



JETTY ROAD URBAN GROWTH PLAN

Adopted 26 June 2007
(Amended 23 September 2008)



PREFACE

STATUS AND ROLE OF THE URBAN GROWTH PLAN

The Jetty Road Urban Growth Plan (UGP) sets the strategic direction for the development of land in the Jetty Road growth area. The UGP sets out the key planning responses that will be pursued at each stage of the planning process for the growth area. The UGP will ensure that the growth area develops in an orderly and sustainable fashion, and that areas of high ecological, cultural or aesthetic value are protected.

The UGP was developed in consultation with a wide range of stakeholders, including state government agencies, statutory bodies, utility companies, community groups, developers and landowners. Public consultation was conducted in October and November 2006.

The UGP was adopted by the City of Greater Geelong at the Council meeting on 26 June 2007 and amended on 23 September 2008, following Council adoption of Amendment C129.

THE STRUCTURE OF THE URBAN GROWTH PLAN

The exhibited Jetty Road UGP was accompanied by background specialist consultant reports namely:

- *Flora and Fauna Assessment*, Brett Lane and Associates, June 2004
- *Preliminary Geotechnical Assessment*, Chadwick Group Holdings, October 2004.
- *Stormwater and Stream Rehabilitation Concept*, Ecological Engineering, November 2005.
- *Curlewis Residential and Commercial Supply and Demand Assessment*, Essential Economics, March 2005.
- *Jetty Road, Clifton Springs – Survey for Aboriginal and Archaeological Sites*, Practical Archaeology Services, February 2005.
- *Curlewis Drysdale Proposed Structure Plan – Transport Provisions and Traffic Engineering Report*, TTM Consulting.
- *Engineering Servicing*, Youngs Consulting Civil Engineers, October 2004.
- *Policy Context Assessment*, Tract Consultants, July 2006

The UGP itself consists of three parts; the *Background*, which provides the context to the UGP, the *Urban Growth Plan*, which contains the overall vision, key issues,

principles and objectives that guide the development of the growth area and the final section, *Realising the Plan*, which addresses staging and implementation.

THE PROJECT TEAM

This report has been prepared by the City of Greater Geelong, building on the exhibited UGP prepared by Tract Consultants in association with Brett Lane and Associates Pty Ltd, Chadwick Group Holdings Pty Ltd, Ecological Engineering Pty Ltd, Essential Economics Pty Ltd, Practical Archaeology Services Pty Ltd, TTM Consulting Pty Ltd, Youngs Consulting Civil Engineers Pty Ltd.

EXECUTIVE SUMMARY

INTRODUCTION

The Jetty Road Urban Growth Plan (UGP) sets the strategic direction and provides the urban framework for the development of land in the Jetty Road growth area. The UGP specifies the key planning responses that will be pursued in all stages of the planning process. The UGP will ensure that the growth area develops in an orderly and sustainable fashion, and that areas of high ecological, cultural heritage or aesthetic value are protected.

THE JETTY ROAD GROWTH AREA

The Jetty Road growth area in the City of Greater Geelong is a major growth area on the Bellarine Peninsula. The 310ha growth area is located immediately to the west of Clifton Springs, approximately 17 km east of the Geelong CBD. The Jetty Road growth area is generally bounded to the east by Jetty Road and Griggs Creek, McDermott Road to the west, Port Phillip Bay to the north, the Curlewis Golf Club to the south west and the Geelong – Portarlington Road to the south.

It is intended that the Jetty Road growth area will accommodate a large proportion of the growth forecast for the Bellarine Peninsula. The growth area is expected to contain 3,300 dwellings when fully developed, with a population in excess of 8,000 people.

POLICY CONTEXT

Development of Drysdale/Clifton Springs has been informed by the Drysdale/Clifton Springs Structure Plan (1992). The land west of Jetty Road has also been identified as a growth area in Council's Urban Growth Strategy (1996). The area has been designated for urban growth as it is considered to have a high level of amenity, good access to services and development of the site would be expected to have minimal adverse impact on the environment. The UGP makes a significant contribution to achieving State Government policy to provide at least 10 years lot supply for residential development for the township of Drysdale/Clifton Springs.

DEVELOPMENT OF THE PLAN

The preparation of the Jetty Road Urban Growth Plan has been guided by a number of principles and objectives relating to residential development, subdivision, sustainable growth and environmental protection and is based on analysis of the growth area and the surrounding area.

These Urban Growth Plan principles are based on best practice planning, state and local planning policy frameworks and incorporating policies and directions from a local level through to the Commonwealth level.

THE URBAN GROWTH PLAN VISION

The Jetty Road Urban Growth Plan vision sees the area developed into a sustainable community that demonstrates best practice urban development. The relationship to the bay, connections to adjacent residential areas and natural and cultural assets will be enhanced to form a distinct urban character. By responding to the needs of the future community and managing sensitive interfaces, the Jetty Road growth area is expected to become a highly sought after location for living, working and recreation, and will form an attractive addition to Drysdale/Clifton Springs.

THE URBAN GROWTH PRINCIPLES

Natural Environment principles

Principle 1: Protect and enhance the environmental values of the Jetty Road growth area.

Principle 2: The foreshore is to be protected and rehabilitated to strengthen its ecological and amenity values.

Principle 3: Griggs Creek is to be protected and rehabilitated to strengthen its ecological and amenity values.

Principle 4: Public landscaping is to promote ecological sustainability and enhance the amenity and character of the growth area.

Principle 5: Ensure potential contamination issues are addressed prior to development of the site.

Heritage Principles

Principle 6: Development is to be sensitive to sites of Aboriginal significance and will promote their on going conservation where appropriate.

Principle 7: Development will be sensitive to Post Contact (European) Cultural Heritage and will promote the on going conservation of areas of historic significance where appropriate.

Residential Neighbourhoods Principles

Principle 8: Urban form should contribute to the health and wellbeing of residents and the environment.

Principle 9: Provide residential densities to support a comprehensive range of commercial and community facilities.

Principle 10: Support a comprehensive mix of housing types to support a diverse community and to meet the different and changing needs of future residents.

