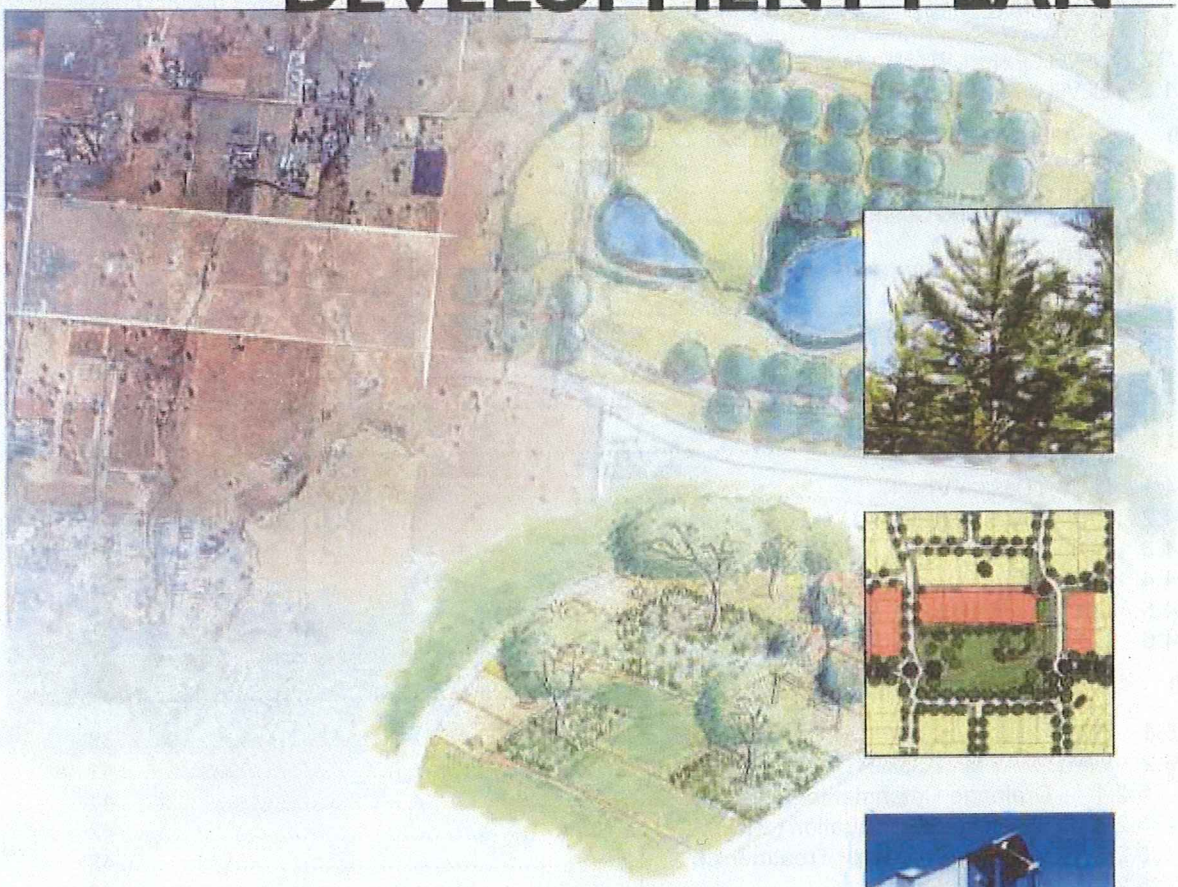
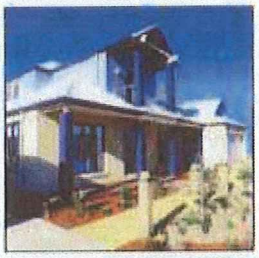
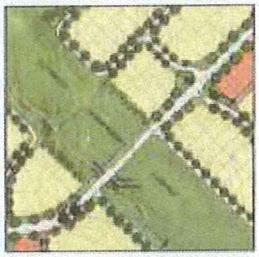
Hayston Valley
Epping North
DEVELOPMENT PLAN







Hayston Valley Development Plan

Development Plan approved by the City of Whittlesea on **24 April 2003** in accordance with Clause 43.04 (Schedule 12) of the Whittlesea Planning Scheme.

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Signature for the Responsible Authority

Prepared for
Hayston Valley Estate Pty Ltd

Coomes
Consulting Group Pty Ltd

April 2003

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1.0 Introduction

1.1 Overview

This project is to be developed by Hayston Valley Estate Pty Ltd, a joint venture company between BMD Group and the Hay family. The BMD Group is a civil construction company with significant expertise in residential land construction. Originally based in Queensland, the company has been established in Victoria for five years. Within this time BMD has undertaken numerous subdivision projects in the City of Whittlesea. The Hay family has owned the land since 1945 and is well known in the area.

Hayston Valley Estate Pty Ltd is the owner of the subject land, comprising 40.2 hectares, located approximately 20 kilometres north of Melbourne, within Epping North (Figure 1, Site Location). It is the intention of Hayston Valley Estate Pty Ltd to develop this land on a staged basis over the next 5 to 10 years as a new residential estate, to be known as 'Hayston Valley Estate'.

The Development Plan also includes a further small land parcel of 0.31 hectares located to the south west of the abovementioned property. The total area of the Development Plan is 40.51 hectares.

The land is zoned Residential 1 in the Whittlesea Planning Scheme and is subject to a Development Plan Overlay (DPO12). Accordingly, a Development Plan that indicates the manner in which the proposed residential estate is to be developed is to be prepared for approval by the Council.

1.2 Development Plan Purpose

The site is located within Epping North, an identified growth area in Whittlesea City. The planning framework within which the development of this land is envisaged to take place is set out in the Epping North Strategic Plan and further detailed in the Harvest Home Local Structure Plan (HHLSP). The purpose of this Development Plan is to provide the detailed structure of the proposed design of Hayston Valley Estate having regard to the principles and objectives of the Harvest Home LSP and with reference to site specific studies. In this manner the Development Plan process seeks to ensure the coordinated development of this land over time.

The role of the Development Plan is as the master plan for the ongoing development of Hayston Valley Estate against which the issue of planning permits for subdivision are considered. To this end, the Planning Scheme requires that the Development Plan (DPO12) include sufficient information to demonstrate that subdivision of the land may proceed in an integrated manner with the immediately surrounding area.

The Development Plan is required to indicate:

- Co-ordination of different land ownerships
- General consistency with the Epping North Strategic Plan and the Harvest Home Local Structure Plan
- The local road, pedestrian and bicycle network, including links to adjoining land and networks and provision for access to proposed public transport routes
- Road cross sections
- Concept design of the proposed subdivision including proposed landscape treatments
- Location and layout of the proposed non-residential uses, including neighbourhood centres and open space
- Relevant topographical and landscape details, including identification of significant environmental and cultural features and measures to preserve and enhance these features
- Opportunities for a diverse range of allotment sizes and dwelling types
- Details of proposed uses, subdivision pattern and treatment of areas of sensitive design
- Individual native trees and an indication of their health as a result of a report by a qualified environmental consultant
- Areas for revegetation
- A stormwater management plan

(Clause 43.04, Schedule 12, Whittlesea Planning Scheme)

In the preparation of Hayston Valley Estate Development Plan, a comprehensive site analysis has been undertaken which has identified site features, site attributes, constraints and opportunities. This information, together with the vision and design principles established in the Harvest Home LSP have formed the basis of the design philosophy and the consequent preferred urban form proposed for the subdivision and development of this land. This design framework will inform the subsequent assessment of subdivision applications in terms of Clause 56 of the Whittlesea Planning Scheme.

1.3 Development Plan Content

This report, together with accompanying plans, comprises the Hayston Valley Estate Development Plan. This residential estate is an initial stage of development of the proposed residential development as described in the Harvest Home LSP. This report details the background information and site assessments from which this Development Plan has been prepared.

Matters addressed in this report include:

- Description of site characteristics and site analysis
- Relationship with surrounding neighbourhood and areas of potential integration
- Summary of strategic context
- Detail of the design philosophy of Hayston Valley Estate Development Plan and description of the urban form of the proposed residential community
- Review of the open space, recreation and community services to be provided
- Analysis of the traffic network and identification of the likely impact from Hayston Valley Estate Development Plan on the surrounding road network
- Assessment of the site's environmental and heritage characteristics
- Summary of infrastructure services and the manner in which they are to be provided
- The application of development contributions

Associated plans, forming part of the Hayston Valley Estate Development Plan include:

- Development Plan (Subdivision Layout Plan)
- Street Tree and Landscape Master Plan
- Existing Conditions and Site Analysis Plan
- Road Hierarchy Plan

A complete, detailed summary of all plans is provided in the List of Figures to this report.

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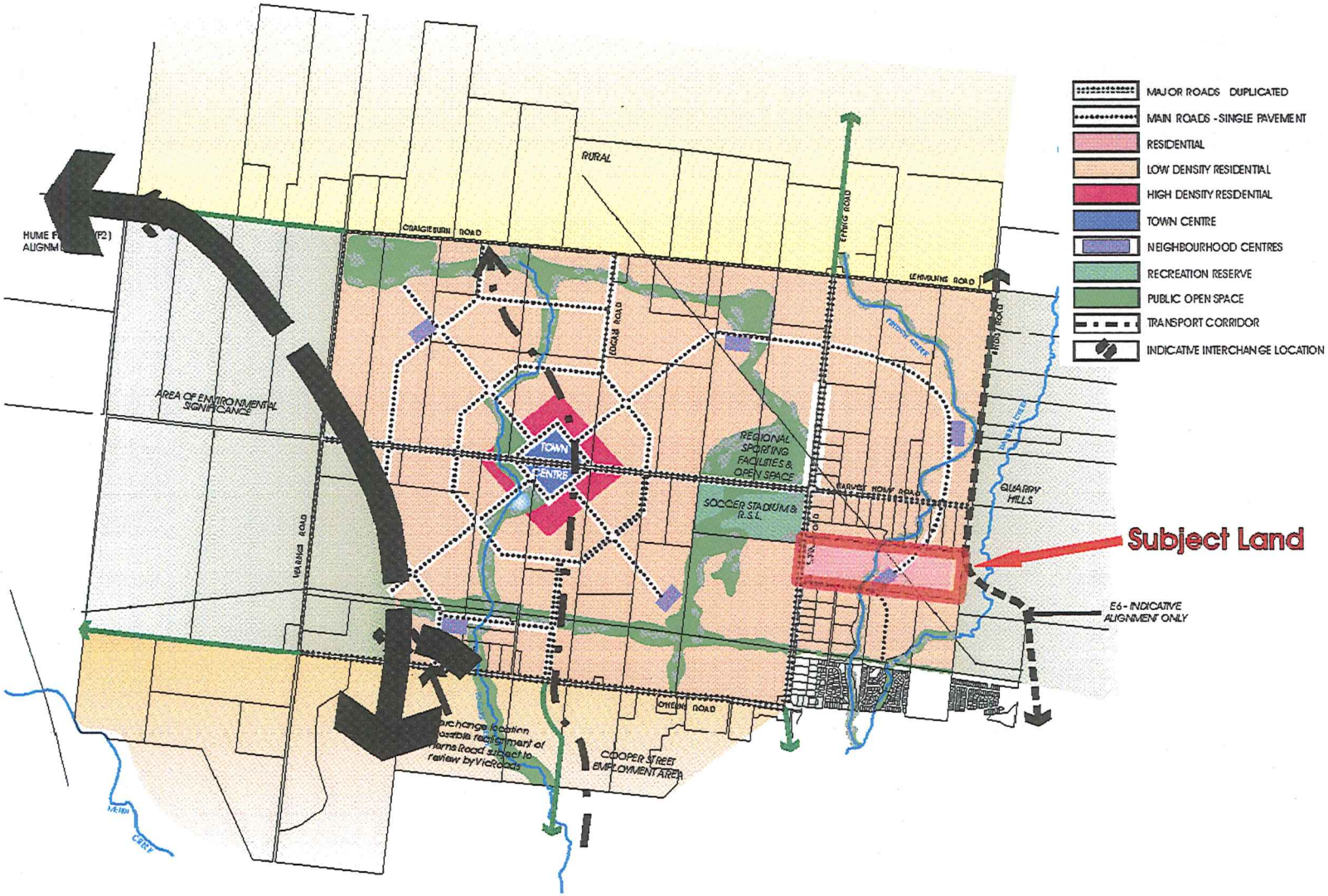

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Figure 1: Site Location Plan

2.0 Planning and Policy Context

2.0 Planning and Policy Context

2.1 Regional Planning Context

Epping North has been identified as a designated residential growth front to serve the future residential demand within both the Melbourne regional and the local Whittlesea context. Various Council policy statements and planning documents culminated in the adoption of Amendment C12 to the Whittlesea Planning Scheme in September 2002. Amendment C12 introduces the overall strategic direction and plan for Epping North, together with the detailed framework for development (in the form of Local Structure Plans) within two precincts within this growth area.

The area's opportunities and constraints and the associated general principles for urban development within Epping North, as identified in the Epping North Strategic Plan, have guided and form the basis of these local structure plans. This framework reflects the objectives of the Epping North Strategic Plan that seek to ensure a co-ordinated approach in the planning for and provision of residential development, local employment, infrastructure, public facilities and open space.

Hayston Valley Estate Development Plan area is located within the Harvest Home LSP (HHLSP).

2.2 Local Planning Context

The Harvest Home LSP (Figure 2) provides the guiding framework against which the Hayston Valley Development Plan is required to be designed and developed. The location of major land uses and development criteria have been established in the HHLSP on the basis of the principles of the Epping North Strategic Plan. The function of the Development Plan (Development Plan) is to detail the subdivision design and to provide a master plan for the issue of planning permits for subdivision.

Hayston Valley Development Plan is one of the initial residential neighbourhoods to be developed within the HHLSP area. The LSP area (shown in the Aerial View of the Site, Figure 3) is generally bound by Harvest Home Road to the north; Epping Road to the west; the high tension power transmission easement to the south (at approximately 350 metres north of Findon Road); and a boundary approximately 100 metres to the west of the Darebin Creek.

The vision for the HHLSP is to plan and manage development in an integrated manner, having regard to both the local and city wide context, in order to facilitate the creation of a vibrant, attractive and effective new residential community.

