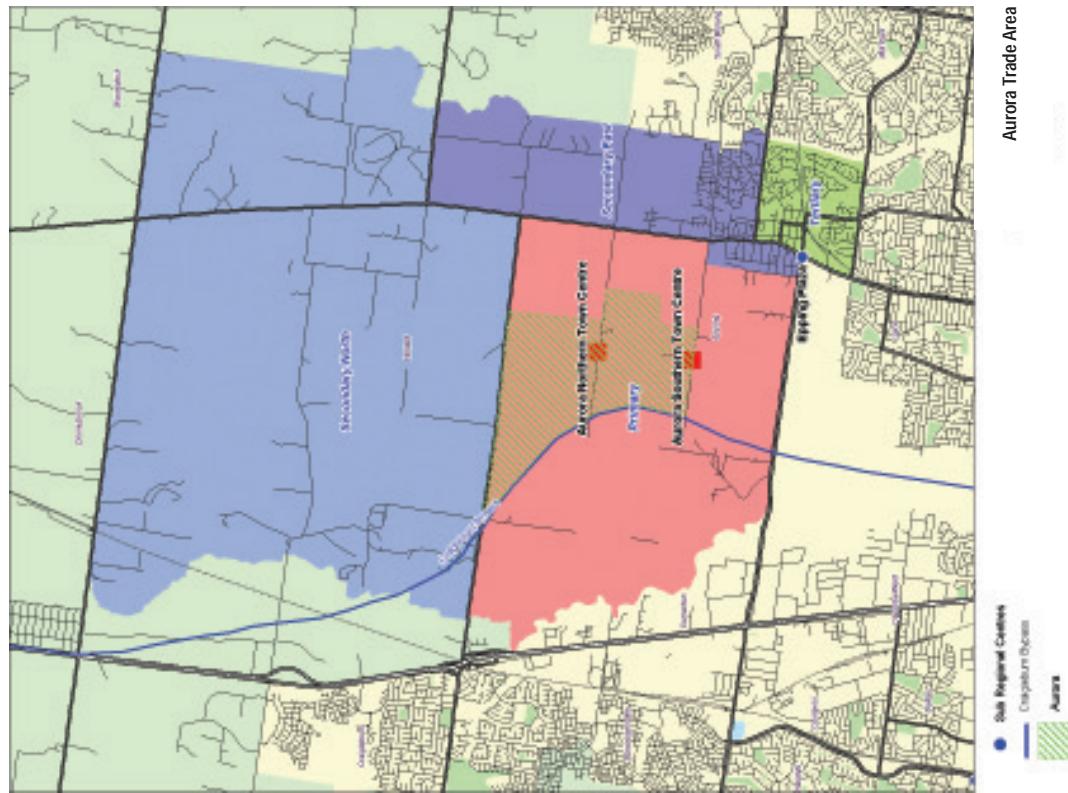
A tertiary activity centre (office park precinct) in the south west corner of Aurora. It is anticipated that this tertiary activity centre could be a suitable office location for technology-related businesses.

A number of local activity (small convenience) centres to provide for the convenience-based shopping needs of residents in the immediate vicinity. Once a population base begins to build around a local activity centre, it is anticipated that it will become viable.

Potentially a freeway service centre along the frontage of Aurora to the Craigieburn Bypass.

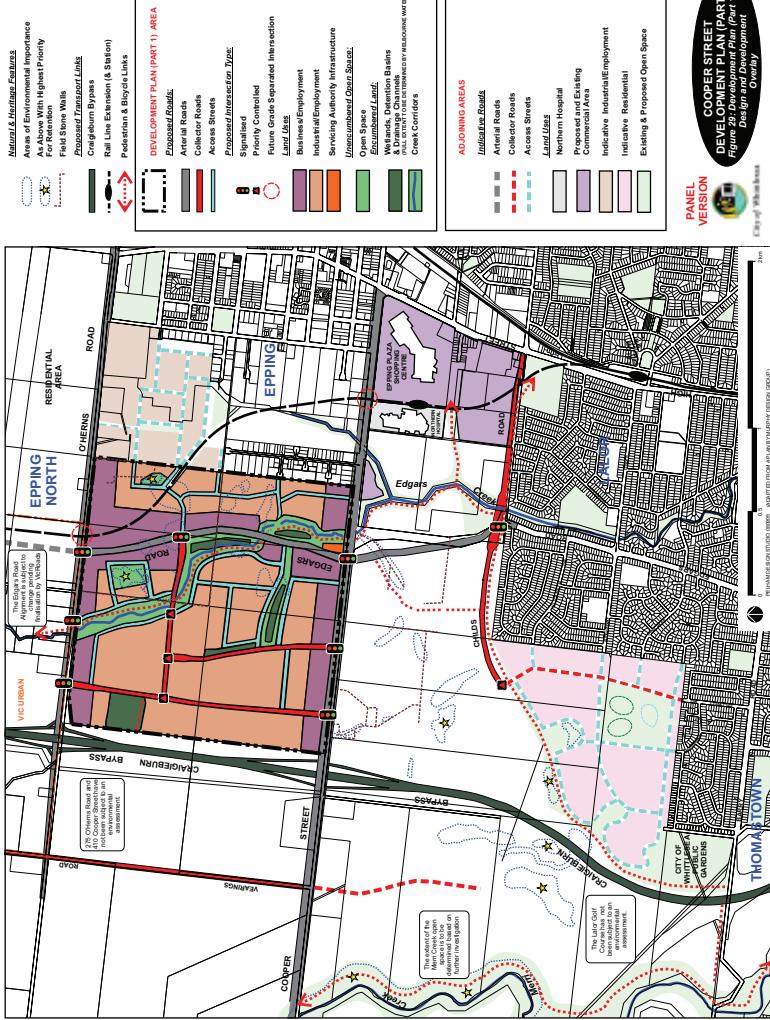
Although Urbis JHD Pty Ltd anticipates the above hierarchy and a combined floorspace of 20,000 square metres in the two primary activity centres, the ultimate scale and components of the primary activity centres are flexible as they may organically develop to be different sizes. For example, the northern primary activity centre

may develop with 8000 square metres of floorspace and the southern primary activity centre with 12,000 square metres.



3.6 TRANSPORTATION

3.6.2 Existing Planning Framework



3.6.1 Existing Road Network and Traffic Volumes

(a) Epping North Strategic Plan

Aurora is bounded by Craigieburn Road East to the north, O'Herns Road to the south and the Craigieburn Bypass to the west. Harvest Home Road, Veerings Road and a number of other minor roads extend in or through the subject land. Epping Road is approximately 16 kilometres east of the east boundary of the subject land. The above roads are generally of rural standard and have reservations of approximately 20 metres.

Craigieburn Road East and Epping Road each have a single, two-lane, two-way carriageway with reservations originally 20 metres wide but widened to 40 metres wide in some places. O'Herns Road is sealed to a width of approximately 6.5 metres between Epping Road and a point approximately 3 kilometres to the west. Harvest Home Road has a sealed pavement approximately 7 metres wide between Epping Road and the subject land approximately 1.6 kilometres to the west. Other sections of these roads and the minor roads within the subject land are unsealed.

The concentric rings of the road network combined with offset diagonal transport links have been designed to enhance physical access and visual connections between the neighbourhoods and public open spaces. The road network is anticipated to provide convenient and direct public transport access. The alignment and cross sections of the key transport routes will also provide the opportunity for the establishment of boulevard-style tree planting.

(b) Cooper Street Employment Area

The existing farming and rural residential uses of the subject land generate low volumes of traffic. There are more intensive land uses on nearby land, including the Epping Soccer Stadium and Epping RSL Club at the south west corner of Harvest Home Road and Epping Road. Uses on the south side of O'Herns Road such as the Casa D'Abruzzo Club, a dog pound and some rural / industrial uses near the south west corner of O'Herns Road and Epping Road, also contribute to existing traffic volumes on O'Herns Road.

It is estimated that the traffic volumes on the roads surrounding and through the subject land generally do not exceed 200 vehicle movements per day. The exceptions to this are the section of O'Herns Road east of the dog pound and the section of Harvest Home Road east of the Epping RSL Club. On these sections of road, TTM Consulting Pty Ltd (TTM) estimates that the existing traffic volume is less than 1000 vehicle movements per day.

3.6.2 Existing Planning Framework

The ENSP incorporates grid-based design principles to ensure that a positive sense of place is progressively established. Integral to the overall layout of the ENSP is the creation of interlinked communities with each having a relationship to the central core or 'town centre'. It is intended that the communities / neighbourhoods will each have local variation and identity but will collectively contribute to the road network and critical mass required to support the town centre.

The ENSP incorporates grid-based design principles to ensure that a positive sense of place is progressively established. Integral to the overall layout of the ENSP is the creation of interlinked communities with each having a relationship to the central core or 'town centre'. It is intended that the communities / neighbourhoods will each have local variation and identity but will collectively contribute to the road network and critical mass required to support the town centre.

The close proximity of the Cooper Street Employment Area to Epping North, including Aurora, is an important component of the Whittlesea vision for Epping North as a sustainable urban growth area.