Principle 11 Built form of residential neighbourhoods will be of high quality design, create a distinct sense of place and will reflect and enhance a seaside meets countryside character for future development.

Community Infrastructure and Activity Centres Principles

Principle 12: Activity Centres are to be provided to service the needs of future residents.

Principle 13: The siting of activity centres is to provide convenient access to services for future residents.

Principle 14: Activity centres are to be designed according to best practice in urban design and so as to encourage community cohesion.

Principle 15: Ensure the provision of Community Infrastructure to service the needs of future residents.

Open Space and Recreation Principles

Principle 16: Provide a public open space contribution of at least 10% of unencumbered land within the growth area.

Principle 17: Open space will be located and designed to provide maximum access and amenity to the residents of the Jetty Road growth area, retaining and preserving the positive features of the existing landscape.

Principle 18: Provide linkages between public open spaces and key destination points.

Principle 19: Specific areas of public open space are to be subject individual treatments, appropriate to their role and location.

Movement and Access Principles

Principle 20: The Internal Primary Road Network and local streets are to provide well defined, safe and efficient access to, and distribution of traffic throughout the Jetty Road growth area in a manner that responds to the natural environment and topography of the site, while not compromising residential amenity.

Principle 21: The proper function of intersections is to be ensured through the location, design and provision of intersection treatments.

Principle 22: No development or infrastructure in or adjacent the Jetty Road growth area is to in anyway compromise the potential to re-introduce heavy rail or light rail on the existing railway reserve currently denoted as the "Bellarine Rail Trail".

Principle 23: Provide access to a safe and convenient public transport service in order to promote transport options for all residents, encourage the use of more sustainable forms of transport and reduce car reliance.

Principle 24: Provide or access to a safe and convenient network of pedestrian and bicycle routes for both commuting and recreation.

Flooding, Drainage and Utility Services Principles

Principle 25: The Jetty Road growth area is to exemplify best practice in water sensitive urban design.

Principle 26: Stormwater quality, treatment and flow management must ensure no negative impacts on downstream properties, ecology and geomorphology.

Principle 27: Reduce the need for consumption of potable water.

Principle 28: Utility services must demonstrate best practice in environmentally sustainable development.

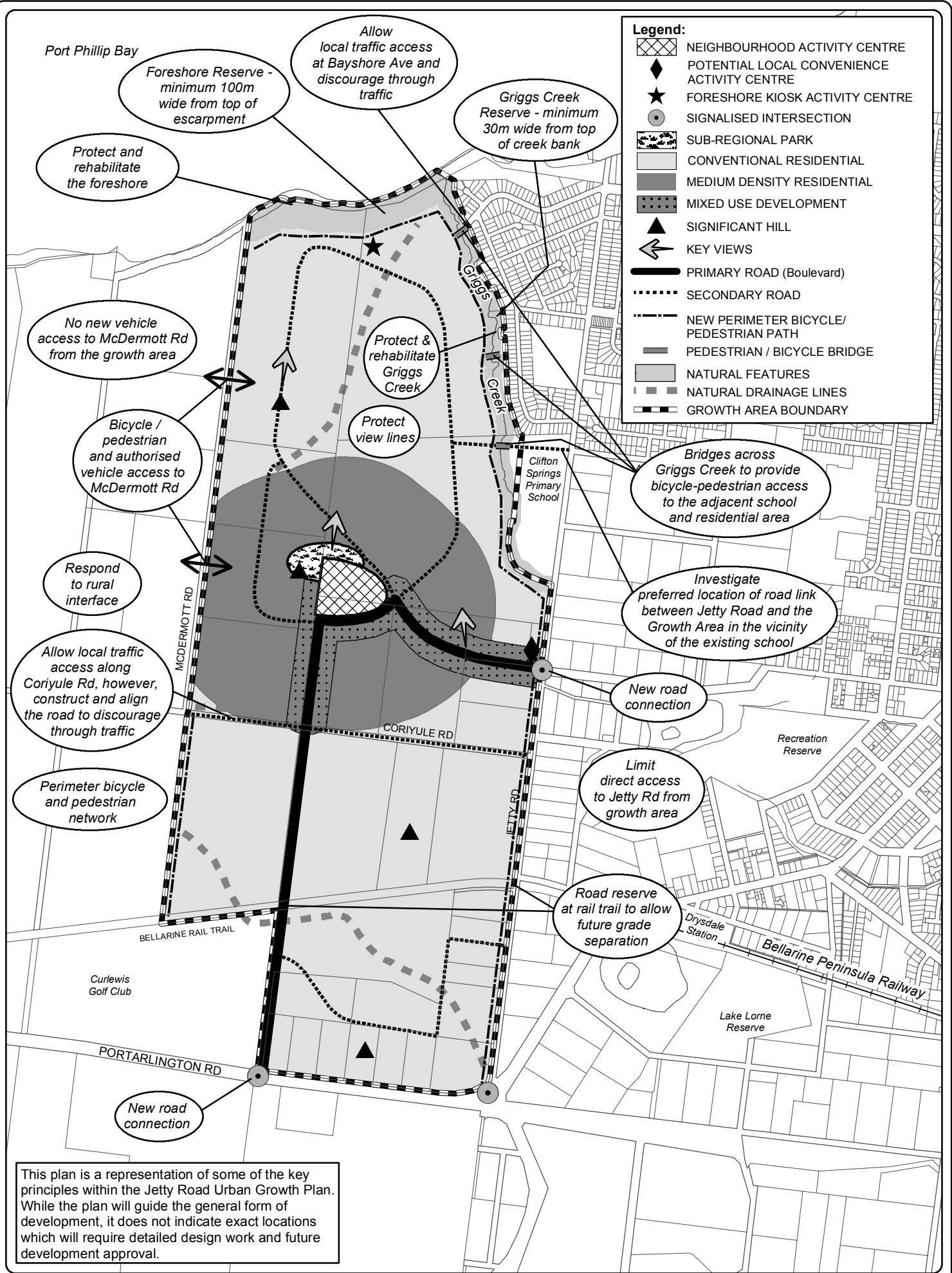
Staging Principles

Principle 29: The future development of the land is proposed to occur in stages, identified in a staging plan, that directs how development should proceed so as to achieve the timely and efficient provision of services, infrastructure, access roads and environmental enhancements, while protecting adjacent residential and rural amenity.