The objectives of the LSP include:

- *To ensure that the development of this LSP area is co-ordinated and integrated with the proposals for the adjacent LSP areas, as expressed in the Epping North LSP and the Epping North Strategic Plan*
- *To ensure that the Harvest Home community is integrated with the existing Epping community by appropriate physical connections to the south of the plan area*
- *Retain the natural and cultural features of the plan area in future development*
- *To incorporate identified landscape/natural features such as River Red gums, rock walls, watercourses and rocky rises into the subdivision design*
- *To conserve, enhance and manage the aesthetic, recreational, environmental and water quality of the Findon and Darebin Creeks*
- *To protect features of environmental significance and local character by adopting a sensitive approach to subdivision design, especially within areas of "sensitive design"*
- *To provide a range of housing opportunities to meet the housing needs of the whole community*
- *To ensure that the development is energy efficient in respect of site layout and transport options*
- *To make provision for identified community service requirements to ensure the establishment of an appropriate community infrastructure*
- *To provide a framework for the co-ordinated and timely provision of physical infrastructure*
- *To minimise the impact of the transmission easement on residential development*
- *To provide a framework for the identification and collection of development contributions.*

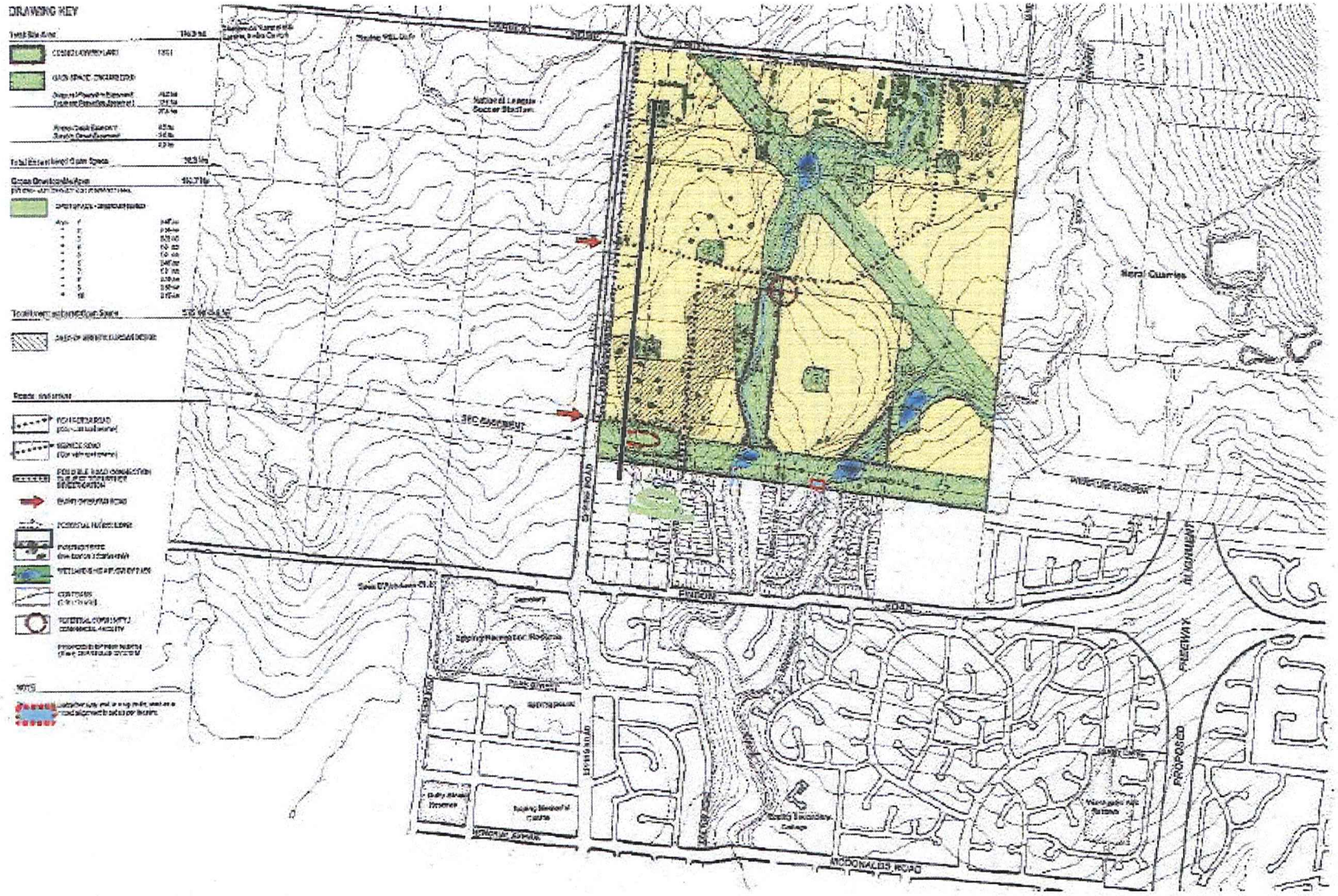

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Figure 2: Harvest Home Local Structure Plan

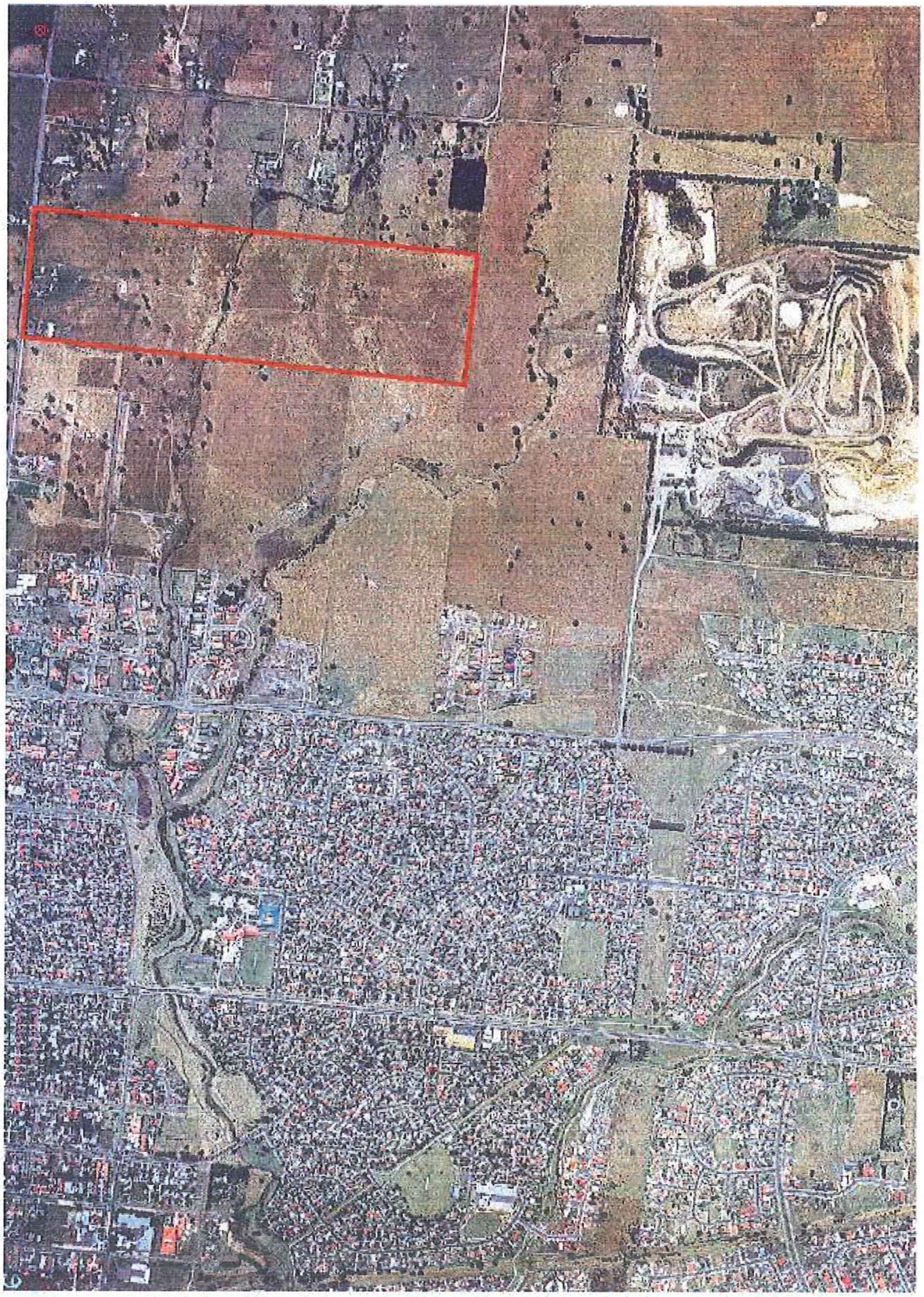

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Figure 3: Aerial View of Site

3.0 Site Analysis

3.0 Site Analysis

3.1 Site Description

Hayston Valley Development Plan comprises two individual title areas, representing a total area of 40.51 hectares. The land is located approximately 220 metres south of Harvest Home Road. It is rectangular in shape, with a frontage of approximately 350 metres to Epping Road. A portion (some 280 metres) of the Development Plan areas southern boundary adjoins Reynard Street. Brush Road, within which a number of properties have been developed for rural residential purposes, adjoins Reynard Street. A government road reserve abuts the northern boundary (this road reserve has been included in an amended title for the property at 110 Epping Road, Epping).

Findon Creek reserve extends in a north-south direction through the Development Plan (Figure 4, Site Analysis). An established residential neighbourhood (Findon Road/Maserati Drive) is located some 550 metres to the south. A range of community and commercial facilities (including schools, retail centre, hospital, and recreation reserves) are located within the residential communities to the south, serving the wider Epping district.

3.2 Zoning and Encumbrances

The Development Plan area is subject to the following planning provisions:

- Residential 1 Zone
- Development Plan Overlay – Schedule 12
- Vegetation Protection Overlay – Schedule 2
- Development Contributions Plan Overlay – Schedule 1
- Heritage Overlay – Schedule 7 (to be removed)

A 110 metre wide PowerNet easement traverses the Development Plan area in a generally northwest-southeast direction. Within this easement there are two pylons supporting transmission lines.

The Findon Creek easement is central located through the Development Plan area on a north south alignment. This easement and the transmission easement share common ground adjacent to the northern boundary of the DP area.

3.3 Landform

The Development Plan area is gently undulating with Findon Creek forming a depression (of approximately 3 to 4 metres) generally in the middle of the site. The land rises to Epping Road.

The land has been used for grazing purposes. Pastoral use of the area is evidenced with the existence of dams and farm buildings.

3.4 Access

The only vehicular access to the land is currently from Epping Road. Primary access to Hayston Valley Development Plan is to remain from Epping Road. However, it is proposed, as part of the development of this Development Plan, that secondary road links are established, both to the north and south. These links are in line with the overall pattern of development set out in the HHLSP and seek to encourage an integrated Harvest Home community.

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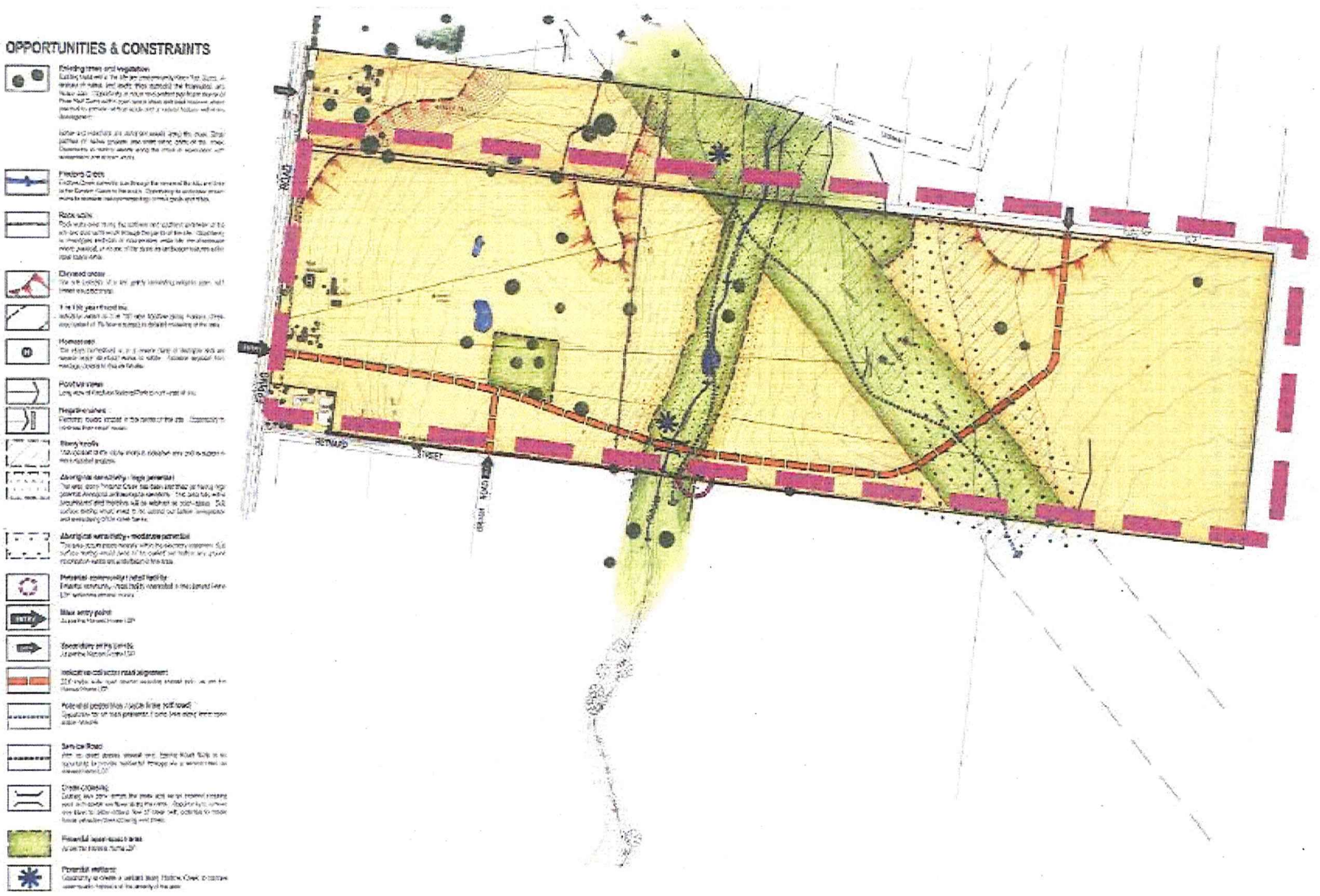

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Figure 4: Site Analysis

4.0 The Plan

4.0 The Plan

4.1 Urban Design Vision

The vision for the development of this Development Plan is wholly consistent with the principles of the HHLSP. This northern area of the City is acknowledged as containing features of environmental importance, the retention and maintenance of which has the opportunity to add to the area's character and identity (refer Figure 5). The Hayston Valley Estate Development Plan has therefore sought to identify the land's key environmental features from which the estate's sense of place and community is to be developed.

The River Red Gum trees, Findon Creek valley, gently undulating topography and long views to the ranges are the key features that together provide the site with its unique character. The vision is for these elements to be retained and enhanced to create an estate characterised by majestic River Red Gums, wetlands and informal parkland.