Cooper Street Development Plan (Part 1)



(c) Epping North Local Structure Plan

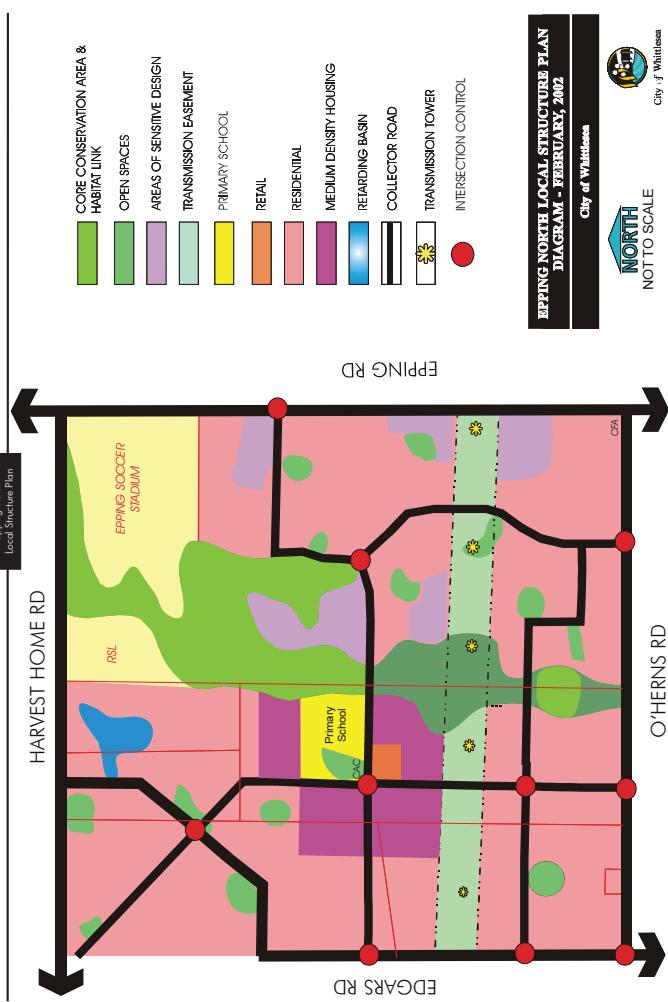
The land to the immediate east of the subject land is included in the Epping North Local Structure Plan (ENLSP). Section A of Aurora forms the north west corner of the ENLSP. The ENLSP anticipates approximately 1850 residential lots and a neighbourhood centre, consisting of a DET primary school, retail, community and open space facilities.

(d) Extension of Epping Railway Line

ramps at the O'Herns Road interchange may be provided before the northern ramps.

The following two proposals to extend the Epping railway line have been considered by the State government.

- Extend from Lalor station to Aurora and possibly to Donnybrook.
- Extend from Epping station to South Morang and beyond to Mernda.



Epping North Local Structure Plan

Epping North Local Structure Plan

Based on advice from VicRoads, it is anticipated that the southern

(e) Extension of Epping Railway Line

ramps at the O'Herns Road interchange may be provided before the northern ramps.

The following two proposals to extend the Epping railway line have been considered by the State government.

- Extend from Lalor station to Aurora and possibly to Donnybrook.
- Extend from Epping station to South Morang and beyond to Mernda.

The State government transport blueprint Meeting Our Transport Challenges: Connecting Victorian Communities, states that the extension of the railway line from Epping to South Morang is a long term project to be developed progressively over 25 years. The State government also has a policy that prevents new road level crossings of railway lines.

The Department of Infrastructure is preparing a Public Acquisition Overlay for the public transport corridor to link Lalor station, Epping Plaza, The Northern Hospital, the Cooper Street Employment Area, Aurora and Donnybrook. The reservation is generally 27 metres wide with variations to accommodate stations and topographical constraints.

Edgars Road provides arterial road access from the Western Ring Road to Cooper Street. Edgars Road is proposed to extend north of Cooper Street to at least Craigieburn Road East

(f) E6 Alignment

The E6 alignment (4.5 kilometres east of Aurora) forms the east boundary of the ENLSP area. The E6 is a proposed north-south primary arterial route, which will extend from the Metropolitan Ring Road in the south to Bridge Inn Road in the north. It will provide an alternative north-south route for both Epping North and Mernda / Doreen that will alleviate pressure on High Street/Epping Road and Plenty Road.

A reservation exists for the E6 between the Metropolitan Ring Road and Findon Road. No reservation yet exists north of Findon Road however, north of Harvest Home Road it is proposed that the E6 alignment will utilise the Bindis Road Reservation. Bindis Road is an unsealed local road, which extends from Harvest Home Road to Bridge Inn Road and has a 15 to 18 metres wide reservation.

Edgars Road provides arterial road access from the Western Ring Road to Cooper Street. Edgars Road is proposed to extend north of Cooper Street to at least Craigieburn Road East

(g) E6 Alignment

The ENLSP specifies that Epping Road will be upgraded from a two-lane undivided road to a four-lane divided road with a reservation width of 36 metres. This cross section makes provision for a 7 metres wide central median to accommodate a double row of trees and a 5 metres wide nature strip on each side to accommodate a single row of trees. A 2.5 metres wide bike lane is proposed to be included on each carriageway but no provision is made for parking. Parking will be accommodated in the service roads required to control access to Epping Road.

(h) E6 Alignment

The Craigieburn Bypass connects the Western Ring Road at Campbellfield to the Hume Freeway at Kalkallo.

EPPING NORTH LOCAL STRUCTURE PLAN
DIAGRAM - FEBRUARY, 2002

CITY OF WHITESIDE
NORTH
NOT TO SCALE
City of Whiteside

- A fully directional interchange at the Western Ring Road (constructed).
- A full diamond interchange at Cooper Street (proposed).
- A full diamond interchange at O'Herns Road (proposed).
- A south-facing half diamond interchange at Craigieburn Road East (constructed).
- All movements at the Hume Freeway (constructed).

3.6.3 Traffic Modelling

Several analyses of future traffic volumes and road network requirements for Epping North were completed for Whittlesea and VicRoads, prior to the commencement of planning for Aurora. These studies were associated with particular projects and were based on the population and employment trends at the time of the respective studies.

Grogan Richards Pty Ltd predicted future (ultimate development) traffic as part of the preparation of the ENSP and ENLSP.

Greg Tucker and Associates Pty Ltd (GTA) completed modelling for the Cooper Street Employment Area. The daily traffic volumes calculated included existing, Epping North and Cooper Street Employment Area traffic.

Velitch Lister Consulting Pty Ltd (VLC) completed modelling, on behalf of VicRoads, for the Whittlesea ultimate development. This modelling was based on the assumption of development north of Craigieburn Road East. The combination of this land being outside the urban growth boundary of the Scheme and used for quarrying, means that it is unlikely that the development and associated traffic modelling assumed a realistic reflection of the urban outcomes expected in the short to medium term.

Whittlesea has recently completed a 'future road needs' study, which is partly based on traffic flow modelling for the ultimate land development of Epping North and the surrounding area. This study considers one scenario with development north of Craigieburn Road East and one without this development.

OHerns Road At Craigieburn Bypass ramps 17,900 24,500 41,988 43,600 53,600 41,400 44,600
OHerns Road Scanlon Drive to Edgars Road 20,200 24,500 21,938 24,900 27,500 34,200 35,400
OHerns Road East of Edgars Road 20,100 31,200 28,650 23,400 21,700 26,300 26,600
Edgars Road North of OHerns Road 31,400 32,900 22,386 23,400 17,600 14,200 14,750
North of OHerns Road - - 27,109 42,600 60,900 18,500 24,600
Scanlon Drive South of Harvest Home Road - - 10,713 - - 12,800 17,500
Scanlon Drive East of Edgars Road 12,800 - 19,480 - - 10,050 10,050

The morning peak period traffic volumes have been modelled by TTM and the outcomes converted to daily volumes for the key streets in the network. Through traffic on the Craigieburn Bypass was omitted from the modelling.

The TTM modelling has considered the extent of development that may occur north of Craigieburn Road East (in Wollert) based on a possible future scenario provided by Whittlesea. Any possible future development north of Craigieburn Road East is dependent on a variety of actions from the State government. Estimates of daily traffic volumes have been modelled with and without development north of Craigieburn Road East.

The following table provides a comparison between the daily traffic volumes for the ultimate development of Epping North forecast by TTM and the other studies outlined above. While there is obviously some variation between each of the analyses, the TTM modelling most accurately reflects the development proposed at Aurora.