IMPLEMENTATION OF THE URBAN GROWTH PLAN

The Jetty Road Urban Growth Plan will be introduced into the Greater Geelong Planning Scheme via a Planning Scheme Amendment. This process will provide an opportunity for public submissions during the formal Amendment process in accordance with the *Planning and Environment Act, 1987*. The process of consideration of submissions may result in changes to the plan prior to its final introduction into the Greater Geelong Planning Scheme.

The development of the Jetty Road growth area will be through staged rezoning of the land and the creation of Development Plans for each of these stages. The UGP provides the basis for these development plans and establishes the overarching principles for development.



JETTY ROAD GROWTH AREA

STRUCTURE PLAN

JETTY RD URBAN GROWTH PLAN

Map No. 4

TABLE OF CONTENTS

PREFACE	i
STATUS AND ROLE OF THE URBAN GROWTH PLAN	i
THE STRUCTURE OF THE URBAN GROWTH PLAN	i
THE PROJECT TEAM	ii
EXECUTIVE SUMMARY	iii
INTRODUCTION	iii
THE JETTY ROAD GROWTH AREA	iii
POLICY CONTEXT	iii
DEVELOPMENT OF THE PLAN	iii
THE URBAN GROWTH PLAN VISION	iv
THE URBAN GROWTH PRINCIPLES	iv
IMPLEMENTATION OF THE URBAN GROWTH PLAN	vi
TABLE OF CONTENTS	viii
TABLE OF FIGURES	xi
THE BACKGROUND	12
INTRODUCTION	12
Purpose of the plan	12
The Jetty Road Growth Area	12
Background to the Urban Growth Plan	12
LOCATIONAL CONTEXT	16
Regional Context	16
Local Context	16
Existing Land Uses	17
Ownership Pattern	17
Current Population	17
Projected Population	17

Demographics	19
DEVELOPMENT CONTEXT	19
The Growth of Geelong	19
Residential Demand and Supply	19
POLICY CONTEXT	21
State Policy Context	21
Local Policy Context	22
Other Relevant Strategies	22
SUSTAINABLE URBAN GROWTH	22
THE URBAN GROWTH PLAN	24
GROWTH AREA VISION	24
THE STRUCTURE PLAN	24
NATURAL ENVIRONMENT	26
Key Issues	26
Natural Environment principles and objectives	33
Natural Environment principles and objectives	33
HERITAGE	39
Key Issues	39
Heritage Principles and Objectives	40
RESIDENTIAL NEIGHBOURHOODS	42
Key Issues	42
Residential Neighbourhoods Principles and Objectives	43
COMMUNITY INFRASTRUCTURE AND ACTIVITY CENTRES	49
Key Issues	49
Community Infrastructure and Activity Centres Principles and Objectives	53
OPEN SPACE AND RECREATION	58
Key Issues	58
Open Space and Recreation Principles and Objectives	61

MOVEMENT AND ACCESS	66
Key Issues	66
Movement and Access Principles and Objectives	72
FLOODING, DRAINAGE AND UTILITY SERVICES	85
Key Issues	85
Flooding, Drainage and Utility Services Principles and Objectives	94
REALISING THE PLAN	97
STAGING	97
Key Issues	97
Staing Principles and Objectives	98
PROVISIONAL PLANNING CONTROLS	102
Proposed Local Planning Policy	102
Proposed Zones	103
Proposed Overlays	104
REFERENCES	106

TABLE OF FIGURES

No.	Title	Page
4	Jetty Road Growth Area Structure Plan	vii
1	Regional Context Map	14
2	Local Context Map	15
3	Existing Property Title Boundaries	18
4	Jetty Road Growth Area Structure Plan	25
5	Existing Vegetation Types	31
6	Site Contours	32
7	General Environmental Management	38
8	Indicative Location of Medium Density Housing	48
9	Existing Activity Centres and Community Infrastructure	52
10	Future Activity Centres and Community Infrastructure	57
11	Existing Public Open Space	60
12	Future Public Open Space	65
13	Existing Road Network	71
14	Future Road Network	83
15	Future Pedestrian and Bicycle Network	84
16	General Stormwater Catchment Plan	92
17	Proposed Sewerage Catchment Plan	93
18	Indicative Location of Proposed Stage One	101

THE BACKGROUND

INTRODUCTION

Purpose of the plan

The Jetty Road Urban Growth Plan (UGP) sets the strategic direction and provides the urban framework for the development of land in the Jetty Road growth area. The UGP sets the key planning responses that will be pursued in all stages of the planning process. The UGP will ensure that the growth area develops in an orderly and sustainable fashion, and that areas of high ecological, cultural heritage or aesthetic value are protected.

The Jetty Road Growth Area

The Jetty Road growth area is a significant growth area on the Bellarine Peninsula; approximately 20 km east of the Geelong CBD, in the City of Greater Geelong (see *Regional Context Map* on page 14). It comprises an area of 310ha and will extend the Clifton Springs and Drysdale townships to the west. It is intended that this growth area will accommodate a significant part of the forecast growth for the Bellarine Peninsula. The growth area has high levels of amenity, good access to services and it is expected that development of the site will have a minimal adverse impact on the environment. The growth area is generally bounded by Jetty Road and Griggs Creek to the east, McDermott Road to the west, Port Phillip Bay to the north, the Curlewis Golf Club to the south west and the Geelong – Portarlington Road to the south (See *Local Context Map* on page 15).

Development of the Jetty Road growth area in effect extends Clifton Springs towards Geelong; however, no further development is to occur west of McDermott Road. This UGP is consistent with Council's policies to retain the high quality landscape character of the Bellarine Peninsula and will not compromise the existing "green break" between Geelong and Clifton Springs.