The MSS identifies the need for urban design principles to ensure that new development is responsive toward incorporating local environmental features. An integrated urban and landscape design process ensures that these features are retained. The fundamental design objectives for the Hayston Valley Estate are as follows:

- To retain and protect the existing River Red Gum trees
- To incorporate or interpret features of natural and cultural significance
- To retain the integrity of the topography and integrate viewlines
- To reshape and rehabilitate the Findon Creek and introduce a series of informal wetlands
- To provide a coherent and permeable subdivision layout
- To provide a variety of safe and accessible open spaces
- To minimise the visual impact of the transmission line easement and pylons
- To provide an identified site within the Development Plan for local neighbourhood/retail facilities
- To provide a diversity of lot sizes and housing types

4.2 Principal Elements

The vision will be implemented in accordance with design principles that respond to site features, as identified within the site analysis process. Accordingly, the urban design concept for Hayston Valley Estate incorporates the following features:

To retain and protect the existing River Red Gum trees

The value of the site's vegetation is recognised. All healthy, structurally sound and significant River Red Gum trees are to be retained in parkland, reserves or residential allotments. Dead or unhealthy River Red Gums trees proposed for removal (of which only 4 of the 24 on site are proposed to be removed) are to be reused for habitat at the edge of the wetland. Two of the trees to be removed are located within land designated for the future road widening of Epping Road.

In instances where trees are proposed for retention within residential allotments, the lot will be increased in size (in some cases double the standard lot size) to allow adequate space for a house to be built outside the trees canopy and root zone. The trees will be protected through the identification of tree protection zones and building envelopes. This will ensure that buildings and works occur outside the trees' critical root zones and no harm is incurred to the trees' natural longevity or health. At the subdivision stage the location of the trees and their canopies will be refined relative to allotment boundaries.

To incorporate or interpret features of cultural and natural significance

The design will recognise the existing natural and cultural features of the site including the River Red Gums, Findon Creek, dry stone walls, and the Hay's homestead site.

Where practical these features will be retained in the landscape as a reference to the natural or cultural heritage of the site. In cases where the retention of existing natural and cultural elements is not practical because of their state of decline or health, these elements will be sensitively reconstructed (in their original or in a contemporary form), reused or featured in interpretive signage.

To retain the integrity of the topography and integrate view lines

The road layout, lot orientation and location of open space will respond to the topography of the site. Roads will be aligned to minimise the need for cut and fill; respond to the natural drainage flows of the site; channel view lines to surrounding ridges and highpoints; and provide a variety of visual experiences while travelling through the estate.

Lots will be orientated to maximise external views to the proposed Quarry Hills regional parklands and other future parks and reserves within the estate, while directing views away from the power transmission lines and pylons.

Open space within the estate will be located on both high points and valleys, and will be designed to provide visual and physical linkages to adjacent open space areas.

To reshape and rehabilitate the Findon Creek reserve and introduce a series of informal wetlands.

The Findon Creek flows centrally through the site in a north south alignment. The creek and valley will be retained in a linear open space reserve and will incorporate a series of wetlands, pool and riffle treatments to improve the quality of the water and provide a habitat for native fauna.

To provide a coherent and permeable subdivision layout

The layout is a modified grid pattern of subdivision that enables permeability throughout the estate and promotes positive views and vistas. The modified grid will also be responsive and respectful to the topography of the site, the location of existing significant trees and view lines.

The road layout provides connection to the existing Brush Road and Maserati Drive to the south, while providing indicative road links to all adjacent land holdings. A distinctive landscaped boulevard will provide a spine through the development and will connect the development plan area to the north and south.

The layout to the east of the transmission easement provides for some flexibility in order to respond to Council's requirements for adjacent areas.

Informal paths and trail system will link open spaces within the estate and will provide for linkages to future adjacent parks and reserves.

To provide a variety of safe and accessible open spaces

The concept will provide a variety of open space experiences including local parks, linear parks, creek reserves and informal parklands incorporating play areas, picnic and BBQ facilities. Areas of open space will complement the proposed abutting open spaces in use and type.

Where lots abut areas of open space, these lots will front the open space in order to increase natural surveillance and improve outlook from residences.

To minimise the visual impact of the transmission line easement and pylons

The visual impact of the transmission line easement and pylons will be minimised by:

- Mounding and earthworks within the easement
- Providing a setback for street trees and buffer planting outside the edge of the easement
- Providing a variety of edge treatments and setbacks adjacent to the easements
- Providing additional open space adjacent to the transmission easement
- Introducing a shared pathway, planting, stone walls and other landscape elements within the easement

To provide an identified site within the Development Plan area for local neighbourhood/retail facilities.

A 960m^2 site has been set-aside on the main collector road/ boulevard for a future neighbourhood/retail facility. The site will overlook the proposed wetland and Findon Creek reserve and will be easily accessed by road or path.

To provide for diversity of lot size and housing type

The concept incorporates lot sizes ranging in area from 240m^2 to 1000m^2, with an average lot size of 580m^2. A mixture of lot frontages and depths has been provided in order to cater for a variety of single and double storey housing opportunities.

Medium density house lots are concentrated around open space areas, with larger lots located adjacent to Epping Road and the main collector road/boulevard. Medium density housing will include both rear and front access lots; terrace and duplex housing; semi detached; and attached housing.

The majority of lots are orientated in an east west and north south alignment in order to provide maximum passive solar access.

Summary

The vision for Hayston Valley Estate will be achieved by way of appropriate infrastructure and technology; building design and guidelines; landscaping treatments; open space and community facility integration; housing diversity; and integration with the future adjacent community.

4.3 Land Budget

The Hayston Valley Estate Development Plan covers an area of 40.51 hectares. Land within the transmission easement and Findon Creek reserve reduce the developable area to 33.28 ha, as detailed in Table 1 over the page.

A lot yield of approximately 375 lots is proposed. On the basis of an average household size of 3.3 persons per household, a population in the order of approximately 1,240 persons is projected to be accommodated within Hayston Valley Estate.

Table 1: Land Development Analysis

SITE AREA		**40.51Ha**
Includes entire development plan area, additional land to be claimed in the unused road reserve and proposed Epping Road widening)		
Encumbered Land		**7.23Ha**
Transmission line easement	*5.65 Ha*	
Drainage reserve (as determined by MW)	*1.58 Ha*	
GROSS DEVELOPABLE AREA		**33.28Ha**
Open space allocated in HHLSP		**0.75Ha**
Area 3 (Reserve A in DP)	*0.35 Ha*	
Area 7 part (Reserve C in DP)	*0.40 Ha*	
Road Widening (Vic Roads land)		**0.31Ha**
NET DEVELOPABLE AREA		**32.22Ha**
Residential		**30.43Ha**
Neighbourhood / Retail Facility		**0.096Ha**
Open space to be provided in excess of HHLSP requirements		**1.69Ha**
Reserve A (total area of 1.08)	*0.73 Ha*	
Reserve B	*0.17 Ha*	
Reserve C (total area of 0.27)	*-0.13 Ha*	
Reserve D	*0.09 Ha*	
Findon Creek easement (above MW requirements)	*0.83 Ha*	

NOTE: Development contributions are payable on the Gross Developable Area and will be payed in accordance with schedule 2 of Clause 45.06 of the Whittlesea Planning scheme.

Minor adjustments to this table may be made at the subdivision stage including confirmation of the extent of the Findon Creek Reserve.

4.4 Housing

Demographic assessments and associated housing strategies have been undertaken within the City of Whittlesea, as detailed in the HHLSP. These studies indicate that increasingly there is a need for a wide range of housing alternatives to satisfy the various housing markets present within the City. These include the need for rental housing; singles housing; hostel and shared accommodation facilities, including retirement villages; in addition to the predominant housing type of the 3 to 4 bedroom detached house.

In response to the needs of a 'diverse and changing population', the Hayston Valley Estate Development Plan provides the opportunity for housing diversity by identifying areas that are potentially suitable for medium density housing. Diversity of housing is considered essential to both cater for these various demands and to create 'interest and identity' within this new urban environment.

4.5 Display Village

A display village is to be established within Hayston Valley Estate Development Plan to attractively and conveniently demonstrate the range of housing types and styles available for construction within the community (refer Figure 5). A separate planning permit will be sought for this proposal, which is to accommodate in the order of 21 display homes. The display village will form an important part of the initial stage of development of this Development Plan and of the wider Harvest Home LSP community. It will provide a focal point for prospective purchasers and the future residential community. It is intended that this area include a temporary sales office and café for the public. Appropriate car parking and landscaping will be provided.

4.6 Landscape Architectural Vision

The urban and landscape design at Hayston Valley Estate draws much of its inspiration from its immediate environment. The existing River Red Gum trees, Findon Creek valley, dry stone walls and the distinctive design and character of the original homestead, buildings and surrounding grounds provided the design team with a ready design palette to interpret through contemporary design solutions (Figure 8).

The fundamental landscape architectural design objectives are to:

- Create a sense of place and identity deriving from the natural and cultural heritage.
- Retain and protect all healthy and stable remnant River Red Gum trees.
- Establish parkland that provides for habitat protection and creation, such as wetlands and revegetation of indigenous flora.

- Promote the use of high quality potentially locally sourced natural materials such as timber and stone in conjunction with steel in creative and contemporary design.
- Create diverse recreational opportunities throughout the estate.
- Encourage appreciation of the natural and cultural environment through interpretation facilities.
- Adopt environmentally sensitive design principles with emphasis on ensuring adequate water is maintained for all existing River Red Gum trees.
- Introduce streetscape planting that will reflect the natural and cultural history; improve legibility of the street network; and provide a variety of colour, form and texture through the seasons.

Stone, steel and timber form the base materials that will shape the landscape theme of the estate. These three materials have been selected for their link to the natural and built elements of the site, and will feature at the entry to the estate, in the open space and streetscape.

Hays Homestead, an historic building of the 1850s, is located on the site. The restoration of the building is not feasible given its very dilapidated state and its location adjacent to the proposed widening of Epping Road. Measures to preserve the heritage value of this building by means of an archaeological and photographic record, an archaeological investigation and interpretative displays will be undertaken to ensure the continued recognition of the value of the homestead to the local community. Interpretive signage and other displays such as panels, reconstructions of components of the homestead and related landscape elements will be featured in the main area of public open space, approximately 150 metres to the east of the existing site. The detailed design of the interpretation will be determined following the archaeological and photographic record of the homestead.

Stonewalls will take on a contemporary interpretation of the dry stone walls and have been designed with a diagonal form to create a sense of merging or subsiding into the ground. Core Ten steel beams will be incorporated into the walls to form a spine along their edge and provide a link to the rusted panels in the homestead. The walls overall scale will be modified to respond to its use or function in the landscape (i.e. retaining walls, seating wall, entry feature, fence). However the proportions of the triangle will remain the same.

Norfolk Island Pines will be introduced to provide nodal punctuations along the main road and are reminiscent of the trees often planted around early farm buildings. The other street tree plantings have been selected to complement the River Red Gums and Norfolk Island Pines, while also reinforcing the legibility of the road network and to provide a varied experience for the traveller.

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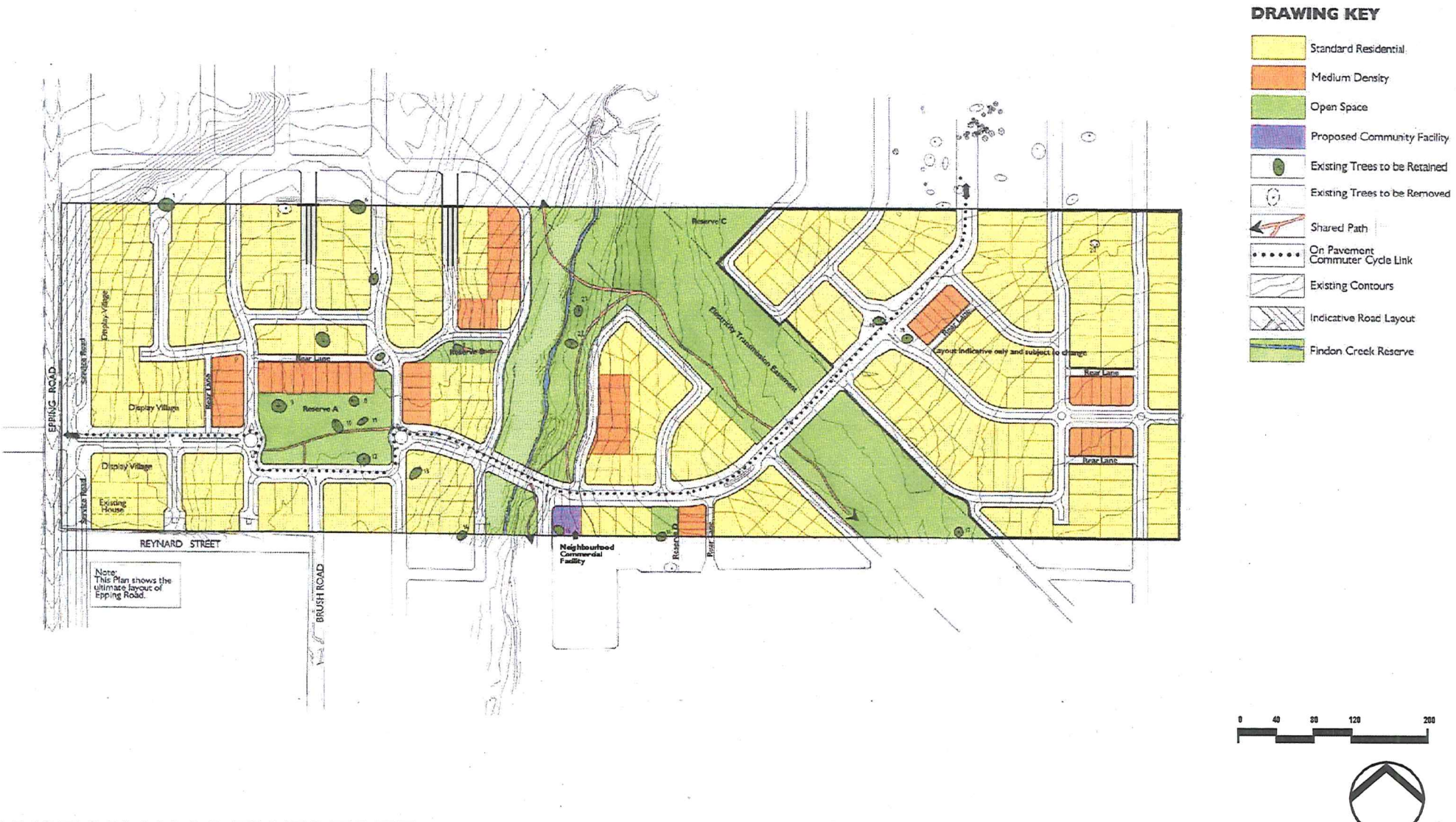