STREET	LOCATION	GROGAN RICHARDS PTY LTD (1999)	GREG TUCKER AND ASSOCIATES PTY LTD (2001)	VELITCH LISTER CONSULTING PTY LTD (2001)	WHITTLESEA (2005): No development north of Craigieburn Road	WHITTLESEA (2005): Development north of Craigieburn Road	CONSULTING PTY LTD (2006): No development north of Craigieburn Road	TTM CONSULTING PTY LTD (2006): Development north of Craigieburn Road
OHerns Road	At Craigieburn Bypass ramps	17,900	24,500	41,988	43,600	53,600	41,400	44,600
OHerns Road	Scanlon Drive to Edgars Road	20,200	24,500	21,938	24,900	27,500	34,200	35,400
OHerns Road	East of Edgars Road	20,100	31,200	28,650	23,400	21,700	26,300	26,600
Edgars Road	North of OHerns Road	31,400	32,900	22,386	23,400	17,600	14,200	14,750
North of OHerns Road	-	-	27,109	42,600	60,900	18,500	24,600	24,600
Scanlon Drive	South of Harvest Home Road	-	-	10,713	-	12,800	17,500	17,500
Scanlon Drive	East of Edgars Road	12,800	-	19,480	-	-	10,050	10,050

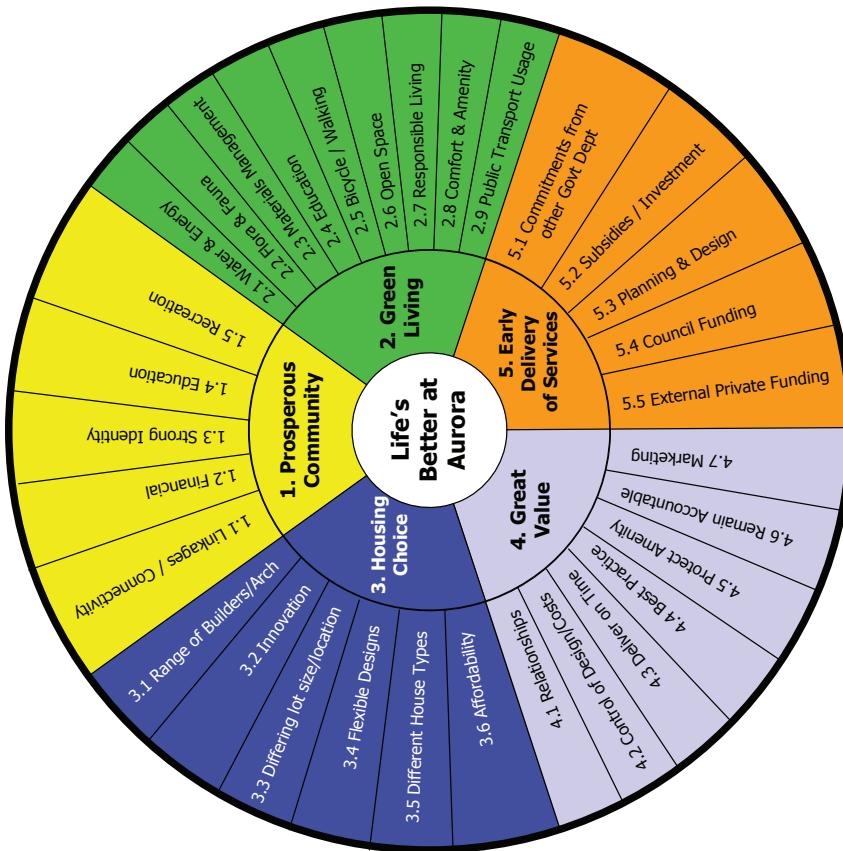
<p>3.7 ENGINEERING INFRASTRUCTURE</p>	<p>Road East, west of the Craigieburn Bypass, and associated reticulation will be of sufficient capacity to meet the requirements of Aurora.</p>
<p>3.7.1 Water Supply</p>	<p>It is understood that all of the existing dwellings on the subject land either on rainwater tanks or small diameter private main extensions for water supply. A new water main in Harvest Home Road will supply reticulated water to meet the requirements of Aurora. Sewage will be also treated locally with the recycled water reticulated back to Aurora for a variety of uses.</p>
<p>3.7.2 Drainage</p>	<p>As noted previously, Edgars Creek is an ephemeral stream that flows through Aurora from north to south. It is ill-defined in some sections and has been badly degraded. There are several natural minor tributaries, the most significant of which are the Edgars Creek Western tributary and the Eastern Tributary. Some of the tributaries have been modified over time by the land owners to suit specific requirements; however, none of these works will form part of the proposed drainage scheme.</p>
<p>3.7.3 Sewerage</p>	<p>The main constraint to the development of Epping North has been the lack of sewerage infrastructure. The metropolitan sewerage system has been extended progressively outward from the Melbourne central activities district. These extensions, which were planned and designed about 50 years ago, did not anticipate that urban growth would extend as far as it has done. As a result, the capacity of the system at the fringes of urban growth is limited. The implication of continuing to add more development to the existing sewerage infrastructure is a higher potential for sewage spills to the environment.</p> <p>A sewerage infrastructure strategy has been finalised for Epping North. The construction of the critical components is underway. The sewage and recycled water treatment facility on the south side of Craigieburn</p>

4 GUIDING PRINCIPLES

The VicUrban project team are committed to the following guiding principles for Aurora:

- prosperous community;
- green living;
- housing choice;
- great value;
- early delivery of services.

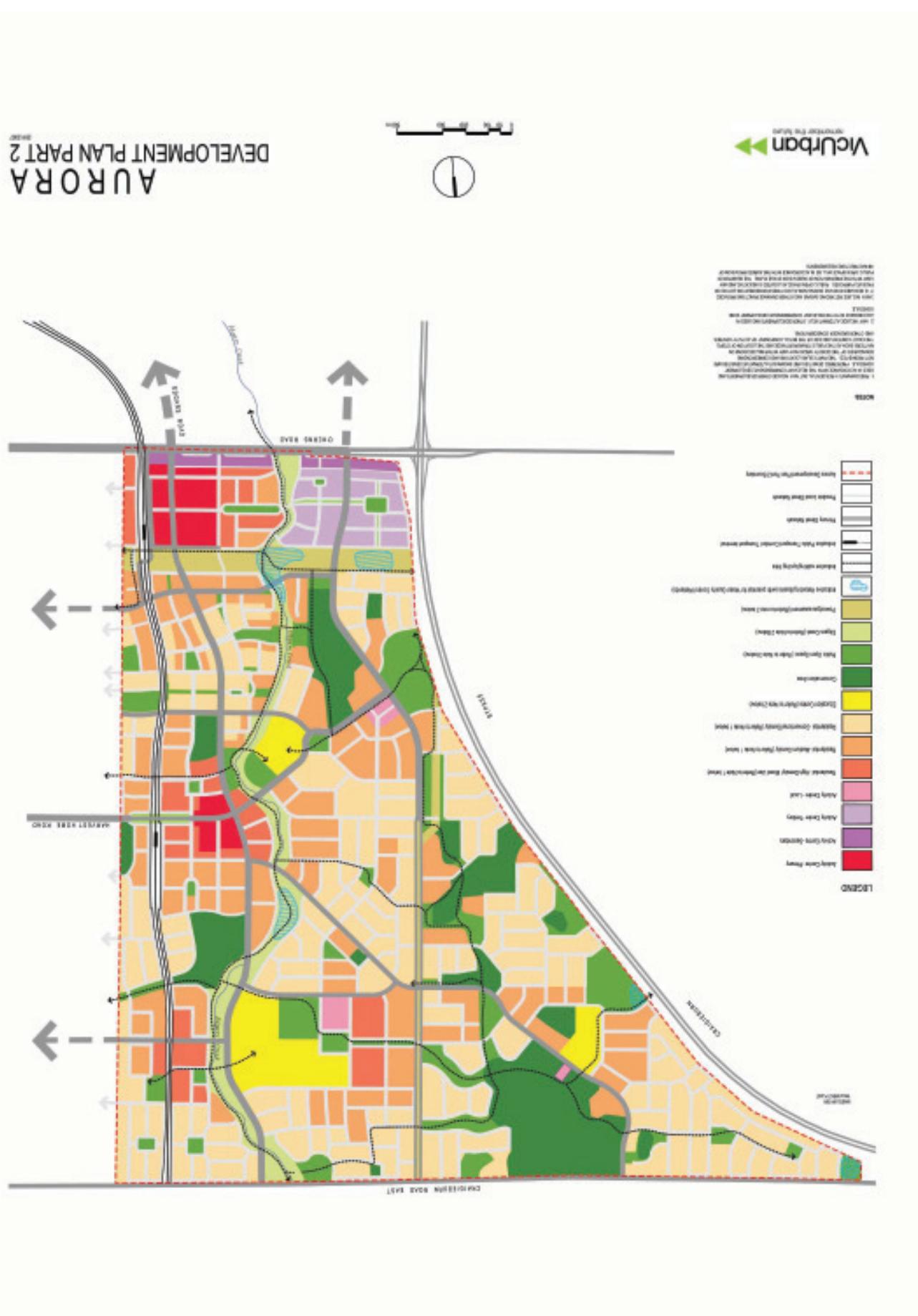
The chart opposite summarises the meanings of the guiding principles and the actions required to deliver each principle.