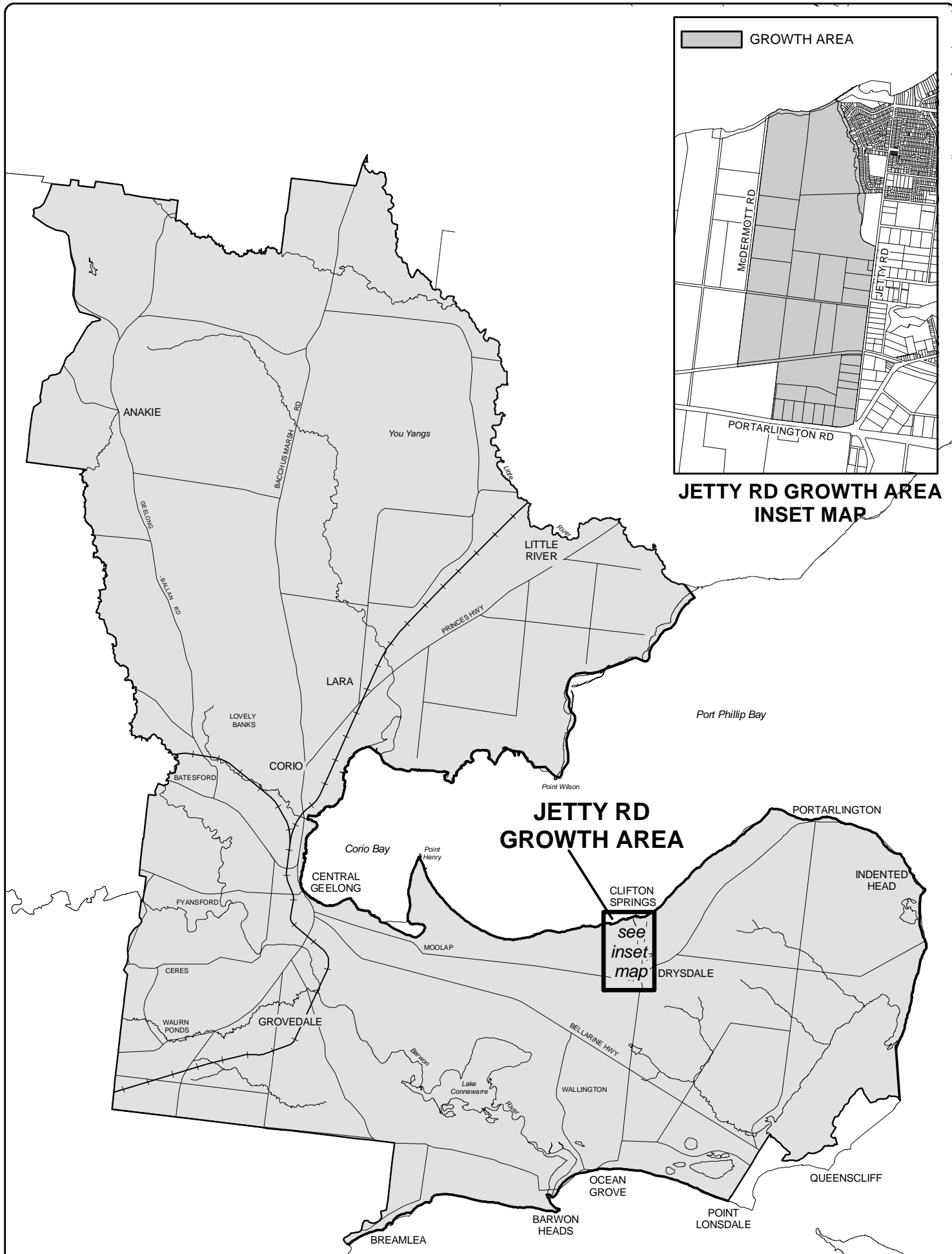
Background to the Urban Growth Plan

Development of Drysdale/Clifton Springs has been guided by the Drysdale/Clifton Springs Structure Plan. In 1988 the Geelong Regional Commission identified the area west of Jetty Road (the Jetty Road growth area) as one of two preferred development areas.

In 1992 a revised Structure Plan was prepared. This Structure Plan identified constraints and opportunities for growth around Drysdale/Clifton Springs and concluded that land to the west of the townships "is the logical direction for future growth". The Study Area is generally identified as "Rural Future Urban" in this Structure Plan.

The part of the Jetty Road growth area located to the south of the Bellarine Rail Trail was identified in the 1992 Structure Plan as Rural Residential. Prior to this it was zoned and subdivided for rural residential use based on its servicing constraints and given its proximity to the rural residential development on the land east of Jetty Road. As the township developed, the previous fragmentation of these lots limited the ability for consolidation of the township. Inclusion of this area in the Jetty Road growth area will now provide a framework to guide its consolidation. This is also supported by the State Government direction for coastal planning and maximising infrastructure capacity.

The Greater Geelong Planning Scheme was adopted in July 2000 and the 1992 Drysdale/Clifton Springs Structure Plan is reflected in the planning scheme's overall strategic framework plan. Drysdale / Clifton Springs is also specifically referenced in the Municipal Strategic Statement and Local Planning Policy Framework. The identification of the land west of Jetty Road as being appropriate for development was also identified in Council's Urban Growth Strategy of 1996.



**JETTY RD GROWTH AREA
INSET MAP**

**JETTY RD
GROWTH AREA**

CLIFTON
SPRINGS
*see
inset
map*

**CITY OF GREATER
GEELONG**

Prepared by City of Greater Geelong - May 2007
Although all due care has been taken to ensure that this document is correct, no warranty
is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

0 1 2 4 6 8 Km

REGIONAL CONTEXT MAP

JETTY RD URBAN GROWTH PLAN

Map No. 1

Legend:



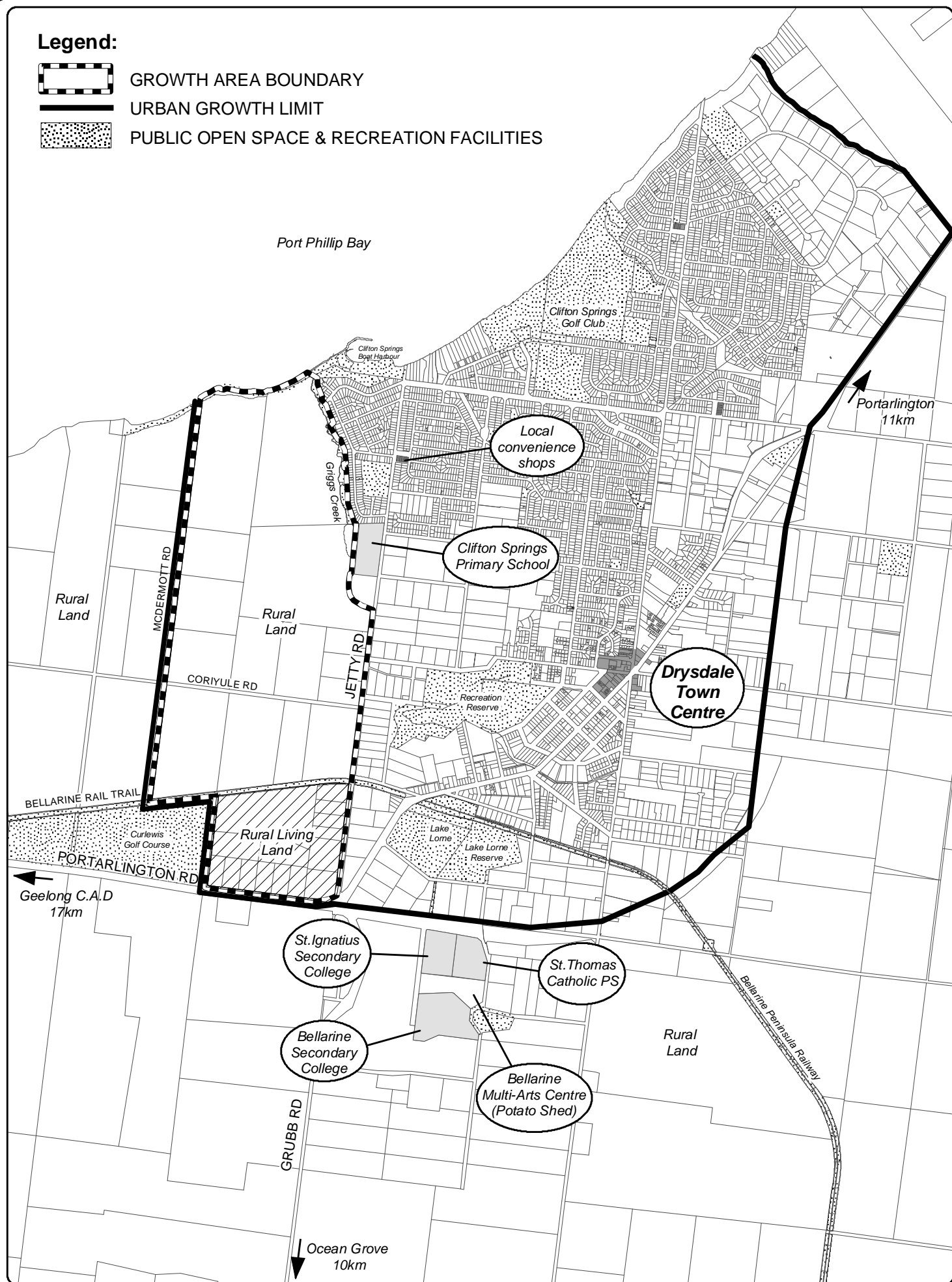
GROWTH AREA BOUNDARY



URBAN GROWTH LIMIT



PUBLIC OPEN SPACE & RECREATION FACILITIES



0 0.25 0.5 1 1.5 2 Km

Prepared by City of Greater Geelong - May 2007
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

LOCAL CONTEXT MAP JETTY RD URBAN GROWTH PLAN

Map No. 2

LOCATIONAL CONTEXT

Regional Context

(See also Regional Context Map, page 14)

Geelong City is a major regional service node and a key provider of community and commercial services to the wider Bellarine area. The Jetty Road site is accessible to Geelong by public and private transport.

The Bellarine Peninsula supports a number of land uses, ranging from traditional suburban development to agriculture and is one of the fastest growing coastal areas in Victoria. The towns on the Bellarine Peninsula have, in recent times, been transformed from small rural communities and fishing towns to high demand seaside towns and holiday destinations. This population growth is expected to continue and it is anticipated that the total population of the Bellarine Peninsula will increase by 20,000 residents over the next 30 years. Drysdale/ Clifton Springs and Ocean Grove have been identified as the expected location of a large proportion of this growth. The changes in demographics resulting in the Bellarine Peninsula's increasing popularity have placed significant demands on its commercial, community and residential infrastructure. This has in turn resulted in changes to much of the land use in the area. However, even with these changes, most of the land between the towns has been retained in a rural state.

Local Context

(See also Local Context Map, page 15)

The Jetty Road growth area is located adjacent to the existing urban area of Drysdale/Clifton Springs. It is separated from the adjacent residential area by Griggs Creek and Jetty Road. As a larger urban centre, Drysdale/Clifton Springs is able to provide number of commercial, community and education facilities for their hinterland. Whilst Drysdale and Clifton Springs have traditionally been recognised as two independent settlements, it has been Council's long term policy to link the two townships through promoting infill residential development. The residential area of Drysdale/Clifton Springs is generally comprised of low density single dwelling allotments.

The northern boundary of the site abuts the foreshore of Port Phillip Bay. Land to the west and south of the site is predominately used for rural/ agricultural purposes. The south west portion of the site abuts the Curlewis Golf Course.

Existing Land Uses

The land is currently used for agricultural purposes. The site has been cleared for grazing and contains little significant remnant vegetation. The site contains a number of rural properties with the larger holdings generally situated to the north of Coriyule Road while rural-residential style lots are located to the south of the Bellarine Rail Trail. There are number of homesteads and agricultural sheds scattered across the site.

Ownership Pattern

Title boundaries for the growth area are shown in the *Existing Property Title Boundaries* map, on page 18. The land adjacent to Geelong-Portarlington Road and at the southern portion of Jetty Road, south of the Bellarine Rail Trail, is held in fragmented ownership as the result of previous subdivision for rural living purposes.