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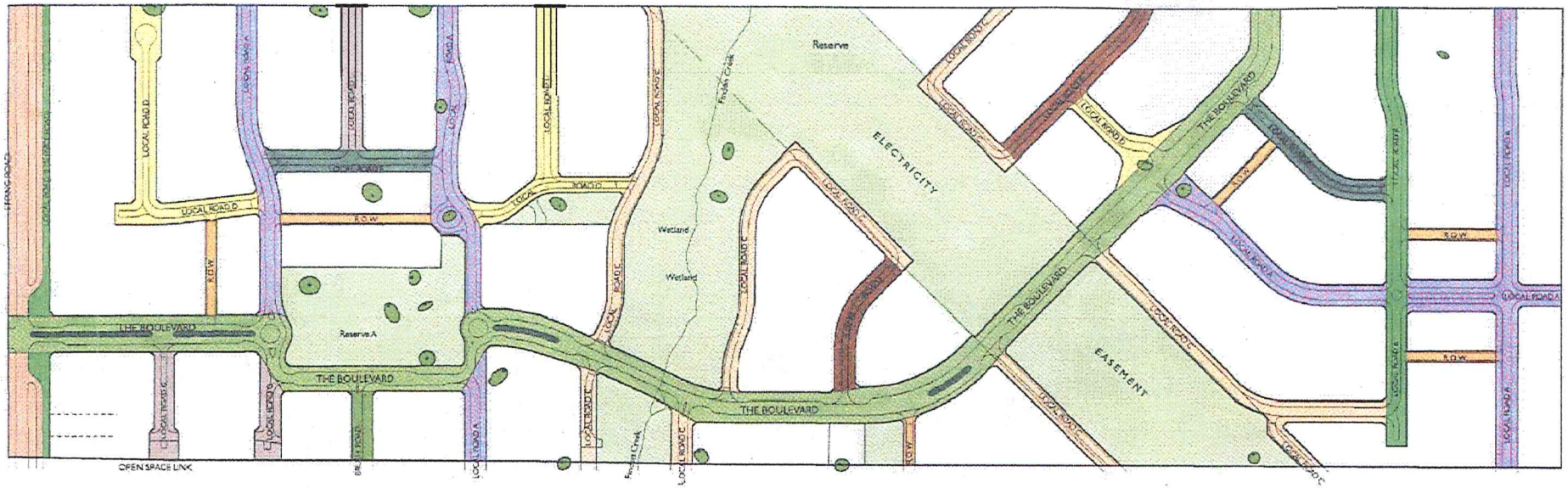
Figure 5: Development Plan



EPPING ROAD
Angophora costata (Smooth Barked Apple Gum)

BOULEVARD
Corymbia citriodora (Lemon Scented Gum) in nature strip.
Araucaria heterophylla (Norfolk Island Pine) in central median.

BRUSH ROAD
Lophostemon confertus (Brush Box)

LOCAL ROADS A
Melia azaderach (White Cedar)

LOCAL ROADS B
Schinus molle (Peppercorn)

LOCAL ROADS C
Allocasuarina verticillata (Drooping Sheoak)
Eucalyptus pulchella (White Peppermint)

LOCAL ROADS D
Acacia melanoxylon (Blackwood)

LOCAL ROADS E
Allocasuarina littoralis (Black Sheoak)

LOCAL ROADS F
Eucalyptus leucoxylon 'Megalocarpa'
(Yellow Gum variety)

LOCAL ROADS G
Olea europaea (Common Olive)

LANES/R.O.W.
Citrus limon 'Eureka' (Lemon)
Citrus aurantium (Seville Orange)
Lagerstoemia indica 'Tuscarora' (Crepe Myrtle)
Malus spectabilis 'Plena' (Crab Apple)
Pyrus calleryana 'Chanticleer' or 'Aristocrat' (Pear)

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Figure 6: Street Tree Master Plan

Road Precinct / Type / Rationale	Key	Common name	Botanical name	Type	Native / exotic	Height x spread	Form	Growth Rate	Suitability
EPPING ROAD									
TYPE: *Arterial* RATIONALE: Epping Road will ultimately be an arterial road with a 40.0 metre wide road reserve. The street trees proposed along Epping Road are large, strong in form and character and have been chosen to the scale of the road, be viewed at high speeds and create a strong gateway into the municipality		Smooth Barked Apple	*Angophora costata*	E	native	15-20m x 6-10m	Irregular	Fast	High
BOULEVARD									
TYPE: *Arterial* RATIONALE: The boulevard forms the major traffic spine within the Harvest Home area. The trees proposed along the boulevard must have been chosen to improve legibility while traveling through the estate and to create a strong avenue effect. Norfolk Island Pines shall be planted in the medians to provide a strong entry statement., in medians of 5m width.		Lemon Scented Gum	*Corymbia citriodora*	E	native	15-20m x 6-10m	Irregular	Fast	Medium/High
		Norfolk Island Pine	*Araucaria heterophylla*	E	exotic	30m x 8-10m	Conical	Fast	Medium/High
BRUSH ROAD									
TYPE: *Collector* RATIONALE: In conjunction with the boulevard, Brush Road will form the function of a collector road to the southern Harvest Home area. The Brush Box has been chosen along this road for it's large compact form, dense foliage and its ability to contrast with other native trees in the area. This tree also compliments the existing name of the road.		Brush Box	*Lophostemon confertus*	E	native	10-15m x 6-8m	Compact round canopy	Moderate	Low/ Medium
LOCAL ROADS A									
TYPE: *Local and service* RATIONALE: White Cedar has been chosen to define the main north south links with the site. It will provide contrast to the trees along the boulevard while still maintaining a strong character that contrasts with the eucalypts proposed along the other local roads.		White Cedar	*Melia azaderach*	D	native	8-10m x 7m	Broad crowned	Fast	High
LOCAL ROADS B									
TYPE: Service RATIONALE: As a heritage tree the Peppercorn has been chosen to define the secondary north south links. Note: Treelogic advise that 3.35m nature strip is adequate.		Peppercorn	*Schinus molle*	E	exotic	9-15m x 5m	Rounded weeping	Fast	High
LOCAL ROADS C									
TYPE: *Edge* RATIONALE: The White Peppermint has been chosen to frame the open space and parkland within the Findon Creek Reserve and electricity easement. This tree is strong in form.Drooping Sheoaks shall form nodal plantings where the streets terminate at open space.		White Peppermint	*Eucalyptus pulchella*	E	native	10-15m x 8-10m	Taller than wide	Fast	High
		Drooping Sheoak	*Allocasuarina verticillata*	E	native	10 m x 6m	Irregular	Fast	High
LOCAL ROADS D									
TYPE: *Local* RATIONALE: Blackwood trees naturally occurred on the site and grew in association with River Red Gums – this association is reinforced as remnant River Red Gums exist along local roads D.		Blackwood	*Acacia melanoxylon*	E	native	20m x 6m	Conical	Fast	High
LOCAL ROADS E									
TYPE: *Local* RATIONALE: This tree has been chosen to define the roads that lead into the electricity easement.		Black Sheoak	*Allocasuarina littoralis*	E	native	9m x 6m	Irregular conical crown	Fast	High
LOCAL ROADS F									
TYPE: *Local* RATIONALE: This tree has been chosen to define the east-west links within the estate.		Yellow Gum	*Eucalyptus leucoxylon 'Megalocarpa'*	E	native	10-15m x 5-7m	Compact	Fast	High
LOCAL ROADS G									
TYPE: *Local* RATIONALE: Copses of olive trees have been chosen for the local cul-de-sacs. Outstands to be provided to allow for greater space for planting copses.		Common Olive	*Olea europaea*	E	exotic	6m x 6m	Compact	Slow	High
LANEWAYS									
TYPE: *Lane/ROW* RATIONALE: Small trees have been chosen to be planted in the laneways to provide colour and light foliage in a predominantly hard paved area. A different species for each laneway is proposed, providing seasonal flowers and fruit.		Lemon	*Citrus limon 'Eureka'*	E	exotic	7m x 3m	Dense	Moderate	Medium (specify heavy soil stock)
		Seville Orange	*Citrus aurantium*	E	exotic	5m x 3m	Dense	Moderate	Medium (specify heavy soil stock)
		Crepe Myrtle	*Lagerstroemia indica 'Tuscarora'*	D	exotic	4m x 3-4m	Broad crowned	Moderate	High
		Betchel's Crab Apple	*Malus spectabilis 'Plena'*	D	exotic	6-9 x 6m	Round crown	Moderate	Medium/High
		Pear	*Pyrus Calleryana 'Chanticleer' or 'Aristocrat'*	D	exotic	11m x 8m	Narrow crown	Fast	High

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HAYSTON VALLEY ESTATE

Figure 8: Landscape Master Plan

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Figure 8a: Sketch of Entry Treatment

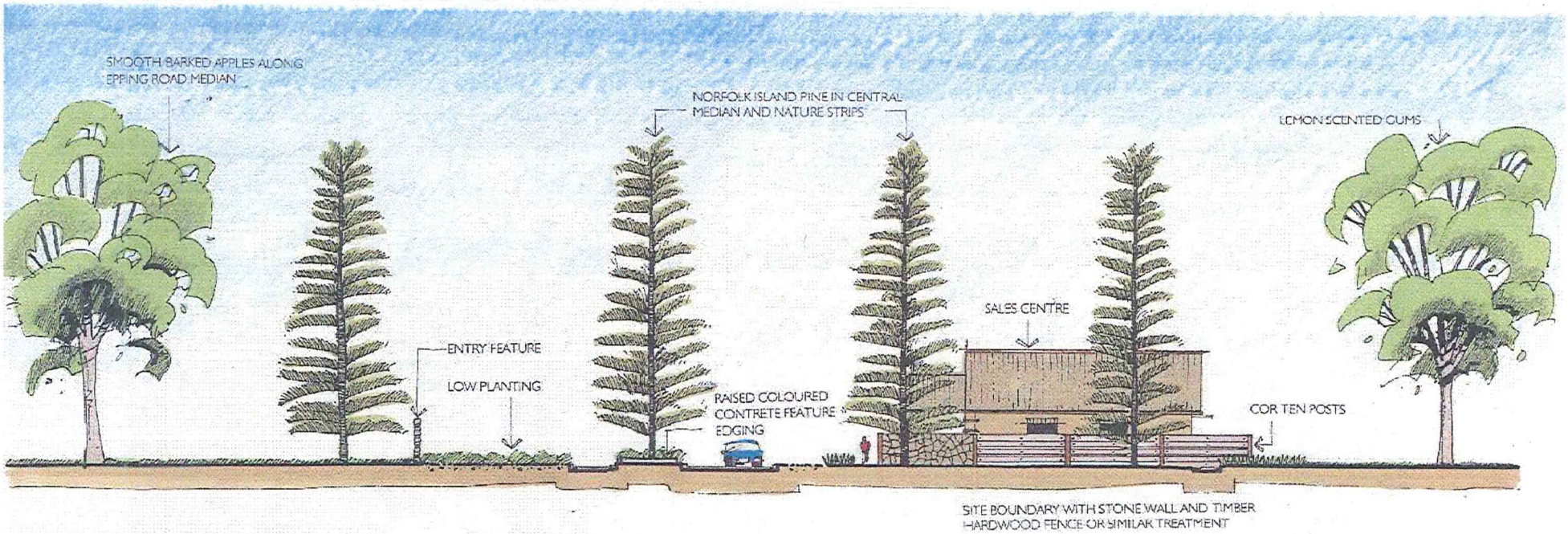

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Figure 8b: Epping Road Entry

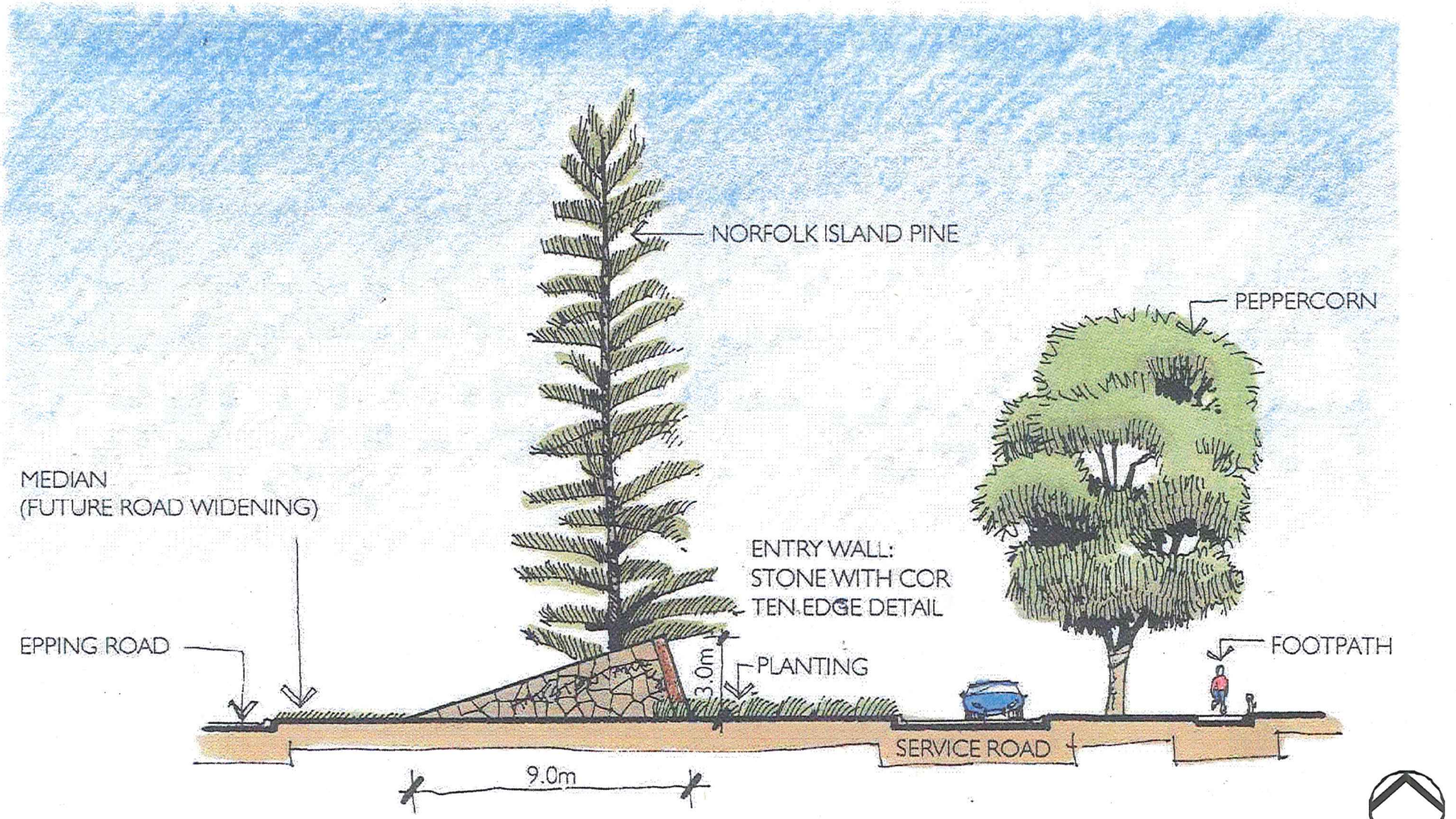

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Figure 8c: Epping Road Entry