5 DEVELOPMENT PLAN OBJECTIVES AND RESPONSES

<p>5.1 SUBDIVISION DESIGN AND LANDSCAPE CHARACTER</p> <p>The functions of VicUrban, as described in the Victorian Urban Development Authority Act 2003, include "to promote best practice in urban and community design and development, having regard to links to transport services and innovations in sustainable development" (Section 7(1)(d)).</p> <p>The urban design of Aurora is guided by the following principles of sustainable urban development. The development is dense enough to promote mixed use and is walkable enough to support a good, reliable public transport system; provides a range of housing options; provides accessibility for all ages and abilities and promotes a healthy lifestyle through design which encourages walking and social interaction and allows for participation by all in the knowledge economy; provides locally-based employment opportunities; is sensitive to the local environmental and cultural values from which it derives its sense of place; is solar-oriented and uses both passive and active solar design principles; has high quality landscape treatment of the public realm including streets not roads.</p>	<p>5.1.1 Objectives</p> <p>The general urban design response of Aurora to the above principles is as follows. The detailed design of Aurora will provide more specific responses to those principles.</p> <ul style="list-style-type: none"> • Different dwelling density targets will apply to different parts of Aurora. Targets of 14 lots per hectare will apply in conventional residential areas, 20 lots per hectare in medium density residential areas and 27 lots per hectare in high density residential areas. • The overall dwelling density at Aurora will be significantly higher than 'conventional' subdivisions in the outer areas of Melbourne. With research showing that the population density required to support high quality public transport is in the order of 50 people per hectare, the overall net dwelling density in Aurora will be around 19 dwellings per hectare to facilitate opportunities for high quality and sustainable public transport. • Aurora will comprise a number of subtly discernible districts based on natural features, open space treatment, plan form, and architectural character. Each district will have a 'core' such as a local activity centre, around which higher density development will be constructed. • The urban form will support 'walkability' by providing higher density development closer to the primary activity centres, as well as being extremely 'permeable' to pedestrian travel. • The proposed lot mix will range typically from approximately 180 to 650 square metres, with encouragement for a range of housing options. In some particular areas, such as around activity centres and public open spaces, it is intended to provide alternative dwelling types, including apartment-style housing, at a denser level than the overall figure noted above. A small number of larger lots are also envisaged. This range of lot sizes and densities will reinforce the range of housing options throughout Aurora. • High levels of accessibility will be provided throughout Aurora, with the permeability and density of the urban form promoting walking and cycling. <p>Subject to detailed design and feasibility, it is intended to</p>
<p>5.1.2 General Urban Design Response</p> <p>The general urban design response of Aurora to the above principles is as follows. The detailed design of Aurora will provide more specific responses to those principles.</p> <ul style="list-style-type: none"> • Employment opportunities will be available within the Cooper Street Employment Area to the south, as well as in the activity centres proposed for Aurora. • The environmental and cultural values of the subject land will be protected and reinforced. The sites of greatest ecological value will be protected. Cultural heritage elements such as Aboriginal archaeological sites, dry stone walls, historic buildings and homestead vegetation will be integrated into the design as far as possible to reinforce the unique sense of place of the subject land. • The north-south grid of streets will maximise the potential for solar access, while a commitment to a minimum six-star energy rating for dwellings will ensure active and passive solar technologies are adopted. • The landscape throughout the public realm of Aurora will be of high quality and incorporate a range of environmentally sensitive initiatives, including a high level of native species and water sensitive urban design. 	<p>5.1.2 General Urban Design Response</p> <p>The general urban design response of Aurora to the above principles is as follows. The detailed design of Aurora will provide more specific responses to those principles.</p> <ul style="list-style-type: none"> • Employment opportunities will be available within the Cooper Street Employment Area to the south, as well as in the activity centres proposed for Aurora. • The environmental and cultural values of the subject land will be protected and reinforced. The sites of greatest ecological value will be protected. Cultural heritage elements such as Aboriginal archaeological sites, dry stone walls, historic buildings and homestead vegetation will be integrated into the design as far as possible to reinforce the unique sense of place of the subject land. • The north-south grid of streets will maximise the potential for solar access, while a commitment to a minimum six-star energy rating for dwellings will ensure active and passive solar technologies are adopted. • The landscape throughout the public realm of Aurora will be of high quality and incorporate a range of environmentally sensitive initiatives, including a high level of native species and water sensitive urban design.

Aurora Development Plan Part 2



5.1.3 Subdivision Design

There are two north-south arterial streets - Edgars Road and Scanlon Drive - that connect Craigieburn Road East and O'Hens Road. In the southern section, the alignment of Edgars Road facilitates a grade-separated crossing of O'Hens Road to allow for a possible future railway line. North of Harvest Home Road, Edgars Road curves to the west to avoid a stony rise, to maximise the opportunity for higher density development to support the public transport corridor and to meet the edge of Edgars Creek to facilitate its integration in the public realm. The northern section of Scanlon Drive aligns with the basement associated with the transmission gas main.

(a) Street Orientation

The overall street orientation of Aurora is based on a loosely defined north-south / east-west grid with some key diagonal streets for connectivity and minor deviations to accommodate a range of natural / cultural features. This approach to the street network provides:

- strong interconnectedness to allow maximum choice of routes through the neighbourhoods;
- highly integrated streets to distribute local traffic;
- neighbourhoods that are integrated with surrounding ones, creating the opportunity for strong neighbourhood social connections to occur;
- maximum solar access for the lots and dwellings;
- interesting highlights in the urban form where the street pattern deviates from the grid.

The grid proposed provides the framework for a broad range of lot sizes and types, including lots with front and rear vehicle access.

(b) Arterial and Neighbourhood Connector Streets

The arterial and neighbourhood connector street network of Aurora is a loose grid generally spaced between 600 and 900 metres.

(c) Access Streets

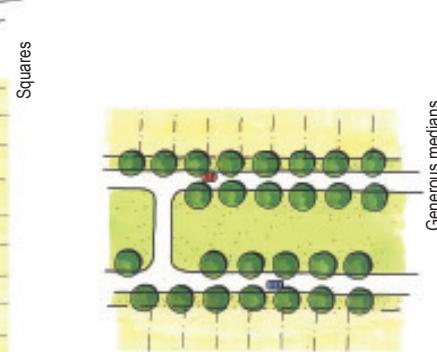
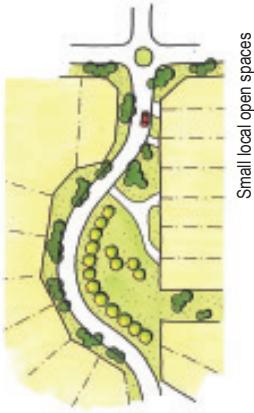
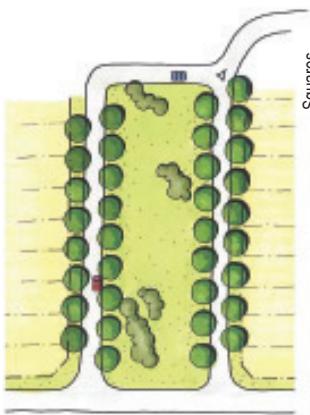
There are three east-west arterial streets - Craigieburn Road East, Harvest Home Road and O'Hens Road. Craigieburn Road East and O'Hens Road provide connections to the regional road network to the east and west, while Harvest Home Road will terminate east of the Craigieburn Bypass. Harvest Home Road is an important secondary arterial however, as it will connect Aurora and any development to the east to the northern primary centre at its intersection with Edgars Road. West of Edgars Road, Harvest Home Road will deviate to the south west to create a direct connection to the local activity centre at the intersection with Scanlon Drive.

The only other deviation of access streets from the grid is around the diagonal neighbourhood connector streets that lead towards the primary activity centres.

The access street network is generally comprised of 16 metres wide reserves (minimum) and is designed to:

- accommodate pedestrians, cyclists and vehicles;
- provide for on-street parking;
- control vehicle speed by street length, on-street parking intensity and variation in width and alignment.

Closer to the primary activity centres, a wider access street form is proposed within an 18 metres reserve. This street form allows for through traffic while accommodating parking on both sides of the street.



In the north west of Aurora, a diagonal neighbourhood connector street extends along the edge of the conservation area, crosses Scanlon Drive and connects to the northern primary activity centre. An east-west neighbourhood connector street in the north east provides a direct link between Aurora and the Epping North East Local Structure Plan area. An east-west neighbourhood connector street in the south east of the subject land provides a connection between the future development in the ENLSP area and the southern primary activity centre, through Section A of Aurora.

- existing tears in the north west;
- a number of stony rises;
- the curved alignment of Edgars Creek;
- topographic changes.



Widened road reserves

		LOT ORIENTATION / TYPE	INDICATIVE LOT WIDTH (metres)	INDICATIVE LOT DEPTH (metres)
(d)	Access Lanes	While the largest (500 to 1000 square metres) lots will be interspersed throughout Aurora, they will be minimised within the walkable catchments of the primary activity centres and stations / interchanges. A diversity of lot sizes can assist in providing choice and consequently an opportunity for a variety of dwelling and household types.		
	(e)	Lot Orientation and Dimensions	North-south lot with front access (garage at main street frontage) North-south lot with rear access (garage at rear on access lane) East-west lot with front access (garage at main street frontage) East-west lot with rear access (garage at rear on access lane)	10.5+ 6.5 - 10.5 (minimum of 9.5 on corners) 12.5+ (minimum 10.5 with single garages and duplex houses) Minimum 7.5 (minimum of 9.5 on corners)
	(f)	The quality of solar access to lots is determined strongly by the lot shape and orientation (and of course by building siting and design). The orientation has already been noted as being generally north-south or east-west but the shape and proportions of the lots will also respond to solar access requirements.		25+ on north side 30+ on north side 32+ on south side 28+ on south side
	(g)	The detailed design of dwellings in Section A of Aurora has concluded that a six-star energy rating is best achieved on east-west lots for detached dwellings and north-south lots for terrace and semi-detached dwellings.		25 - 32
	(h)	The broad parameters that have been adopted in the creation of lots are shown opposite. The figures are indicative only and will be refined as part of the detailed design of each stage of subdivision.		
	(i)	Car parking to all dwellings will be provided in accordance with the requirements of the Scheme. Double garages at the main street frontage will be only provided generally where the lot width is 12.5 metres or greater. Single garages at the main street frontage will be provided generally where the lot width is less than 12.5 metres.		
	(j)	As noted earlier, dwelling density is a critical issue in relation to sustainability, particularly to achieve high quality public transport provision. Aurora will aim to provide higher density (180 to 300 square metres) lots and apartment-style dwellings (100 to 150 square metres) within the walkable catchments (800 metres) of the primary activity centres, public transport stations / interchanges and district cores.		
	(k)	The dwelling density will decrease generally as the distance from the primary activity centres and stations / interchanges increases. The majority of lots will be in the range of 300 to 500 square metres however, there will be opportunity for smaller lots (180 to 300 square metres) close to public open space or community facilities.		