The remainder of the subject area is representative of the traditional land use being for small and medium farming uses.

It is envisaged that the larger sites will be able to be subdivided and developed before the fragmented lots as these can be more readily connected to urban utility services. It is also often easier for larger holdings to be able to respond to the needs of drainage and access provisions.

Current Population

The 2001 ABS census records 7420 people living in Clifton Springs (which includes the settlement area of the Jetty Road growth area for Census purposes), with a further 1730 people living in the adjoining township of Drysdale. The combined population of Drysdale/Clifton Springs (including the Jetty Road growth area) in 2001 was just in excess of 9000 people, in 2007 it has an estimated population of a little less than 11,000 people.

Projected Population

The Australian Bureau of Statistics has forecast the population of Drysdale/ Clifton Springs to reach approximately 13,100 persons by 2022, representing a net increase of 2,500 persons and an average annual increase of 1.2%. This growth rate is considerably higher than the growth rate of 0.7% p.a forecast for the City of Greater Geelong.

Other neighbouring towns in the vicinity of the Jetty Road growth area are also forecast to have good residential growth up to the year 2022, including Leopold (1.3%) and Portarlington (1.7% p.a.).

Legend:

 GROWTH AREA BOUNDARY



Demographics

The age structure of Drysdale/ Clifton Springs suggests that the population is home to a large number of families and working age people. This may be attributed to the area having good access to employment markets and major shopping and entertainment destinations in Geelong, while offering sought after lifestyle opportunities due to the areas coastal location.

In 2001 the average household size for Clifton Springs was 2.5 persons and for Drysdale 2.8 persons. These figures were higher than the City of Greater Geelong average at 2.3 persons.

Information from the Department of Employment and Workplace Relations (September 2004) indicates that the Bellarine Statistical Local Area (SLA) (which includes Drysdale/ Clifton Springs) has a relatively low unemployment rate (7.8%) when compared with the SLAs of Geelong (8.5%), Geelong West (9.4%), and Corio Inner (11.7%). However the unemployment rate is higher than the broader Barwon Western District (6.7%) and Metropolitan Melbourne (5.5%).

The vast majority of residents in Clifton Springs (88%) and Drysdale (78%) live in detached dwellings (ABS Census 2001), although Drysdale also has a small market for flats/units/apartments (12% of residents). The area has a relatively low rate of unoccupied dwellings (6-8%), indicating strong demand for the existing stock.

DEVELOPMENT CONTEXT

The Growth of Geelong

There is a well-documented need for additional development to accommodate growth in the Greater Geelong region

The Department of Sustainability and Environment's *Victoria in Future* population forecasts predict the Geelong Region's population will increase from 254,732 in 2001 to 352,662 in 2031. It is incumbent upon Council to plan to accommodate this growth.

Residential Demand and Supply

There has been sustained demand for residential lots in the Drysdale/ Clifton Springs area over the past decade. This demand has increased in recent years especially with respect to conventional sized lots below 799m².

Information published by the Building Commission of Victoria indicates that on average 123 building permits have been issued in the study area each year during the period of 1998 to 2004 with a total of 859 new buildings approved during that

period. In recent years the majority of development approvals have switched from Clifton Springs to Drysdale. During the same period Leopold averaged 111 new buildings approvals per annum while Portarlington averaged 47 new building approvals.

Drysdale/ Clifton Springs offer an affordable mix of housing with relatively low prices for residential allotments when compared with Geelong and metropolitan Melbourne. This aspect combined with a well performing property market for established residences and strong population growth is expected to continue to drive demand in the foreseeable future.

Development of the Jetty Road growth area is likely to stimulate further demand due to the additional infrastructure and facilities to service the new community, in particular; shopping and retail facilities, recreational facilities, new bus routes and attractive areas of public open space.

An analysis of the residential market in the study area shows that continuing population growth is expected to take place over the next two decades, with an associated continuing demand for new residential properties. Forecast population growth to 2022 on existing residentially zoned land will generate a requirement for a further 1,880 new dwellings (and this estimate also takes into account the trend for a decline in dwelling occupancy rates). This expectation of continuing demand patterns for residential property is also reflected in the price of residential allotments and dwellings over the past decade or so, with the Clifton Springs and Drysdale areas recording significant growth in these variables. When combined with the special attributes of this general locality, especially proximity to Geelong and Corio Bay, it is evident that continuing demand for residential property can be expected.

Based on the demand considerations outlined above, a sustained 25% increase in the current take up rate is realistic, and would raise the long term building approval trend to 150 lots per annum. This take up rate assumes market demand from both the Geelong region and the wider Metropolitan Melbourne market.

Economic analysis for the period to 2022 indicates that potential demand would total approximately 2,000 lots on the Jetty Road site, assuming a market share to the site of approximately 75% of the sustainable take-up rate for the catchment estimated at 150 lots per year. On this basis, an initial provision of approximately 600 lots at the Jetty Road site would be taken-up by 2010, with a further 600 lots provided to 2015 and approximately 840 lots provided to 2022.

Overall, it would take approximately 25 years to develop the entire Jetty Road site, based on a 3,300 lot scenario at these take-up rates. Depending on market conditions, it may well be that the take-up period is less than indicated, and this outcome would be the likely result of the Jetty Road site being recognised among potential new residents as an attractive place to locate.

POLICY CONTEXT

This section should be read in conjunction with the "Policy Context Assessment", Tract Consultants, July 2006.

The formulation of the Jetty Road Urban Growth Plan has been guided by and is consistent with the State Planning Policy Framework and the Local Planning Policy Framework, as well as other planning strategies. In addition to providing guidance for the development of the UGP, these policies and strategies provide the strategic justification for development of the Jetty Road growth area. Outlined here are those policies and strategies of particular relevance to the Jetty Road Urban Growth Plan.

State Policy Context

The State Planning Policy Framework (SPPF) sets broad directions for planning and environment at the State level. This UGP is consistent with the principles outlined in clause 11 of the SPPF as it addresses those aspects of economic, environmental and social well-being affected by land use and development and provides for a net community and environmental benefit. Broadly, the principles of clause 11 are achieved as follows.