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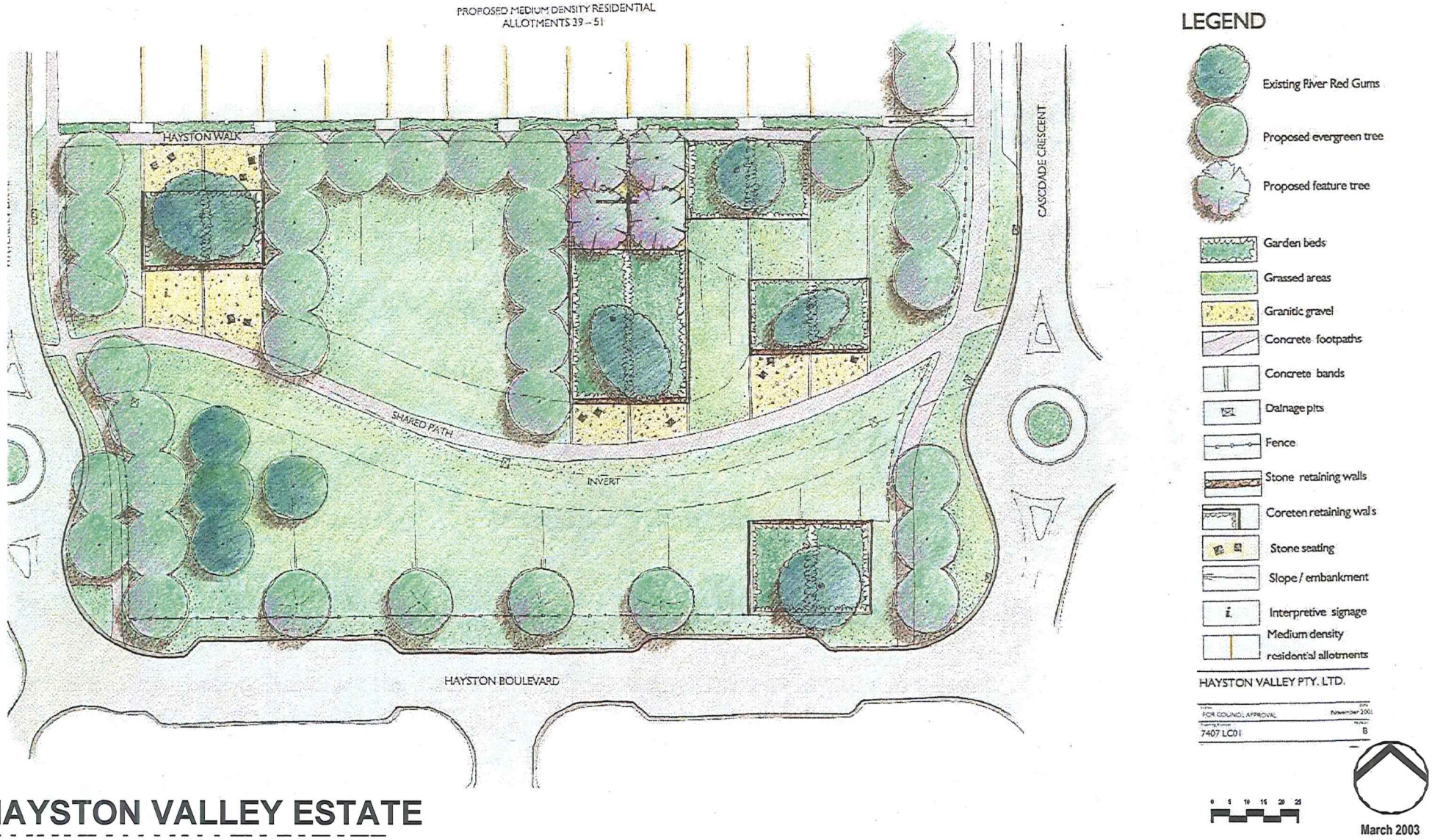

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Figure 8d: Reserve A Sketch Design

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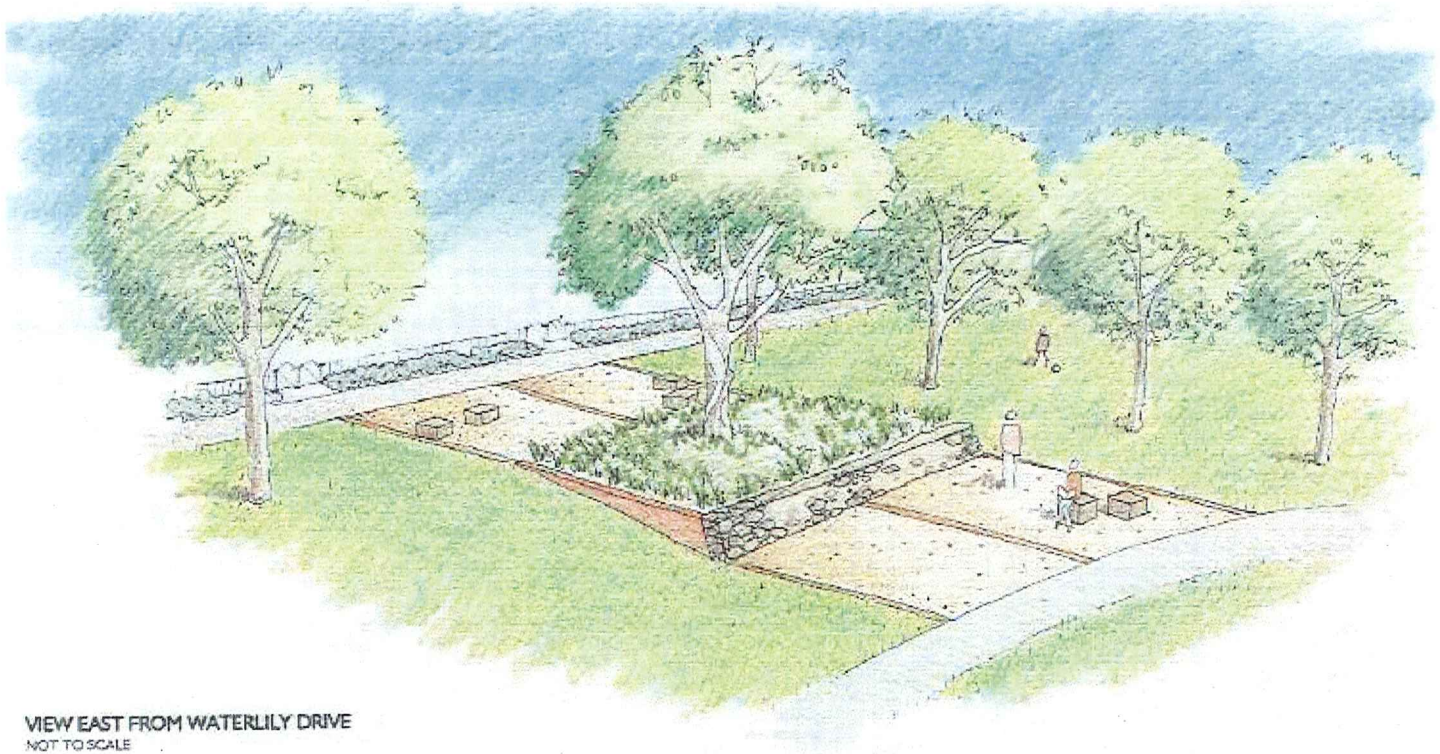
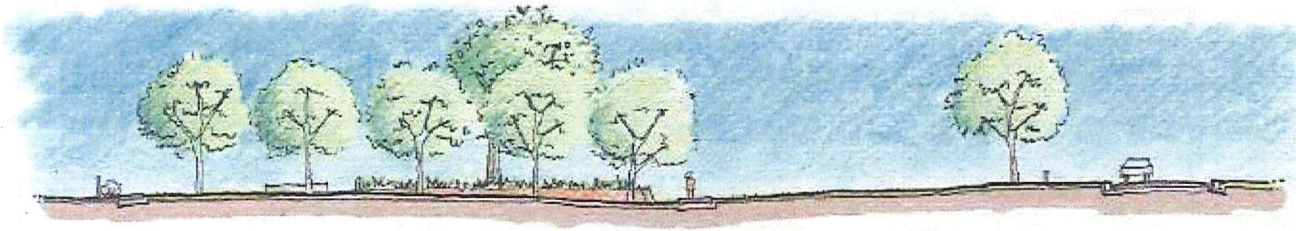


VIEW EAST FROM WATERLILY DRIVE
NOT TO SCALE



TYPICAL SECTION THROUGH PARK

HAYSTON VALLEY PTY. LTD.

FOR COUNCIL APPROVAL	November 2002
7407 LC03	B

HAYSTON VALLEY ESTATE STAGE 1

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Figure 8e: Reserve A Sketch Design (View and Section)
FINDON PARK SKETCH DESIGN

Coomes

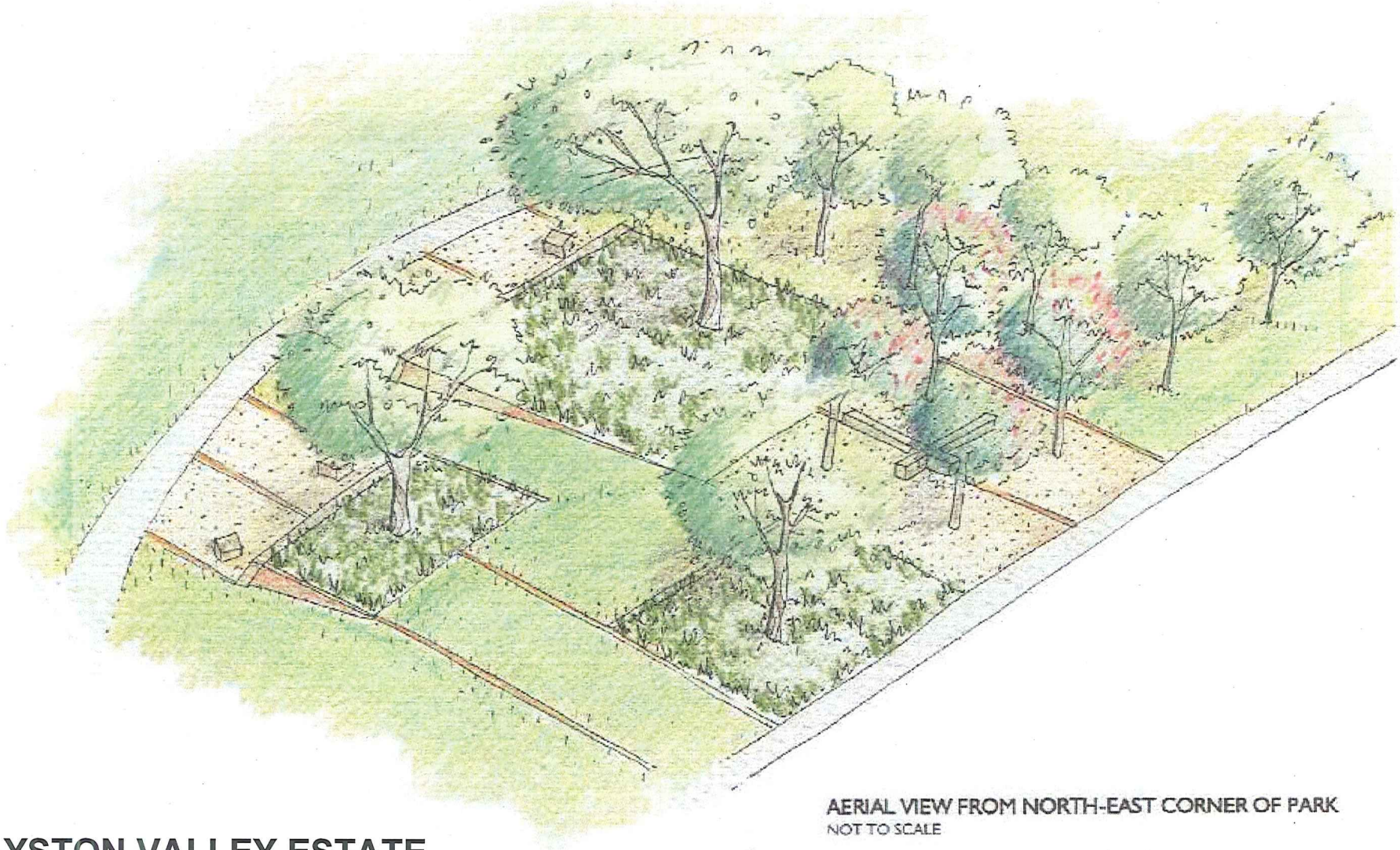

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Figure 8f: Reserve A Sketch Design (Aerial View)

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HAYSTON VALLEY ESTATE

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Figure 8g: Findon Creek & Reserve B

5.0 Ecological Assessment

5.0 Ecological Assessment

5.1 Flora and Fauna Habitat Significance

The HHLSP seeks to ensure that the existing natural environment is carefully considered in the Development Plan process. A flora and fauna assessment of the subject land has previously been undertaken as part of the HHLSP investigations. This report (Flora and Fauna Assessment of Land East of Epping Road, Epping, Victoria, A.J. Hill and L.M. Williams, 1999, Project No. 1433, Biosis Research) has shown that the subject land has been significantly altered from its original condition. Due to past land use practices, vegetation throughout most of the Development Plan area has now been significantly altered from its original condition and is now dominated by introduced pasture and weed species. This condition is typical of much of the Development Plan area.

Previously the site would have supported the following Ecological Vegetation Classes:

- Plains Grassy Woodland dominated by River Red Gums
- Stony Knoll Shrubland along the elevated rocky rises

No species of National or State conservation significance have been recorded within the HHLSP area. However, 14 species of Regional significance were identified within and adjacent the HHLSP area. The majority of these occupy the Darebin Creek corridor and Findon Creek south of the Development Plan areas.

The following areas have been assessed as having 'High Local' conservation significance:

- *Rocky Rises*: Although highly modified, these features retain some fauna habitat values. Most of the rock structure is still intact and soil has not undergone the physical disturbance to the same extent as surrounding areas. Within the Development Plan, these ares predominately occupy the high voltage power transmission line easement.
- *Scattered River Red Gums*: (refer below)
- *Stone walls*

The HHLSP provides the following conservation management objectives:

- Provision of contiguous habitat links
- Incorporation of River Red Gums into the open space network.
- Weed control and revegetation to increase ecological values
- Management of impacts caused by pest animals including domestic animals
- Fencing of sensitive sites so that public access can be managed.