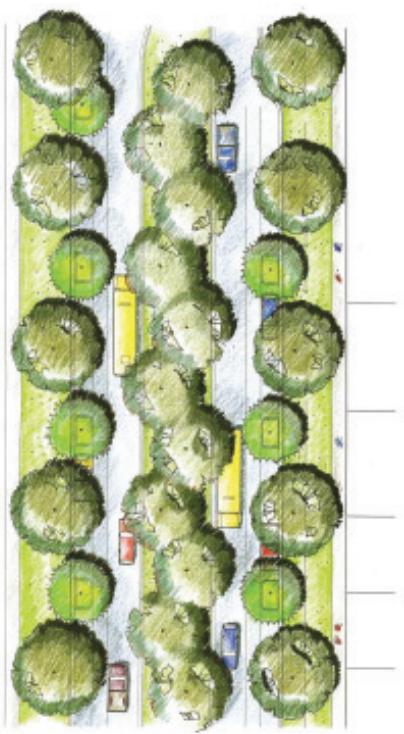
5.14 Landscape Character

(b) Arterial Streets

The local character of Aurora is influenced greatly by its natural and cultural landscape character elements. These elements will be incorporated into the landscape design, in order to help develop a local sense of place.

The sustainability objective of Aurora and the proposed dwelling density generate additional opportunities for the landscape character of the public realm, including the following:

- The ability to reuse and recycle water on the subject land will provide the potential for greater species diversity.
- Passive solar heating / cooling requires access for sunlight into rooms in winter and shade in summer. Effective capture of solar energy for conversion to electricity requires uninterrupted access to the sun throughout the day. This requires appropriate built form as well as the use of suitable street trees, which will influence the landscape character of the streets.
- Some locally indigenous tree species, such as River Red-gums, are not appropriate for use as street trees due to their scale, form and tendency to drop limbs. Other species have not had a proven track record in streetscapes or have not been grown commercially in the numbers required for a development the size of Aurora. Acknowledging these constraints, it is appropriate to use non-indigenous native trees in streets.
- Recycled or renewable materials and resources will be used in the landscape construction and represent sustainable materials with low embodied energy, low toxicity and the lowest discernable energy costs associated with transportation.



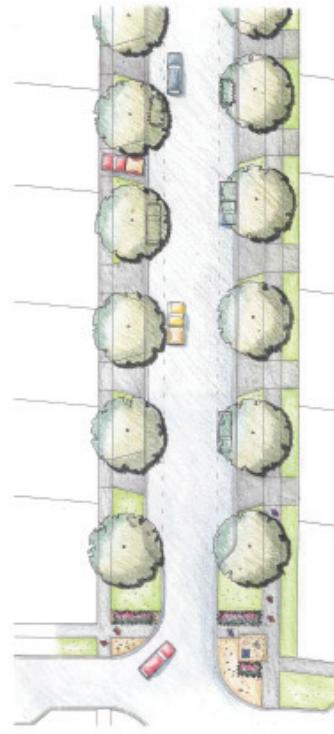
(b) Arterial Streets

The intent of the landscape approach to arterial streets is to provide legible, clear pathways through and around Aurora for motorists, cyclists and pedestrians.

(c) Neighbourhood Connector Streets

Central medians and wide verges provide the opportunity for strong avenue planting of native trees and water sensitive urban design (WSUD) treatments, where practicable. Deciduous trees may be used in the primary activity centres to provide greater solar access during winter. Indigenous shrubs, groundcovers and grass species may be used as accent plantings. In the primary activity centres, a more urban form of streetscape will include hard-paved or gravel areas and the provision of street furniture and public art.

There is the opportunity for strong avenue planting of native trees and indigenous shrubs, groundcovers and grass species may be used as accent plantings at key points. WSUD treatments may also require space for swales and drainage courses.



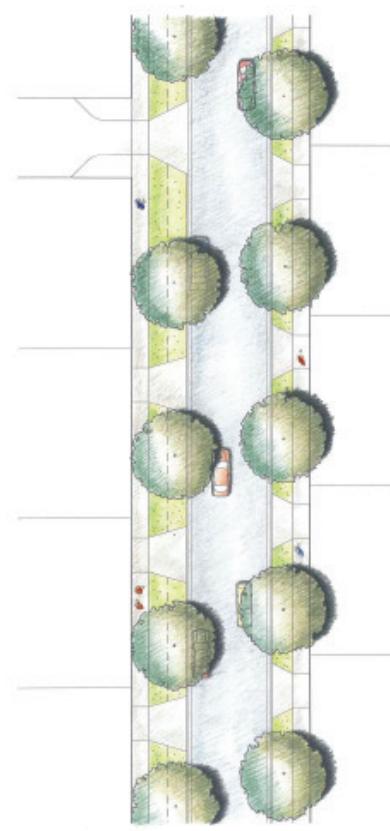
Neighbourhood Connector Street

(d) Access Streets

The majority of streets within Aurora will be access streets. The intent within these streetscapes is to provide a comfortable, domestic-scale landscape treatment where landscape and urban design cues will be used to alert motorists to slow down.

A relatively high density of street trees will be used in access streets with a variety of species to create a sense of neighbourhood identity and influence the microclimate. The species will be predominantly non-indigenous native trees. Shrubs, groundcovers and grass species may be used as accent plantings and street furniture may be incorporated at key points.

As with the arterial and neighbourhood connector streets, WSUD treatments may also require space for swales and drainage courses.

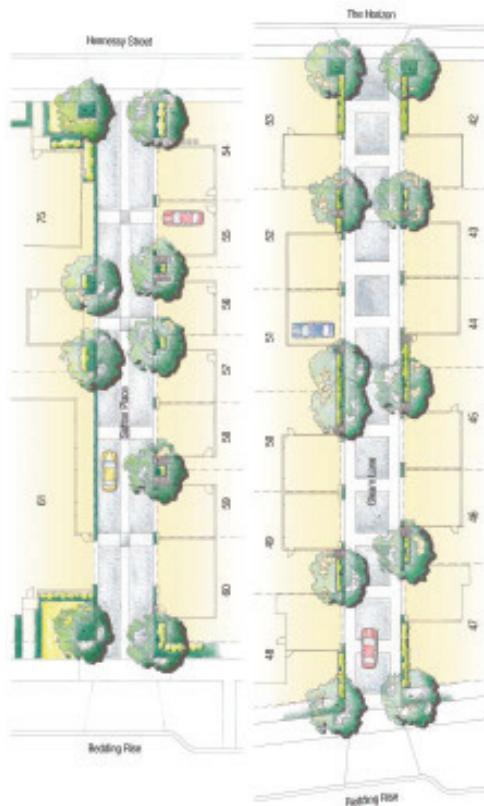


Access Street

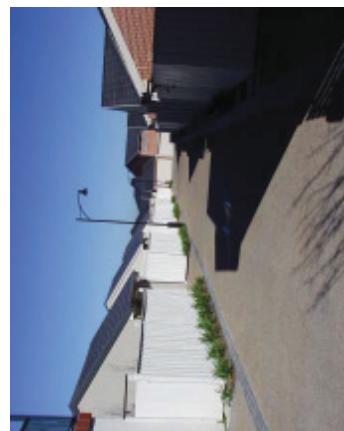
(e) Access Lanes

The intent of the landscape approach to access lanes is to provide clear and safe access for pedestrians, cyclists and motorists.

The access lanes will be paved predominantly but where space is available, small trees with robust ground covers or tufting plants around the base will be introduced to provide shade and visual softening.



Access Lane



(f) Street Trees

The selection of particular street trees for each stage of subdivision will be refined and reviewed over time. An indicative list of species is opposite.