Settlement: the UGP provides for planned and sustainable township growth with provision for a variety of housing options, recreation and open space areas, commercial and community facilities and infrastructure.

Environment: the UGP takes steps to ensure the protection of air, land and water quality and the conservation of natural ecosystems, resources, energy and cultural heritage.

Management of resources: the UGP addresses the location, pattern and timing of development to assist in the conservation and wise use of natural resources to support both environmental quality and sustainable development over the long term. The UGP provides the basis for planning to protect waterways and water quality, and to minimise flood hazards, drainage infrastructure costs and downstream impacts, including on coastal and marine environments.

Infrastructure: The UGP will ensure that the development of urban physical and community infrastructure in the growth area is provided in a way that is equitable, accessible and timely. The UGP allows for the logical and efficient provision and maintenance of infrastructure, including the setting aside of land for the construction of future transport routes.

The UGP provides the basis for a development contributions plan to fund infrastructure, community services, public open space and the like.

Social needs: The UGP specifies land for a range of accessible community resources to support the development and maintenance of a community with adequate and safe physical and social environments for its residents.

In addition to those principles outlined in clause 11, this UGP is informed by and implements the policies set out in Clauses 12 to 19 of the SPPF.

Local Policy Context

The Municipal Strategic Statement (MSS) forms part of the Local Planning Policy Framework (LPPF) and provides the rationale for the policies and planning controls that form part of the Greater Geelong Planning Scheme. It is consistent with the objectives of Council's Corporate Plan – City Plan.

This UGP is consistent with and implements the policies of the LPPF by providing clear land use planning guidelines that will manage development of the growth area in a proactive and environmentally sustainable way.

In particular, it is consistent with the planning principles set out in clause 21.05 'Planning Principles'. Of particular relevance are those principles relating to; settlements, population and housing, natural environment, cultural heritage, the economy, rural areas, infrastructure, transport, commercial and retail and design and built form.

In addition, specific justification for the development of the Jetty Road growth area is found in clause 21.08, 'Urban Growth' and clause 21.33 'Drysdale/Clifton Springs'. Clause 21.08 states that Council's future urban growth directions include focussing future urban growth on the Bellarine Peninsula at Ocean Grove and Drysdale/Clifton Springs. Clause 21.33 contains the Drysdale/Clifton Springs Structure Plan which identifies the Jetty Road growth area (as defined in this UGP) as appropriate for future urban development.

Other Relevant Strategies

This UGP has been developed with specific reference to a number planning related strategies. These include; *The City of Greater Geelong Urban Growth Strategy*, 1996; *The Bellarine Peninsula Strategic Plan*, 2006; the *Bellarine Peninsula Recreation and Leisure Needs Study*, 2005; *Corio Bay Coastal Action Plan*, April 2005; the *City of Greater Geelong Open Space Strategy* and the *Coastal Spaces Recommendations*, 2006.

SUSTAINABLE URBAN GROWTH

Urban extensions are widely considered to be the most sustainable form of growth, where there is insufficient well-connected brownfield land. However, the benefits of an urban extension—no matter how sustainable—ought not to be at the expense of the previous 'edge' community, but ought to complement and add value to it to compensate for potential detrimental effects such as additional through traffic and the loss of a rural setting.

The Jetty Road growth area has many attributes from the perspective of creating a setting for a sustainable community, including its location alongside existing urban

infrastructure and its relatively close proximity to the employment opportunities and services offered by central Geelong.

The development of the Jetty Road growth area will be through staged rezoning of the land and the implementation of Development Plans for each of these stages. The UGP provides the basis for these development plans and establishes the overarching principles for development.

The preparation of the Jetty Road Urban Growth Plan has been guided by a number of objectives and principles for residential development, subdivision, sustainable growth and environmental considerations. These principles are based on best practice planning and the principles contained within the planning policy frameworks and incorporate policies and directions from a local level through to the State level.