- Revegetation of the watercourse areas as part of subdivision and landscape plans in order to create a visual feature, complement existing vegetation, and provide fauna habitat.
- Community education to inform future residents of environmental values and appropriate planting species
- Promotion of the use of indigenous and other native species in private landscaping (particularly in areas close to waterways) as part of sales information and estate marketing

These objectives will be realised in the Hayston Development Plan in the following ways:

River Red Gum Trees

A detailed tree assessment has been undertaken for the Development Plan area ('Trees at Hay Property – Epping North', Rob Galbraith & Associates, January 2000). Approximately half (24) of these species comprise mature River Red Gums (some of which are possibly more than 250 years old). Despite the aged condition of many of the trees, the consultants have stated that they still have very long, safe and useful life expectancies. The remaining trees comprise unsubstantial exotic species.

The Development Plan is able to retain all viable River Red Gums with the exception of four trees. Of these trees to be removed, one is in poor condition with a thin and dying crown and extensively decayed trunk in danger of failure. The other tree is also extensively decayed and only has an estimated lifespan of 10 years. A further two young River Red Gums at the front of the site will need to be removed as part of the future widening of Epping Road. Of the trees to be retained only four are to be incorporated into large residential allotments. The balance have been integrated into public open space (10) or within extended road reserves (5).

The trees will be protected and managed in accordance with Council's River Red Gum Protection Policy forming part of Clause 22.10 of the Whittlesea Planning Scheme. This will include the erection of exclusion fencing during the subdivision construction stages.

5.2 Waterway Management

5.2.1 Drainage Catchments

The Hayston Valley Estate is located within two distinct drainage catchments.

- The Findon Creek Catchment
- The Darebin Creek Catchment

The Hayston Valley Estate is divided by Findon Creek, which is a first order tributary of the Darebin Creek. The existing catchment is predominantly undeveloped. With an average annual rainfall for the Epping Area of approximately 655mm the stream flow in this waterway is usually intermittent. However, due to the size of the upstream catchment the open waterway may carry large flows during significant storm events.

The Development Plan has considered a number of key waterway management issues; namely stormwater drainage, flood protection, urban water quality and the protection of local and downstream waterways. Using a water sensitive urban design approach, the environmental impact from urban stormwater can be controlled. The principle objectives involve the minimisation of impervious surface areas, flow attenuation and flood retardation, removal of pollutants, retention and creation of habitat areas. To ensure a well-structured and good urban environment these principles need to be integrated with recreational opportunities to achieve the most efficient use of land.

The Findon Creek Catchment

The majority of the development area drains directly to the Findon Creek. A Melbourne Water Drainage Scheme, known as the Findon Creek Drainage Scheme, covers this region. This Scheme, together with the Darebin Creek Waterways Activity Plan (2000), provides guidance relating to development along the waterway.

Discussions have been held with Melbourne Water to determine its specific requirements with respect to water quality and quantity requirements. These are now reflected in the Development Plan and will be refined at the subdivision stage.

The Darebin Creek Catchment

The eastern section of the Hayston Valley Estate falls towards the Darebin Creek. A Melbourne Water Drainage Scheme does not exist for this catchment. As a result this portion of the site is contained within the Plenty Development Corridor. The Darebin Creek Waterways Activity Plan (2000) guides development along the waterway. Either Water Sensitive Urban Design principles or the equivalent treatment by a wetland system be used to treat the stormwater run-off prior to it entering the Darebin Creek.

5.2.2 *Stormwater Attenuation*

The drainage system will be designed to attenuate stormwater flows at strategic locations to optimise the interception, retention and removal of pollutants prior to their discharge to Darebin Creek and Findon Creek. Through flow management, the environmental values and diversity of the watercourses will be preserved and restored. The key is to "break the connection" between pipes and the receiving water.

Melbourne Water has advised that a retarding basin is to be located within the Hayston Valley development. The retarding basin wall will be located at the collector road crossing of Findon Creek. The location at the collector road will maximise the retarding basin volume and reduce the visual impact of the wall by combining it with the road crossing.

5.2.3 *Stormwater Quality Treatment*

A stormwater "treatment train" philosophy will be implemented to control the various types of pollutants expected to be generated within the proposed urban environment. Melbourne Water has advised that a water quality treatment area is required downstream of the development. The treatment system will contain:

- Gross pollutant traps to control litter and coarse sediment
- An off-line wetland to control suspended solids, total phosphorus and total nitrogen. It will incorporate sedimentation and macrophyte systems
- A pipe to carry the 1 in 1 year flows from the development plan area to the water quality treatment area from the development either side of Findon Creek. (Flows exceeding the 1 in 1 flow year will discharge directly to Findon Creek).

5.2.4 *Findon Creek*

Findon Creek will be retained as a natural creek drainage system. The degraded open channel will be restored as a series of pools, riffles, runs and ponds, which will promote the establishment of a healthy and diverse ecosystem.

5.2.5 *Erosion and Sediment Control*

During construction, "best practice" site management practices will be implemented to reduce sediment export from the site. This will typically include silt fences, ponds, socks, hay bales, and similar techniques to minimise the transport of sediments to the drainage lines. The management plan would be prepared in accordance with the EPA guidelines.

5.3 Environmental Audit

A preliminary site inspection and assessment of the Development Plan area has been undertaken by Diomides and Associates in 2002 for the purpose of evaluating potential land contamination issues. Based on their site inspection and a review of the site history and aerial photographs there appears to be no potential on-site contamination sources or hazards likely to cause adverse impact to future residents. More detailed intrusive soil assessment programs have not been recommended based on the site history and the minimal likelihood of soil contamination issues.

6.0 Archaeological/Heritage

6.0 Archaeological/Heritage

A cultural heritage assessment of the subject land has previously been undertaken as part of the HHLSP. This preliminary report: (An Archaeological and Heritage Survey of Land East of Epping Road, Epping North, Victoria, 1999, O.E. Nicolson, Project No. 1453, Biosis Research) examined both areas of potential Aboriginal archaeological significance and European heritage values.

The importance of the acknowledgement and inclusion of heritage features within the urban environment is recognised as contributing to the area's interest, identity and diversity.

The abovementioned survey conducted as part of the HHLSP identified four particular items of European heritage within the LSP area. One of these, the Hays Homestead, is located within Hayston Valley Estate Development Plan area. No aboriginal archaeological sites were recorded in the course of this survey. Rather, areas of 'potential archaeological sensitivity' were identified.

6.1 Hays Homestead

The Hays Homestead is located at 110 Epping Road. As a former travellers hotel, it was built in the 1850's to serve one of Victoria's early transport routes. The structure is weatherboard with corrugated iron clad/shingle roof. The building became a private residence and dairy farm in 1869. The homestead has been in the ownership of Mr Ray Hay since 1945. The heritage place has been the subject of extensive investigation.

On 8 October 2002, Council issued a Planning Permit to demolish the Old Travellers Home Hotel and associated outbuildings. Council's decision to grant the permit was made after receiving formal advice from Heritage Victoria that the place was not of State Significance. In granting the permit, Council also considered a full range of technical matters relating to the viability of retaining the building in the context of the proposed Hayston Valley Estate Development Plan. Due to its dilapidated condition, the former Hotel was assessed as having very little potential for repair or restoration. Given these constraints it is acknowledged that relocation of the building either within a public or private land use context is not a feasible option. It was also noted that the landscape and historic context of the heritage place would be substantially compromised as a result of the future widening of Epping Road, required by VicRoads and as approved under the Harvest Home LSP.

A condition on the Planning Permit issued by Council a full documentary survey of the heritage place's archaeological and architectural significance to be undertaken in accordance with the requirements of Heritage Victoria and in consultation with the Whittlesea Historical Society. It also requires that the elements and history of the heritage place be integrated and interpreted

elsewhere within the proposed Hayston Valley Estate for the benefit of future residents and the wider community. Most of this interpretation will occur within the Reserve A that is located some 150 metres to the east of the existing site. Interpretation measures are detailed in the landscape design section of this Development Plan Report.

Further, Council resolved to prepare an amendment to the Whittlesea Planning Scheme to remove the Heritage Overlay at its meeting of 8 October 2002 as part of its consideration of the broader Hayston Valley Estate Development Plan.

6.2 Stone Walls

The stonewalls on the subject site are of local historic significance and will form an important feature of the landscape design of the development. Reconstructed stonewalls will take on a contemporary interpretation of the dry stonewalls and have been designed with a diagonal form to create a sense of merging or subsiding into the ground. The walls overall scale will be modified to respond to its use or function in the landscape (i.e. retaining walls, seating wall, entry feature, fence). Detailed design of the interpretation and use of the stone walls will be determined at the subdivision stage of the development.

6.3 Aboriginal Archaeological Sites

Within the HHLSP, areas of high and moderate potential Aboriginal archaeological sensitivity where identified. Areas of high sensitivity have been identified within the Riverine strip of Darebin and Findon Creeks (extending approximately 50 metres either side of the creeks). This area has generally been incorporated into the open space network.

In accordance with the recommendations of the aboriginal archaeological survey (Biosis Research, 1999) and the associated requirements of the HHLSP, sub surface testing has been carried out over the Hayston Valley Estate Development Plan area. The aim of the subsurface testing program was to test for the presence of subsurface cultural material within two areas of 'sensitivity', as identified in the earlier Biosis report.

A total of 13 transects were defined over these two areas, within which a total of 61 test pits were excavated. No aboriginal subsurface archaeological sites were identified (refer report prepared by Andrew Long & Associates, March 2002). A separate site visit held with representatives of the Wurundjeri and Kulin Nation Heritage Council identified two likely scar trees. These are located within the power transmission line easement and within the Findon Creek reserve. In consultation with representatives of the Wurundjeri the scar trees will be reinforced to prevent further decline, however will most likely not have display panels.

As a result of this testing program the recommendation was also made that a more extensive program of mechanical subsurface testing (over the rest of the site) be conducted should it be considered prudent to reduce the risk of interruption to development works.

7.0 Open Space and Recreation

7.0 Open Space and Recreation

7.1 Open Space Allocation

The open space design for the Hayston Valley Estate Development Plan has been guided by the principles and objective of the HHLSP and Council's Open Space Policy, which forms part of the Whittlesea Planning Scheme (Clause 22.01). The designation and location of open space within the Development Plan is also generally consistent with the HHLSP, which requires a minimum unencumbered open space allocation 0.85ha for the Development Plan area.

An integral component of the open space network within this Development Plan is the development of the Findon Creek reserve and the power easement. These form the basis of the linear park network within the Hayston Valley Estate Development Plan, establishing the northern linkages for the City's proposed major shared footway, pedestrian and cycle path network

The provision of open space in Hayston Valley Estate Development Plan is shown in Table 2. The detailed location of these areas is shown on the Open Space Plan (Figure 9).

TABLE 2: OPEN SPACE PROVISION

ENCUMBERED OPEN SPACE	**7.23 Ha**
Findon Creek Easement	*1.58 Ha*
Transmission Easement	*5.65 ha*
UNENCUMBERED OPEN SPACE	**2.44 Ha**
(Approx. 7.3% of Gross Developable Area)	
Open space allocated in HHLSP	
Area 3 (Reserve A in DP)	*0.35 Ha*
Area 7 (Reserve C in DP)	*0.40 Ha*
Open space provided in excess of HHLSP	
Reserve A (total area of 1.08Ha)	*0.73 Ha*
Reserve B	*0.17 Ha*
Reserve C (total area of 0.27Ha)	*-0.13 Ha*
Reserve D	*0.09 Ha*
Findon Creek Easement	*0.83 Ha*
Area outside 1 in 100 yr flood (approx only)	

The total open space area of 2.44 ha hectares within Hayston Valley Estate Development Plan represents 7.3% of the gross developable area of the Development Plan area. An additional 7.23 hectares is provided within the Development Plan as landscaped linear link (electricity easement) and creek reserve.

The location of the open space network within Hayston Valley Estate is shown on the Development Plan and Landscape Master Plan (Figures 5, 6 and 9). Diversity in the form, use and location of open space areas is achieved within Hayston Valley Estate, while maintaining a cohesive theme that complements the setting and character of the site.

7.2 Description of Open Space Areas

Reserve A – Local Park

The design of this open space will:

- Provide an open space gateway to the estate, which will set the landscape character for remainder of the development.
- Provide a sense of address for abutting medium density housing directly fronted by a series of smaller intimate spaces which will form a buffer for privacy between the housing the rest of the park.
- Retain the open woodland character created by the established River Red Gums.
- Retain and protect all healthy River Red Gum trees.
- Incorporate interpretative signage explaining the post-European settlement history of the site, specifically its past as a working farm and homestead.
- Provide for a shared path link for cyclists and pedestrians.
- Incorporate the street tree planting scheme beyond the streets and into the park.

Reserve B – Linear Link

The design of this open space will:

- Retain and protect the existing River Red Gum.
- Provide a path link.
- Facilitate for views to Findon Creek Reserve.

Reserve C – "Stony Knoll"

The design of this open space will:

- Highlight and frame this area, by way of sympathetic planting design, as a stony knoll landscape (as identified in the Local Structure Plan).
- Ensure integration with future open space development to the north.
- Provide for visual relief from the essentially lineal landscape of the easement.

Reserve D – Linear Link

The design of this open space will:

- Provide a sense of address for abutting medium density housing.

- Retain the open woodland character created by the established River Red Gums.
- Retain and protect the existing River Red Gum.
- Provide an open space link from the adjoining property to the south allowing increased permeability to the neighbourhood centre site and Findon Reserve.
- integrate with the adjoining park to the south.

Findon Creek Reserve – Hydrological & Recreational Reserve

The design of this open space will:

- Provide for hydrological function as a retarding basin and water quality improvement, with a pool and riffle treatment to Findon Creek and an off-line wetland system.
- Provide amenity for local residents with the provision of a shared path, picnic and playground facilities, pergola structure, boardwalk and pebble beach.
- Promote local art, with an area designated for a potential art installation.
- Retain the open woodland character created by the established River Red Gums.
- Retain and protect all healthy River Red Gum trees.
- Provide a timber bridge to allow pedestrian access through the park
- Enhance the ecological value of the park, through the provision of indigenous woodland and wetland vegetation.
- Provide for a shared path link for cyclists and pedestrians.
- Allow for exploratory play opportunities through the provision of informal gravel paths and small boardwalks within areas of native grasses.

Electricity Transmission Line Easement

The design of this open space will:

- Provide set back nature strips to allow for larger street tree planting outside the boundaries of the easement.
- Provide for a shared path link for cyclists and pedestrians.
- Create visual interest and break up the linearity of the space by varying the edge planting types, mounding and paths.
- Include low stonewalls of varying heights and widths adjacent to the shared path, to provide visual interest for vehicular traffic, break up the space and continue the use of stone walling through the development.