	STREET TYPE / INDICATIVE PLANT SPECIES	EVERGREEN (E) / DECIDUOUS (D)	TYPICAL HEIGHT AT Maturity (metres)	STREET TYPE / INDICATIVE PLANT SPECIES	EVERGREEN (E) / DECIDUOUS (D)	TYPICAL HEIGHT AT Maturity (metres)
Arterial street						
Spotted Gum (<i>Corymbia maculata</i>)	E	20		Access street (north-south streets with minimal setback to dwellings)		
Smooth-barked Apple (<i>Aegiphora costata</i>)	E	15-20		Lightwood (<i>Acacia implexa</i>)	E	6-10
				Blackwood (<i>Acacia melanoxylon</i>)	E	6-10
				Coastal Banksia (<i>Banksia integrifolia</i>)	E	10-15
				Dawson River Bottlebrush (<i>Callistemon viminalis</i>)	E	6-10
				Dawson River (River)		
				Red Flowering-gum (<i>Corymbia ficifolia</i>)	E	6-10
				Yellow Bloodwood (<i>Corymbia eximia</i>)	E	6-10
				Silver Gum (<i>Eucalyptus crenulata</i>)	E	6-10
				Large-fruited Yellow-gum (<i>Eucalyptus leucoxylon</i>) ssp. <i>Megacarpa</i>)	E	6-10
				Eukie Dwarf (<i>Eucalyptus leucoxylon</i>)	E	5-7
				'Eukie Dwarf'		
				Show Gum (<i>Eucalyptus pauciflora</i> 'Little Showman')	E	7
				Coral Gum (<i>Eucalyptus torquata</i>)	E	6-10
				Kanooka (<i>Tristaniopsis laurina</i>)	E	6-10
Neighbourhood connector street						
Central medians and side verges	E	15-20		Access lane		
Blackwood (<i>Acacia melanoxylon</i>)	E	15+		Small evergreen trees		
Spotted Gum (<i>Corymbia maculata</i>)	E	15-20		Bottlebrush (<i>Callistemon salignus</i>)	E	
River Peppermint (<i>Eucalyptus delegatensis</i>)	E	15-20		Bottlebrush (<i>Callistemon King's Park Special</i>)	E	
Yellow Box (<i>Eucalyptus melliodora</i>)	E	15-20		Lemon (<i>Citrus limon</i> 'Eureka')	E	7
'Rosea' Red Ironbark (<i>Eucalyptus sideroxylon</i> 'Rosea')	E	10-20		Pin Cushion Hakea (<i>Hakea laevis</i>)	E	4-6
Narrow-leaved Peppermint (<i>Eucalyptus radiata</i>)	E	15-20		Pint Spike Hakea (<i>Hakea cornuta</i>)	E	4-7
Median-divided street (30 metres road reserve)				Olive (<i>Olea europaea</i> (seedless))	E	5-7
Central medians	E	10-20		Access street		
Red Spotted-gum (<i>Eucalyptus mannifera</i> ssp. <i>maculosa</i>)	E	15-20		(east-west streets with minimal setback to dwellings)		
Red Box (<i>Eucalyptus polyanthemos</i>)	E			Dwarf Apple Myrtle (<i>Angophora hispida</i>)	E	6-10
Side verges				Rose She-Oak (<i>Allocasuarina torulosa</i>)	E	10-15
Red Flowering-gum (<i>Corymbia ficifolia</i>)	E	6-10		Yellow Gum (<i>Eucalyptus leucoxylon</i> spp. <i>Connata</i>)	E	10-12
Wallagarra White-gum (<i>Eucalyptus scoparia</i>)	E	10-15		Eukie Dwarf (<i>Eucalyptus leucoxylon</i>) 'Eukie Dwarf'	E	5-7
Access street				'Little Spotty' (<i>Eucalyptus mannifera</i> - dwarf form)	E	12-14
(east-west streets with minimal setback to dwellings)				Gippsland Manna-gum (<i>Eucalyptus pyrocarpa</i>)	E	6-10
				Pink Gum (<i>Eucalyptus fasciculosa</i>)	E	6-10
				Dwarf Yellow-gum (<i>Eucalyptus leucoxylon</i> dwarf)	E	10-15
				Wallagara White-gum (<i>Eucalyptus scoparia</i>)	E	6-10
				White Cedar (<i>Melia azedarach</i>)	D	

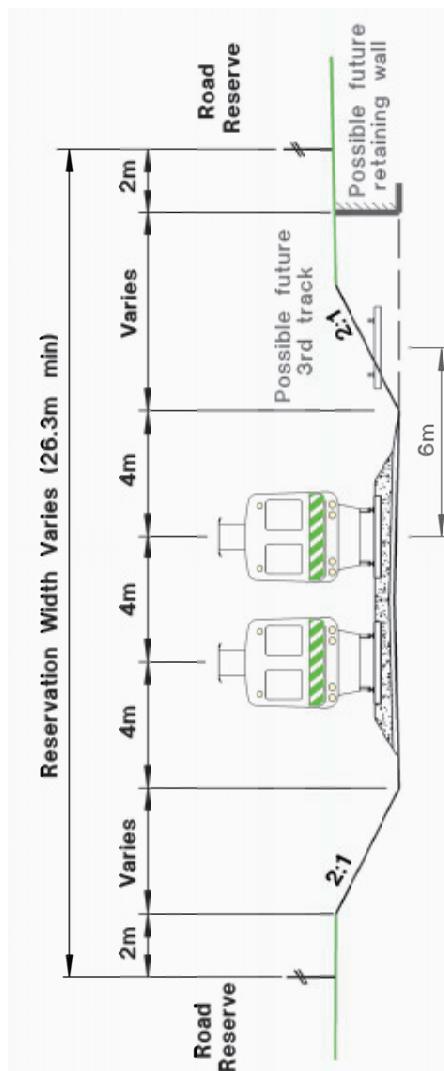
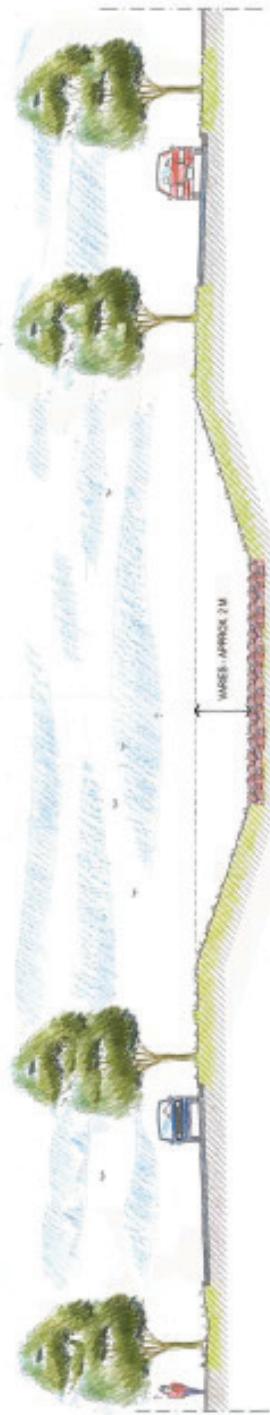
(g) Public Transport Corridor

The intent of the landscape approach to the public transport corridor is to provide an attractive appearance until the railway line is constructed. Signs in the corridor will explain the future use of the land and that the landscape treatment is an interim solution.

The public transport corridor varies in width but is approximately 26 metres wide and is abutted on both sides by streets for most of its length. An avenue of trees will be planted on each side of the streets with a grass 'median' in the centre.

The railway line is expected to be constructed approximately 2 metres below the abutting street levels. The landscape approach outlined above anticipates the retention of the avenues of trees, which may be quite mature when the railway line is constructed. The precise arrangement is subject to the agreement of the Department of Infrastructure in consultation with the Council.

Public Transport Corridor



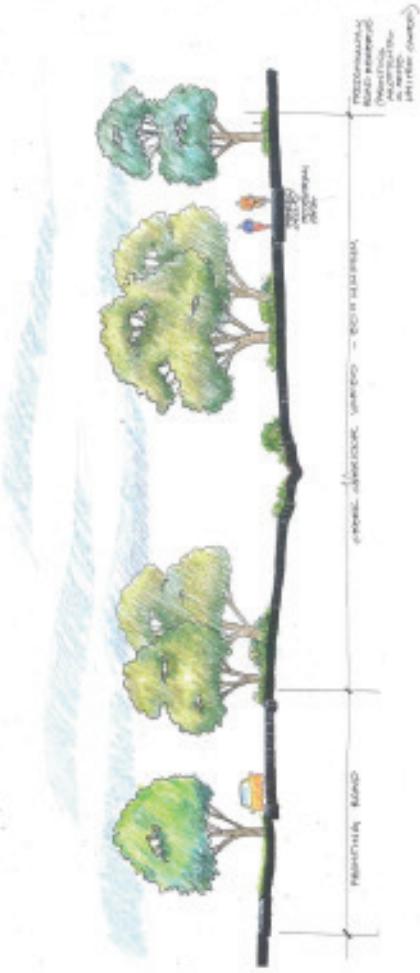
Typical Heavy Rail Cross Section
(Reproduced from Reservation of Land for the Epping North Public Transport Corridor, Department of Infrastructure, February 2007)

5.2 HOUSING	5.2.2 Built Form	<p>The VicUrban Sustainability Charter outlines the role of VicUrban in demonstrating initiatives that will contribute to improvements in housing affordability and facilitating the delivery of housing that caters for the broadest range of households. Relevant objectives include the following.</p> <ul style="list-style-type: none"> • preparation of an analysis of housing needs; • provision of a diversity of lot sizes to encourage a range of housing options in response to the housing needs analysis; • ensuring a proportion of dwelling and land packages are available in the lowest quartile of the local market; • development of sustainable models for supply and management of affordable rental housing through partnership with at least one accredited not-for-profit housing provider; • encouraging the application of environmental and adaptable housing design principles to help minimise dwelling maintenance and operating costs. <p>VicUrban intends to achieve these objectives through the following contributions to improving housing affordability.</p> <ul style="list-style-type: none"> • Increasing the supply of affordable rental housing through innovative partnerships with the not-for-profit social housing sector and the Office of Housing. • Encouraging environmental design to reduce the cost of dwelling construction and ongoing operating costs. • Partnering with government to achieve mixed income communities. • Seeking partnerships with financers to develop Shared Equity Home Loan products that increase access to home ownership.
5.2.1 Objectives	5.2.2 Built Form	<p>The proposed more traditional, 'inner urban' level of density means that the urban character of Aurora will be quite different from other developments in Whittlesea and on the fringe generally.</p> <p>Another obvious difference in the urban character of Aurora will emerge from the philosophy that the overall 'look' must reinforce the commitment of VicUrban to sustainability. This will result in all built form expressing a contemporary aesthetic, avoiding reproduction or period design to reinforce the difference of Aurora from other, less sustainable development periods.</p> <p>The objectives of housing at Aurora are to:</p> <ul style="list-style-type: none"> • provide a greater level of housing diversity in order to facilitate a wider range of dwelling types, styles, forms and costs appropriate to the needs of the community and to maximise opportunities for entry into home ownership; • provide a dwelling density to support more sustainable public transport and mixed use, walkable neighbourhoods; • ensure that affordable housing, including rental housing, is integrated into Aurora and is well located to public transport and other services; • encourage architecture that reflects the overall sustainability objectives of Aurora while being flexible enough to evolve over time to incorporate future advances in technology; • promote the delivery of well-designed, energy efficient housing that has low maintenance requirements and is cost efficient through its lifecycle; • ensure that dwellings are flexible enough to adapt to the changing lifestyle preferences of the community; • explore a range of tenure options with different housing providers, including the Office of Housing and community housing providers; • ensure that dwelling siting and design is compatible with any Aurora design controls and guidelines. <p>The Whittlesea Housing Strategy highlights broad housing affordability concerns and the need for an expanded rental market and specialist housing, such as aged care accommodation.</p> <p>The functions of VicUrban, as described in the Victorian Urban Development Authority Act 2003, include "to contribute to improvements in housing affordability in Victoria" (Section 7(1)(f)).</p> <p>Affordability is not related just to the initial cost of the land and dwelling package but also to the ongoing operating costs related to the degree of energy efficiency of the dwelling, housing adaptability and household transport costs. VicUrban defines affordable housing as "well located housing that meets the needs of low to moderate income households (earning up to \$60,000) in terms of cost, size, quality, security of tenure, safety and access to employment, services, and facilities, and is available for purchase or rental without causing the household income stress".</p>



5.3 ENVIRONMENTAL CONSERVATION	<p>Several other listed species have been recorded within 5 kilometres of the subject land.</p>	<p>Based on the above, Aurora will be referred at the appropriate time to the Commonwealth Minister for Environment and Heritage for a determination under the EPBC Act.</p> <p>The objectives of environmental conservation at Aurora are to:</p> <ul style="list-style-type: none"> • comply with relevant State and Commonwealth government biodiversity legislation and policy; • avoid or minimise adverse impacts on flora and fauna. 	<p>(b) Flora and Fauna Guarantee Act 1988</p> <p>Under the Victorian Flora and Fauna Guarantee Act 1988 (FFG Act), a permit is required from the Department of Sustainability and Environment (DSE) in some circumstances to 'take' listed flora species species that are members of listed communities or protected flora.</p> <p>Plains Grassland and Plains Grassy Woodland are listed communities and occur on the subject land. Stony Knoll Shrubland (Grassland) may be considered a listed community under the broad definition of Plains Grassland. Many of the species recorded at Aurora are protected flora and one listed flora species – Tough Scrub-pea - was recorded. Two listed fauna species - Growling Grass Frog and Golden Sun Moth - were recorded at Aurora.</p> <p>All the necessary approvals will be sought from the DSE in accordance with the FFG Act.</p> <p>(a) Environment Protection and Biodiversity Conservation Act 1999</p> <p>The Commonwealth EPBC Act applies to developments and associated activities that have the potential to impact significantly on matters protected under the EPBC Act. Under the EPBC Act, actions (unless exempt) require approval from the Commonwealth Minister for Environment and Heritage if they have, may have or are likely to have a significant impact on a 'matter of national environmental significance'. There are currently seven matters of national environmental significance, including two relevant to the subject land - nationally listed threatened species and ecological communities and listed migratory species.</p> <p>The following species listed under the EPBC Act have been found on the subject land:</p> <ul style="list-style-type: none"> • Matted Flax Lily, which is listed as 'endangered'; • Golden Sun Moth, which is listed as 'critically endangered'; • Growling Grass Frog, which is listed as 'vulnerable'. 	<p>There is a three-step approach to ensure net gain as follows:</p> <ul style="list-style-type: none"> • avoid adverse impacts, particularly through avoiding vegetation clearance; • if impacts cannot be avoided, they should be minimised through planning, project design and management; • for unavoidable vegetation loss, develop appropriate offset options. <p>Under the Framework net gain losses and offsets are assessed in terms of:</p> <ul style="list-style-type: none"> • 'habitat hectares', which is a measurement of habitat quality and quantity; • tree protection and / or replacement for the removal of large and medium trees; • revegetation for land or water protection. <p>Offsets can be achieved by improvements in the quality or extent of native vegetation in a selected 'offset area'. The conservation significance of vegetation to be removed is taken into account when offsets are determined. Much of the native vegetation within Aurora meets the definition of high to very high conservation value under the Framework.</p> <p>Biosis Research Pty Ltd has completed a net gain (habitat hectare) assessment of Aurora, including Section A (January 2007). The study identified approximately 33.2 hectares of native vegetation, comprising Stony Knoll Shrubland/Grassland, Plains Grassland and Plains Grassy Woodland.</p> <p>Three hundred and eleven 'medium' to 'very large' indigenous canopy trees have been identified within the study area. Approximately 308 'small' trees are also present. ADP2 alone contains 141 'medium' to 'very large' indigenous canopy trees and 231 'small' trees. At least 80% of all trees within ADP2 will be retained.</p> <p>Development of Aurora will necessitate the removal of up to 7.8 hectares of native vegetation, which translates to 2.0 habitat hectares. A gain of 3.3 habitat hectares would be required to</p>
				<p>fully offset this loss, when the conservation significance of the vegetation is considered.</p> <p>The proposed management of 25.5 hectares of retained vegetation within the identified offset areas is predicted to yield a gain of 5.0 habitat hectares over a ten year management period. Woodland reserves within ADP2, and on nearby VicUrban land will satisfy the tree protection and recruitment requirement for unavoidable removal of indigenous trees.</p> <p>An offset management plan is under preparation. This plan aims to:</p> <ul style="list-style-type: none"> ❖ Protect retained native vegetation and habitats and indigenous flora and fauna species during development of Aurora and into the future. ❖ Permanently protect populations of threatened flora and fauna species. ❖ Through vegetation protection, conservation management and improvement in vegetation quality, achieve a vegetation 'gain' in accordance with the principles of the Native Vegetation Framework (NRE 2002). <p>Key principles of the plan include:</p> <ul style="list-style-type: none"> ❖ The offset areas will be suitably protected to ensure their permanent protection by means of on-title agreement, zoning and/or overlay provisions including tree protection measures where necessary ❖ Perimeter fencing will be established and maintained ❖ Grazing will be prevented unless necessary for ecological purposes ❖ Weed levels will be managed so that cover does not increase beyond current levels, and high threat weeds will be managed beyond legal duty of care ❖ Fallen timber, logs and organic litter will be retained ❖ Rabbits and foxes will be controlled

- (d) Draft Port Phillip and Westermport Native Vegetation Plan
- Protection of reserves during construction works
 - Threatened flora management
 - Threatened fauna management
 - Planning, monitoring and reporting on works
- The Draft Port Phillip and Westermport Native Vegetation Plan (the draft NVP) has been prepared to develop a strategic and coordinated approach to maintaining the quantity and quality of native vegetation in the Port Phillip and Westermport region. The draft NVP describes the biodiversity values of the region and provides guidance to local government on how clearing applications should be assessed based on regional priorities.
- Native vegetation on the subject land is included with Vegetation Management Units (VMU) which are 'a very high priority' for retention. The draft NVP proposes that applications for clearing in any of the VMU be refused, except for projects of state significance as determined at Ministerial level.
- (e) Whittlesea Planning Scheme
- As outlined in Section 2.16 above, the Scheme includes Aurora in VPO2. A planning permit is required generally to remove, destroy or lop native vegetation in VPO2. A planning permit is also required generally to remove, destroy or lop native vegetation under Clause 52.17 of the Scheme. In the circumstances specified in Clause 66 of the Scheme, the DSE is a referral authority for such planning permit applications.
- (f) Environmental Management Plan
- An Environmental Management Plan (EMP) will be prepared for each subdivision section of Aurora in response to a subdivision permit condition. Each EMP will include the following items as applicable.
- Fencing and control of access by residents
 - Protection of trees, and management of tree recruitment areas
 - Control of biomass
 - Weed management



Concept Plan Edgars Creek

- At the local landscape level, the primary habitat link within Aurora is Edgars Creek. Edgars Creek will be developed as a major linear public open space 'spine' through Aurora. Road crossings will be designed to allow the movement of fauna, particularly the Growing Grass Frog, along the creek corridor. Landscaping works within the open space will be designed to complement the habitat and corridor values of the creek.
- Where feasible, road reserves, parkland and the power easement will provide 'stepping stone' plantings of indigenous trees and shrubs.
- 5.3.4 Habitat Links
- 5.3.5 Minimising Impacts on Flora and Fauna
- Aurora has been designed to protect the sites of greatest ecological significance in conservation areas. These areas will also be managed to provide net gain offsets for any unavoidable losses of native vegetation. The range of uses for each area will be determined according to its ecological values and sensitivity to disturbance.
- The change from low intensity farming uses to high density urban uses will result however, in a number of potential impacts on biodiversity during and after the construction phases. Many of the potential impacts can be mitigated.
- The following table summarises the potential impacts, the mitigation measures likely to be adopted at Aurora and the probable impacts on conservation significance after the mitigation measures have been implemented.