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OPEN SPACE TABLE

Encumbered Land	**7.23 Ha**
Findons Creek Easement	*1.58 Ha*
Electricity Easement	*5.65 ha*
Open Space	**2.44 Ha**
Reserve A	*1.08 Ha*
Reserve B	*0.17 Ha*
Reserve C	*0.27 Ha*
Reserve D	*0.09 Ha*
Findons Creek Easement	*0.83 Ha*

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Figure 9: Open Space Plan

8.0 Community and Recreation

8.0 Community and Recreation

The need for identified commercial and community services and facilities within the HHLSP area has been determined within the broader Epping North planning context. Given the anticipated population within the HHLSP area and the principles relating to the co-location of community facilities with schools and retail activity, a stand-alone community facility is not justified within the HHLSP area. The combined population of the HHLSP and Epping North Local Structure Plan areas falls within the threshold for the provision of one community centre which is to be provided in the Epping North Local Structure Plan area. The HHLSP (p.39) notes the following:

> *There are unlikely to be any community facilities permanently established within the area, and retail facilities will be limited. It is therefore important that strong links are established in the Harvest Home community, initially with the existing suburbs to the south and the newly establishing Epping North community to the west of Epping Road, and ultimately to the area north of Harvest Home Road. These links are important to ensure that the areas are integrated. Information regarding services as well as access to services via the road, public transport and bicycle networks is critical for this area.*

The HHLSP does, however, identify the need to provide a small area of commercial opportunity to meet the local convenience and servicing needs of future residents. The nominated site is located at the intersection of the east-west collector road and the proposed boulevard collector road which will run south through the adjacent Bluestone Views Development Plan. The site comprises an area of approximately 1,000m2 and is integrated with the open space network and a proposed medium density housing development on land to the immediate south. The site will provide for approximately 400m2 of floor space which is considered adequate to cater for two or three uses.

Under the current Residential 1 Zone, the zone purpose provides for '*...a limited range of other non-residential uses to serve local community needs.*' The designation of the site under the Development Plan as a 'Neighbourhood/ Commercial Facility' will thus provide an opportunity for a medial centre, convenience shop and/ or childcare centre. The site will assist in alleviating inappropriate commercial/ retail development pressures likely to be experienced along the Epping Road corridor. Given the prominence of the site, it will be important that the building design is of high quality to ensure its long-term viability and amenity. At the subdivision stage the developer will enter into an agreement to preserve opportunities for non-residential uses on the land.

9.0 Transport and Traffic

9.0 Transport and Traffic

The Epping North Structure Plan:

- Create boulevards to assist in the creation of a positive sense of place.
- Create or enhance viewlines and vistas.
- Promote a high level of internal accessibility.
- Incorporate traditional pavement widths with provision for on-street car parking.

These objectives are further reflected in the HHLSP and have informed the functional road layout of the Development Plan area. Figure 10 shows this layout.

9.1 Objective

The road network of the Hayston Valley Estate ODP has been defined in the HHLSP. It is based on the principal objective that it should facilitate the movement of traffic in an efficient and safe manner – providing accessibility to services and movement efficiency.

The HHLSP identifies the need to promote linkages to the south as a key transport issue. This Development Plan facilitates the successful integration of the newly establishing residential community with the existing areas to the south.

A secondary potential connection to the east is also envisaged in the HHLSP to preserve opportunities for an extension of the residential boundary adjacent to the Darebin Creek reserve. The Development Plan nominates a preferred link, which has the potential to function as a Collector Road in the event that this land is required for urban development. A reassessment of the need for this linkage and its ultimate configuration will be made at the time of subdivision. Similarly, extension of the collector road to the north in the eastern part of the Plan area may need to be further refined at the subdivision stage to take into account environmental values and mature River Red Gums located on the adjoining property(s).

9.2 Road Network

The road network of the Hayston Valley Estate Development Plan area has been defined in the HHLSP. A traditional hierarchy of roads has been adopted, comprising collector and local roads.

Epping Road

Epping Road is an existing two lane undivided road under the control of Vic Roads. As part of the Hayston Valley Estate development, land comprising a 20 metre road widening along Epping Road has been ceded to Vic Roads to increase the overall Epping Road reserve width to 40 metre. This widening will provide for a 4-land divided road with on road cycle lanes.

The existing traffic volume on Epping Road is approximately 11,000 vehicles per day (vpd) and duplication will not be required until this volume reaches 18,000 to 20,000 vpd. Using standard growth rates and Vic Roads' growth calculation method, it is estimated that duplication will not be required for many years.

The collector road and Epping Road intersection will initially operate as an unsignalised T-intersection. The trigger for the signalisation of the intersection will be when the estate on the west side of Epping Road forms a crossroad or when safety issues or significant delays demand.

Service Road

Due to the traffic volumes and function of Epping Road service road access is required to those lots fronting Epping Road. The service road is located outside the Epping Road reserve boundary and will be classed as a local road under the control of the City of Whittlesea.

Ultimately the service road will be one way with entry and exit directly onto Epping Road, thus avoiding termination to any other roads. However, in order to facilitate safe access to the main collector road from the proposed display home centre (located adjacent to the service road), a temporary two way service road treatment will be provided. The temporary service road treatment (Figure 11) will have two way traffic flow with the provision of temporary 90 degree angle parking bays on the west side. The two way road will temporarily connect to the main collector road allowing safe movement between the display homes and the Estate.

It is intended that the service road remain in this configuration until either the estate is fully developed and the display homes are sold; or when Epping Road is duplicated (reducing the clearance between the service road and traffic lanes on Epping Road); or when the service road is continued to the north and connected to Epping Road. Of these scenarios, it is envisaged that the Hayston Valley development will be completed first.

The low traffic levels on the service road will facilitate the movement of cyclists along Epping Road. A bike path link will continue across the collector road when the service road is diverted onto Epping Road. (Commuter cyclists may use the existing sealed shoulders or on-road path after Epping Road is duplicated).

Main Collector Road

The main collector road will be the primary vehicular access to the development. It is anticipated that 80% of vehicle movements will use the main collector road and Epping Road intersection. The expected traffic volume at Epping Road is 2,970 vpd. Of this, 2,375 vpd (or 80%) would be expected to travel south.

The cross section for this road will generally provide direct lot access and have parking lanes on both sides adjacent to lots (refer Figure 10a). The ultimate traffic volumes along the collector road will be adequately catered for within the proposed cross sections. In some areas a median will be provided as a landscaping feature.

While access to the south and east will generally occur via Epping Road, a low level connection to Maserati Drive through the proposed residential development to the south will be provided. Brush Road will also be constructed as a collector road to the south.

Roundabouts will be installed at significant intersections along the collector road (shown on the Road Hierarchy Plan, Figure 10).

A bridge will be constructed across Findon Creek. Parking lanes will be omitted. It is anticipated that the bridge will be a culvert structure and provide 1 in 100 year flood protection of the road.

Local Roads

Local roads within the Estate will vary in their width and configuration throughout the development area, depending on the anticipated traffic volume and location of the road. The relevant cross sections are shown in Figure 10a.

The 7.5m road cross section allows for parking on both sides of the carriageway while still allowing a single vehicle to pass or allows for two vehicles to pass one parked vehicle. These roads will generally cater for traffic volumes of up to 2,000 vpd. These roads will provide a limited through traffic function by providing links to the collector road.

The 5.5m road cross section allows for parking on only one side of the carriageway while allowing a single vehicle to pass. These roads will generally cater for traffic volumes of up to 1,000 vpd. The Epping Road service road will also be based on this cross section.

The boulevard roads adjoining the open space will be based on one of the above sections with one side of the nature strip and footpath omitted adjacent to the reserve.

Rear Lanes/Driveways

Rear lanes and driveways will be two way roads with a width of 6.0 and 5.5m respectively. The rear lanes will have staggered indented parking on one side and the driveway treatments will be individually designed to cater for vehicle movements and parking.

Courtheads

The courtheads throughout the development will be a mixture of "T" and circular shapes. The circular treatments will be used where there are greater than 6 lots in the court whereas the "T"

shape courtheads will service a maximum of 6 lots. The driveway treatments will service a maximum of 4 lots and will be individually designed to allow for the necessary turning movements. The "T" and circular courtheads will provide a turning movement for a standard 8.8m service vehicle and the driveway treatments will be designed to cater for the standard car. On street parking will be provided for each lot within the court or driveway treatment.

9.3 Public Transport

Bus routes

No existing bus routes currently operate past the site. The closest bus route is the No.556 running from Epping (corner Epping Road and Young Street) to Northland Shopping Centre via Epping and Findon Roads. Route 555 runs from Epping (corner Epping Road and Young Street) to Northland Shopping Centre directly south along Epping Road from Young Street. These routes are operated by Reservoir Bus Company.

A bus service, proposed to run along the Hayston Valley Estate main collector road, will provide a suitable service for the development with almost all properties being within 400m of a bus stop. The service implementation can be staged as development occurs with a bus being able to U turn using the roundabouts.

The stages west of Findon Creek could be served by a bus U turning at the first roundabout. A bus U turning at the second roundabout can serve all the development west of the power easement. The remainder of the development can be served by a bus U turning at the third roundabout. All roundabouts will be designed to cater for a U turning bus.

Ultimately, the Office for the Director of Public Transport will decide when the service will be funded or approved and requests should be made through Reservoir Bus Company when the first stages are developed to allow new residents to develop a public transport routine from the beginning of their occupancy. Development to the south may alter bus routes when connections to the south are made.

9.4 Bicycle and Pedestrian Linkages

The proposed bicycle and pedestrian linkages through Hayston Valley Estate are shown on the Development Plan (Figure 5). Footpaths within the residential road network complement this pedestrian network.

Pedestrian and cycle connectivity with the proposed residential development to the south is achieved through roads, the creek reserve and the power easement. Both the creek reserve and power transmission line easement paths will, in the future, link to Findon Road.

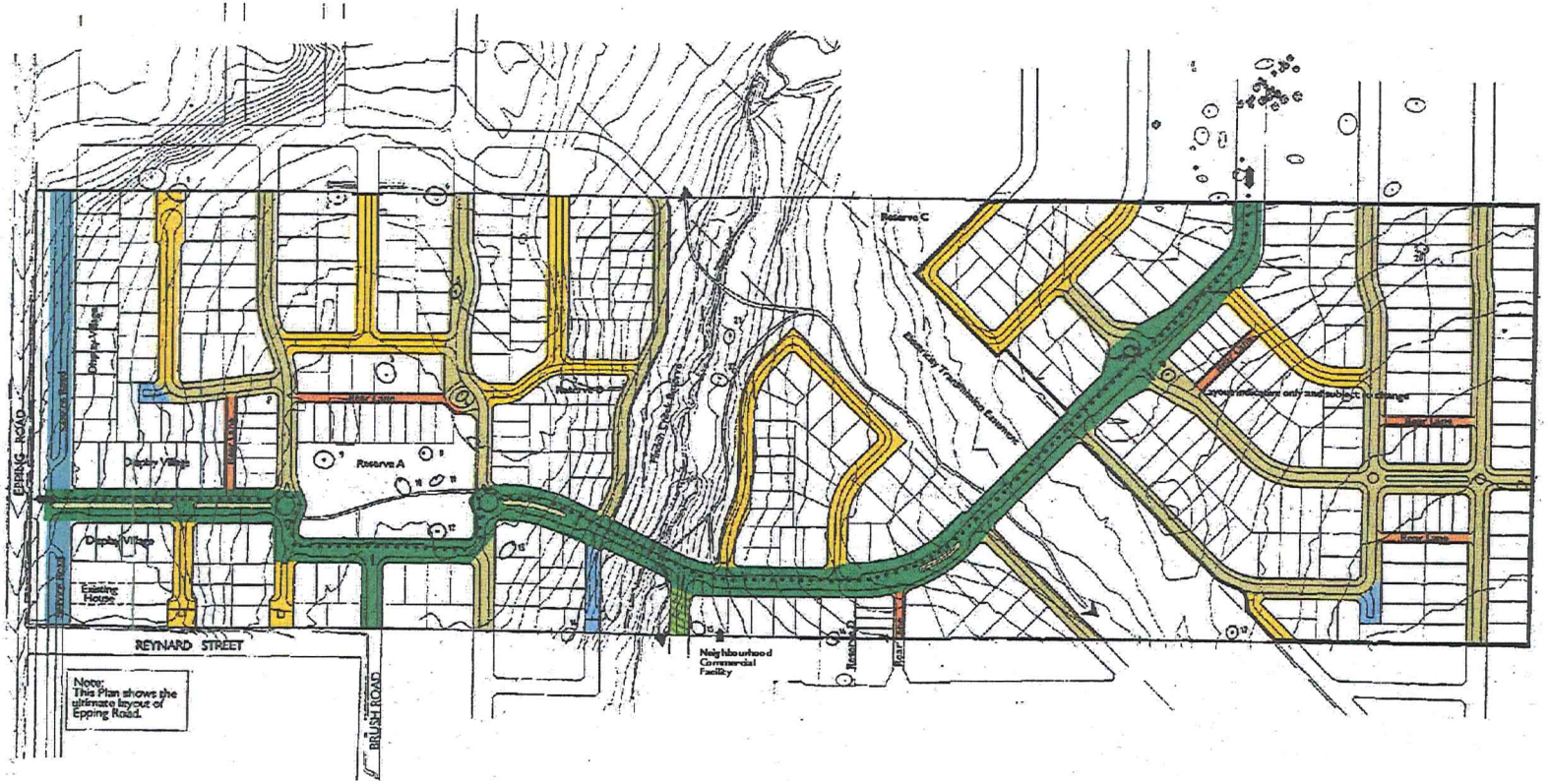
The street layout provides good connectivity and links to the collector road and reserves enabling pedestrians and cyclists direct access to the main paths and destinations. Footpaths will

be provided on both sides of the roads on all roads except the boulevard roads and the driveway accesses. In the driveway accesses the volumes and speeds will be low to enable safe pedestrian access along the driveway area.

The cycle paths crossing the main collector road will be at grade crossings designed in accordance with Austroads "Guide to Traffic Engineering Practice – Bicycles". Grade separation at the creek crossing will not be possible using the proposed culvert structure.

Cycle paths are to be provided in a parking and cycle lane on the main collector road and along the duplicated Epping Road. Until Epping Road is duplicated cyclists using Epping Road can utilise a wide paved shoulder. Traffic volumes on the local roads will be low, allowing the safe use of the road pavement by cyclists.

Coomes



- Collector Road
- Collector Road with median
- Local Road 7.5m pavement
- Local Road with 4.0m median
- Local Road with 5.5m pavement
- Right of way/Rear lane
- Extended driveway treatment 5.5m
- Service Road 5.5m pavement
- Modified collector road reserve (no footpath, naturestrip or cycle lane to west

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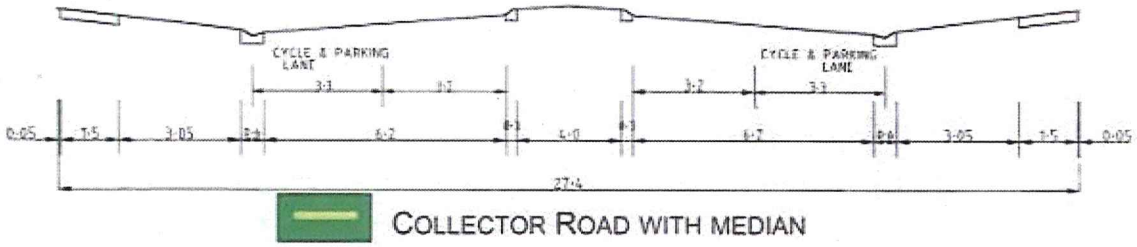
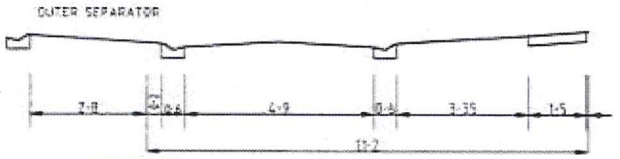
Figure 10: Road Hierarchy Plan

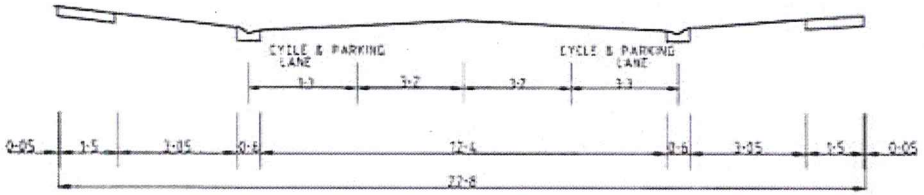
Coomes



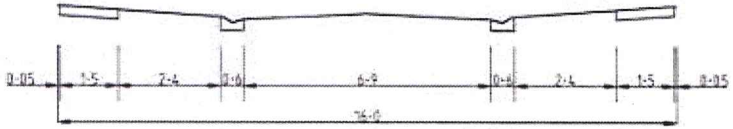
COLLECTOR ROAD WITH MEDIAN



SERVICE ROAD

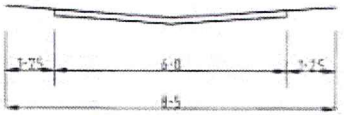


COLLECTOR ROAD

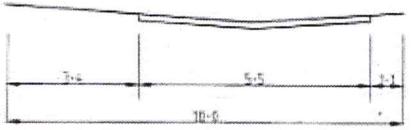


LOCAL ROAD WITH 7.5M PAVEMENT

LOCAL ROAD WITH 5.5M PAVEMENT



RIGHT OF WAY/
REAR LANE



EXTENDED DRIVEWAY
TREATMENT 5.5M PAVEMENT

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Figure 10a: Road Sections

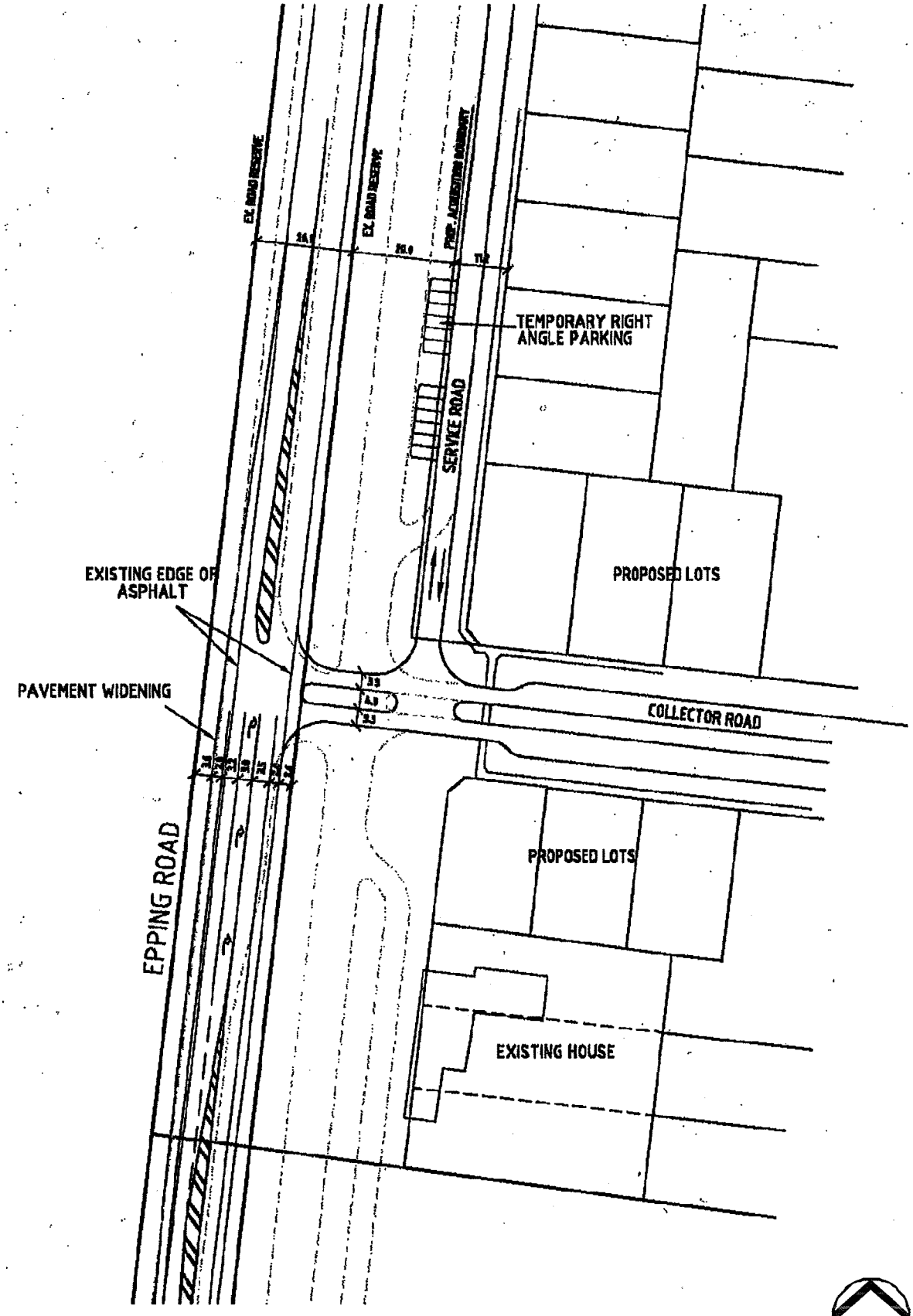

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Figure 11: Interim Epping Road Treatment

10.0 Physical Infrastructure

10.0 Physical Infrastructure

10.1 Sewer

The Hayston Valley Estate Development Plan area falls within the boundary of Yarra Valley Water for sewerage.

The sewer outfall for the Development Plan area relies on the construction of the Findon Creek Branch Sewer from the south which connects to the existing Darebin Creek sewer system. The Findon Creek system will require the construction of a detention storage downstream of the Development Plan area. This system will cater for all the existing residential zoned areas to a maximum of 650 lots. In the long term the excess flows from this area will be diverted to the Epping North – Cooper Street area and ultimately into the Merri Creek sewer system.

The construction of the detention tank and branch sewer is to be co-ordinated by Yarra Valley Water under a private financing agreement whereby a selected company will finance, design and construct the system. Tenders for the private financing agreement will be sought in mid March 2002 and construction may commence in mid 2002.

It is expected that development of the Development Plan area will precede the construction of the branch sewer to the boundary. In this case it is likely that the successful tenderer in the sewer construction will be required to provide eduction of sewage from the site.

The Findon Creek Branch Sewer will be constructed on an alignment following the creek. The branch sewer will therefore be constructed in the drainage reserve. The sewer reticulation system for the Development Plan area will connect at various points along the branch sewer.

A 1% infiltration rate is required within the development due to the conditions of the existing Darebin Creek sewer system. This is to be achieved by construction management practices to ensure the pipes are jointed properly to ensure no infiltration through the joints and adherence to bedding and backfill standards to ensure that the pipe and joints are supported and not stressed. Illegal drainage connections should be strictly monitored by Council and Building Surveyors

10.2 Water Supply

The Development Plan area falls within the boundary of Yarra Valley Water for water supply.

The water supply to the Development Plan area will be from the Quarry Hills Water Supply Zone and will be provided by Yarra Valley Water with the extension of the watermain in Epping Road to O'Herns Road and then from a pumping station along Epping Road to the site.

The water supply for the Development Plan area will then be taken from the 375 diameter main in Epping Road and reticulated through the site. A secondary connection will be provided from the south when development of the two areas reaches the common boundary.

10.3 Power, Gas and Telecommunications

The Development Plan area falls within the boundary of TXU Electricity for electricity supply and Origin Energy for gas supply. Telstra is required to provide telecommunications to the site.

Electricity, gas and telecommunications are all available to the Development Plan area from Epping Road to the south. There is sufficient capacity to meet the demands of the new development with some minor augmentation of infrastructure.

10.4 Information Technology

Clause 23.13 of the Whittlesea Planning Scheme requires the provision of a conduit network to facilitate the installation of advanced telecommunications services.

The conduits will be laid in accordance with Council's *Planning Guidelines for Conduits for Optical Fibre Services.* The conduits will be located in a common services trench alongside Telstra conduits and electricity services and will service every lot. Road crossings will also be provided in the common service trench to service lots on the opposite side of the road. A conduit network concept plan will be supplied for approval during the detailed design phase after the receipt of the electrical design plans on which it will be based.

11.0 Development Contributions

11.0 Development Contributions

11.1 Policy Framework

Development Contributions will be payable on the subject land in accordance with Clause 45.06 (Schedule 2) of the Whittlesea Planning Scheme. Both the Schedule and the Harvest Home LSP identify the range of infrastructure and facilities required to serve the future urban development of the Harvest Home area within Epping North. Infrastructure items include land and construction costs for all major roads; community infrastructure; open space; regional recreation land; and bicycle network.

Development contributions are charged against the hectare of developable land on a stage by stage basis. Payment of the development contributions will be made prior to the issue of a Statement of Compliance for each particular stage.

11.2 Contribution Assessment

The gross development levy due on the Hayston Valley Estate has been assessed at $43,833 per hectare in accordance with Table 1 to Schedule 2 of Clause 45.06 ($39,333/ha for development infrastructure and $4,500/ha for community infrastructure).

The Community Activity Centre facility to be provided within the Epping North Local Structure Plan Area will also meet the needs of residents in the HHLSP area. Accordingly the cost of the facility will be apportioned equitably between the two LSP areas.

The total charge for the road network is $17,345/ha. Contributions will also be made to other infrastructure including the Epping North Strategic Plan transport corridor to allow the extension of future heavy rail serve; the bicycle network and regional and local recreation facilities.

Contributions will be in the form of cash, land and/or works.

12.0 Site Staging

12.0 Site Staging

Development of Hayston Valley Estate is proposed to commence mid 2003. The first stage of the estate will be the area to the west of the transmission easement, within proximity to Epping Road.

It is anticipated that subsequent development will occur over the next five to ten year period. A staging plan (Figure 12) forms the basis of the expected development program. However, as the development proceeds, it may be necessary for some flexibility in this development staging to meet market demands.

The release of land will therefore be generally as set out in the staging program but may change to a degree over time.

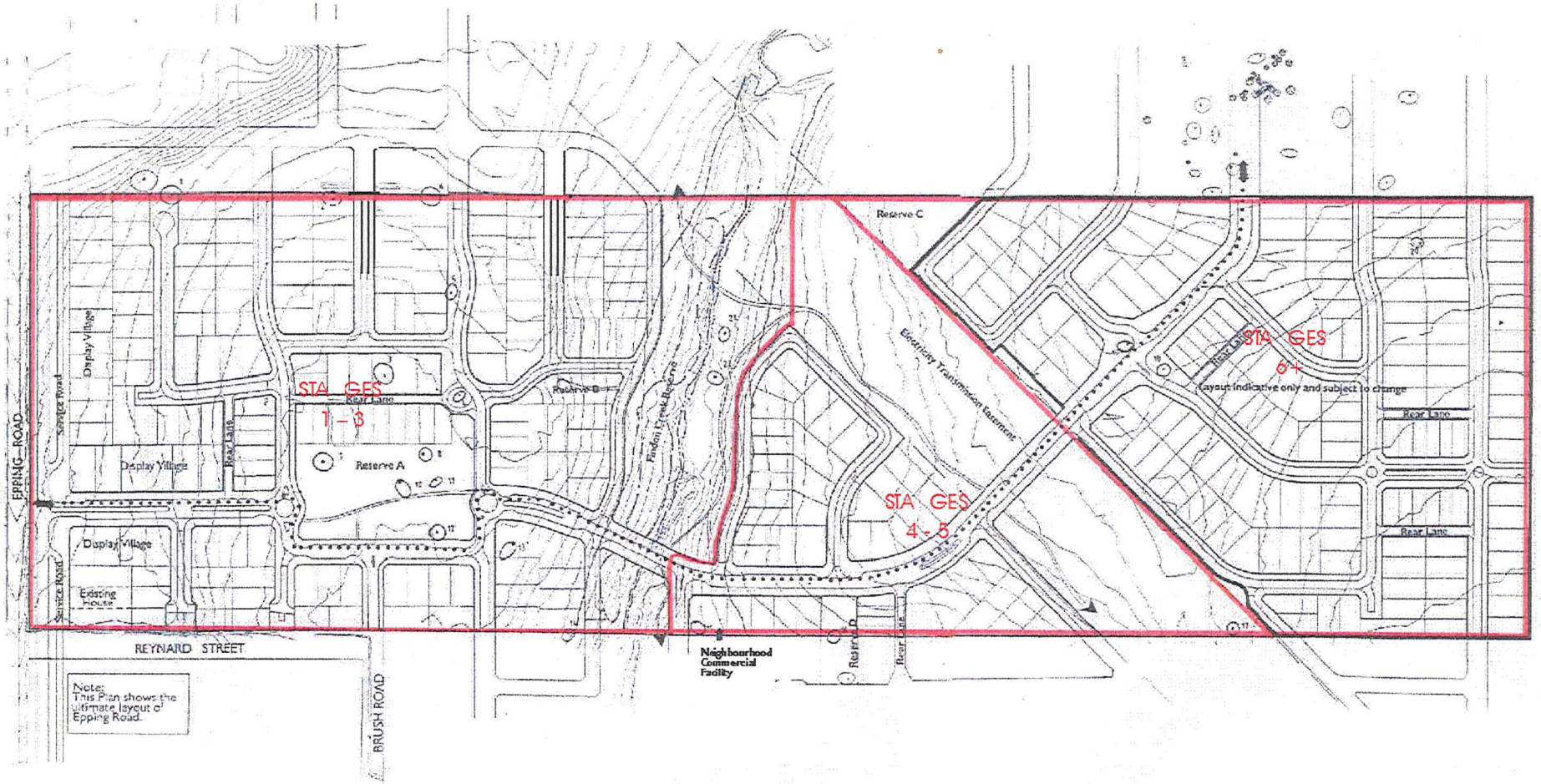

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Figure 12: Staging Plan