SITE	POTENTIAL IMPACT	MITIGATION MEASURES	PROBABLE IMPACTS AFTER MITIGATION	
			Low	High
High quality stony rises	Continued degradation prior to construction. Accidental damage during construction phase. Active damage following construction from human activity. Continued general degradation (for example, weed invasion).	Develop and implement interim management plan. Temporary protective fencing around stony rises. Implementation of 'ecological deposit' or fines to contractors for damage. Retain as 'no-go' areas (restricting or preventing access by the general public). Implementation of management plan. 'Friends' groups.	Low to moderate Low Low Low to moderate	Low Low Low to moderate Low
Larger, less intact stony rises	Continued degradation prior to construction. Accidental damage during construction phase. Active damage following construction from human activity. Continued general degradation (for example, weed invasion).	Develop and implement interim management plan. Temporary protective fencing around stony rises. Implementation of 'ecological deposit' or fines to contractors for damage. Controlled public access. Implementation of management plan. 'Friends' groups.	Low to moderate Low Low to moderate Low to moderate	Low Low Low to moderate Low
Stands of mature River Red-gums	Continued degradation prior to construction, especially water-stress and overbrowsing by possums. Accidental damage during construction phase. Active damage following construction from human activity. Continued general degradation (for example, weed invasion and pest fauna).	Investigate, develop and implement management plan. Temporary protective fencing around stands. Implementation of 'ecological deposit' or fines to contractors for damage. Controlled public access. Develop and implement management plan (revegetation, regeneration). 'Friends' groups.	Low to moderate Low Low Moderate	Low Low Low Low
Golden Sun Moth habitat	Small, isolated or degraded stony rises Loss during development design. Loss of habitat during development design.	If practicable, retain within conservation areas. Impacts and mitigation measures then as for high quality and larger stony rises. If not practicable to retain, investigate and develop plans for targeted flora and fauna salvage. Adjust conservation areas to encompass habitat around known populations with buffer zone. Further investigate potential habitat. Avoid construction in the vicinity at this time. Develop effective management plans including regular monitoring.	Moderate Low Low to moderate Low Low to moderate if successful. High if unsuccessful	Low Low Low Low Low
Isolated live and dead trees	Change to habitat (for example, weeds, chemicals and hydrology). Loss during development design.	If practicable, retain within conservation areas. If not practicable to retain, move felled trees to stands of River Red-gums (as ground habitat) or created wetlands (as a perch). Avoid removal of hollow-bearing trees during spring / early summer.	Moderate Low to moderate	Moderate Low to moderate

SITE	POTENTIAL IMPACT	MITIGATION MEASURES	PROBABLE IMPACTS AFTER MITIGATION
Edgars Creek	Dry stone walls	Loss during development design. If practicable, retain within conservation areas.	Low
	Accidental damage during construction phase.	If not practicable to retain, move stones to selected stony rises to enhance habitat values.	Low to moderate
	Removal of stones or damage to the walls following construction.	Temporary protective fencing around walls. Implementation of 'ecological deposit' or fines to contractors for damage.	Very low
	Creation of barriers to fauna movement.	Public education. Possible other techniques developed in conjunction with heritage experts.	Low to moderate
	Accidental damage during construction phase.	Minimise number of road crossings. Consideration of a design of each crossing to optimise the passage of fauna along the Edgars Creek. Develop bridges that facilitate fauna movements.	Moderate
	Active damage following construction from human activity.	Promote best work practices. Develop and implement sediment control plan. Temporary protective fencing around Edgars Creek. Implementation of 'ecological deposit' or fines to contractors for damage.	Low to moderate
	Continued general degradation (for example, weed invasion and pest fauna).	Controlled public access.	Low to moderate
	Runoff of polluted water from urban development.	Develop and implement management plan (weed control, revegetation). Wetland creation.	Low to moderate
	Edgars Creek tributaries	Runoff of polluted water from urban development. Loss during development design.	Develop drainage management plan.
		If practicable, retain within conservation areas. Impacts and mitigation measures then as for Edgars Creek.	Low
Farm dam	Frog.	Loss of population (likely breeding) of nationally significant Growing Grass Frog.	If practicable, retain farm dam within conservation area.
			Low to moderate
	Mostly exotic grasslands used for agricultural purposes	Loss of locally common and artificial habitat used by open country species and species requiring large areas of habitat. Inevitable loss of some indigenous fauna species from subject land.	Create a series of wetlands designed to provide habitat for the species along Edgars Creek in close proximity to dam. Must be established at least two years prior to removal of dam to allow establishment of wetland vegetation.
			Low to moderate

5.4 CULTURAL HERITAGE CONSERVATION	Aurora. RAP's may also assess Cultural Heritage Management Plans and either approve or reject them. Provisions are also made for an appeals process.	5.4.3 Minimising Impacts on Places of Cultural Heritage Significance	<p>Where part or all of any Aboriginal archaeological site is not to be retained, the necessary approvals to disturb the site will be sought from the Registered Aboriginal Party or in the absence of a RAP, from Aboriginal Affairs Victoria, before any action is taken.</p> <ul style="list-style-type: none"> • comply with relevant State and Commonwealth government cultural heritage legislation and policy; • avoid and minimise adverse impacts on Aboriginal and post-contact places of cultural heritage significance.
5.4.1 Objectives		(a) Aboriginal Sites	<p>The Aboriginal archaeological survey demonstrated that the most significant sites (refer Section 2.3.1 above) are located on the stony sites near watercourses. Very few artefacts were located outside these areas. The management objectives for Aboriginal sites are to conserve and retain as much as practicable of the evidence of Aboriginal occupation of Aurora and to conserve sites that demonstrate this presence. These sites will be retained in conservation areas or public open space with primarily passive recreation use.</p>
5.4.2 Compliance with Cultural Heritage Legislation and Policy	(b) Heritage Act 1995		<p>The Victorian Heritage Act 1995 details the statutory requirements for protecting heritage items including historic buildings and gardens, historic places and objects and historical archaeological sites and historic shipwrecks. A number of historical sites including farm runs, artefact scatters and/or stone walls at Aurora are listed on the Victorian Heritage Inventory established under the Heritage Act. Under the Heritage Act, consent is required for particular works or activities, including excavation, associated with an historical archaeological site. Heritage Victoria, part of the DPCD, administers the Heritage Act.</p>
		(a) Aboriginal Heritage Act 2006	<p>All the necessary approvals will be sought from Heritage Victoria in accordance with the Heritage Act.</p> <p>The Aboriginal Heritage Act 2006 provides protection for all Aboriginal cultural property (excluding human remains interred after 1834) relating to the past Aboriginal in Victoria. This includes individual artefacts, scatters of stone artefacts, rock art sites, ancient camp sites, human burials, scarred trees, ruins and archaeological deposits associated with Aboriginal missions or reserves. It can also include places with historical associations with Aboriginal people or groups.</p> <p>The Aboriginal Heritage Act also establishes administrative procedures for archaeological assessments and the mandatory reporting of the discovery of Aboriginal sites and approval processes for disturbance or damage to Aboriginal places or objects through either cultural Heritage Permits, or Cultural Heritage Management Plans. Aboriginal Affairs Victoria (AAV) part of the DPCD administers the Aboriginal Heritage Act.</p>
		(b) European Farm Complexes	<p>The management objective for European historical sites is to conserve and retain as much as practicable of the evidence of early European settlement in Epping. These sites will be retained and incorporated into public open space, where practicable. Management of some of these sites in conjunction with other uses, such as CAC, may be appropriate.</p>
			<p>Where erosion may be an issue, the Aboriginal sites will be revegetated with indigenous species. If artefacts are exposed, taping will occur. This will be best achieved by using relocated turf from areas of native grasslands that may otherwise be destroyed. Construction of paths through the Aboriginal sites will be avoided or only constructed by building up on top of the natural surface - as opposed to excavating into the surface. Introduced materials such as sandstone, crushed bluestone or granite sand will be used to raise the paths above the natural surface.</p>
			<p>Interpretation of the cultural history of the area will be carried out. This will be managed carefully so as not to identify the locations of Aboriginal artefacts, in order to prevent possible unauthorised removal or disturbance.</p>
			<p>Both site restoration and interpretation programs will be completed in close consultation with Aboriginal communities.</p>
			<p>As noted earlier, where part or all of any Aboriginal archaeological site is not to be retained, all necessary approvals to disturb the site will be sought from the Registered Aboriginal Party or Aboriginal Affairs before any action is taken. A representative of the Registered Aboriginal Party</p>



(c) Dry Stone Walls

A number of dry stone walls have been identified at Aurora. Despite the varying condition and intactness of the walls, they contribute to the historic and visual character of the subject land. As the detailed design for each portion of Aurora occurs, a comprehensive concept plan for the incorporation of appropriate dry stone walls into the development will be prepared as part of the landscape design. This concept plan will be formalised in a stone wall management plan.

The general approach to the integration of the dry stone walls in the development of Aurora can be summarised as follows.

- The retention and reconstruction of dry stone walls in their current location. These walls will be fully grouted on concrete footings and will be finished with deep, raked joints to maintain their visual quality.
- Dry stone walls that cannot be retained in their current location will be salvaged. The rocks from these walls may be returned to the lower quality stony rises or used in the construction of new stone walls.
- Where dry stone walls occur in large conservation areas, the walls will be retained in their current construction style. Access to these spaces will be controlled and will not endanger therefore the longevity of the walls.

(d) Evidence of Quarrying

Small quarry holes are a feature of most of the stony rises in Aurora. They are most common on the larger stony rises closest to the sites of former bluestone buildings. As the sources of building stone for the homesteads and barns of the earliest farms in the 1850s and 1860s, they assist in interpreting the land use history of the subject land and the character of the buildings and the people who lived in them. Quarry holes in areas retained as undeveloped public open space will be left