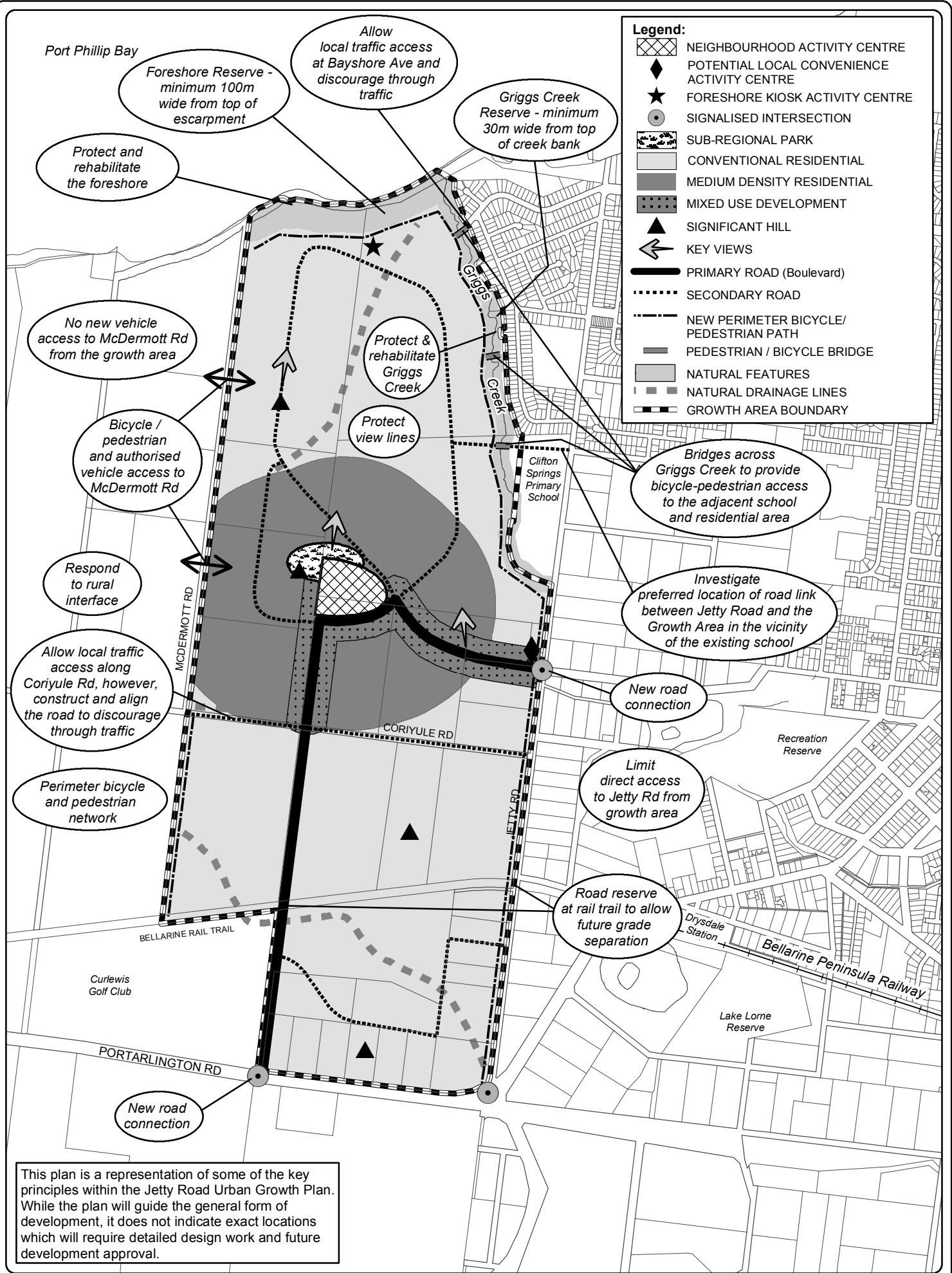
THE URBAN GROWTH PLAN

GROWTH AREA VISION

The Jetty Road urban growth area will be developed into a sustainable community that demonstrates best practice urban development. The relationship to the bay, connections to adjacent residential areas and the growth areas natural features will be enhanced to form a distinct urban character. By responding to the needs of the future community and managing sensitive interfaces, Jetty Road will become a highly sought after location for living, working and recreation, forming an attractive addition to Drysdale/Clifton Springs.

THE STRUCTURE PLAN

The *Jetty Road Growth Area Structure Plan* (Map 4) sets out the key structuring elements of the UGP. The infrastructure alignments and boundaries between land uses are indicative only and subject to refinement at the Development Plan stage.



JETTY ROAD GROWTH AREA STRUCTURE PLAN JETTY RD URBAN GROWTH PLAN Map No. 4



0 100 200 400 600 800 M

Prepared by City of Greater Geelong - 24 December 2008 Dwg 453
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

NATURAL ENVIRONMENT

This section should be read in conjunction with the background reports “Flora and Fauna Assessment, Clifton Springs” Brett Lane and Associates, June 2004; “Stormwater and Stream Rehabilitation Concept” Ecological Engineering November 2005; and “Preliminary Geotechnical Assessment” Chadwick Group Holdings, October 2004.

Key Issues

(See also Existing Vegetation Types, Map 5, page 31)

Landscape and Visual Character

The Jetty Road site is located adjacent to the foreshore and Griggs Creek. These features are environmentally significant areas that have the potential to contribute to the future residential character of the Jetty Road growth area.

The site in its existing state consists largely of cleared agricultural land and related farm buildings. The site has been used for grazing and is largely covered with exotic grasses, but does however contain some remnant grasses and larger trees.

The site itself is gently undulating, sloping to the south-west and to the eastern and northern boundaries. At the northern boundary of the site the ground slopes steeply towards the waters edge and is significantly eroded.

Griggs Creek runs along a deeply eroded gully on the eastern boundary of the growth area, adjacent existing residential areas. Containing water throughout most of the year the creek provides a natural feature on the site, valuable for both its aesthetic and ecological values.

The site enjoys high levels of amenity with views to the surrounding countryside and the Bay.

Foreshore Areas

The foreshore area referred to in this report is comprised of two parts; the foreshore reserve and the foreshore. The foreshore reserve is the area of land a minimum of 100m south of the break of slope at the foreshore. The foreshore itself is defined as that area of land to the north of the break of slope up to the mean water mark, and generally including the escarpment, ‘hanging wetlands’ and the beach.

The western portion of the foreshore is currently in private ownership, whilst the eastern portion of the foreshore, including the mouth of Griggs Creek, is in public ownership.

Within the foreshore there is a steep escarpment, dropping approximately five metres to a coastal platform of freshwater wetlands before the shore. This

escarpment has been affected by severe erosion. In some places attempts to mitigate the erosion by dumping soil and rubble on the eroded areas has been carried out, further degrading the area.

The history of coastal landslides and erosion in the Clifton Springs area and the similarity in geology, orientation, and exposure to sea conditions with that of the growth area indicates that it is probable that landslide activity and erosion will continue along the coastline of the Jetty Road growth area. Erosion to the coastal slopes is caused primarily by surface runoff, public access and storm surge.

Further issues to be resolved by the Clifton Springs Coastal Management Plan prior to any development of the foreshore and the foreshore reserve include:

- Further geotechnical investigation into the stability of the foreshore area.
- Stabilisation works of the cliff areas.
- Erosion management techniques including appropriate planting, lined cut-off drains at the top of the slopes to minimise runoff over the face and designated foot paths.
- Extensive planting and landscaping to stabilise the cliff areas.
- Protection of natural features including dunes, vegetation and cliff areas.
- Minimised pedestrian access through restricted and controlled access points.
- A single east-west pedestrian link and links from the foreshore reserve down to the foreshore.
- Using elevated boardwalks across areas with habitat significance.
- Preparation of a detailed management strategy identifying responsibilities and management practices.

Griggs Creek

Griggs Creek forms the eastern boundary of the northern half of the site, up to the point the creek meets Jetty Road (about 1.6 km in length). Along its length Griggs Creek has incised a gully up to about 6 metres in depth with typically very steep banks. However there appears to be no sign of landslide activity along the banks although there has been some erosion and superficial slumping of the banks.

The creek gully is densely vegetated and while it supports a range of indigenous vegetation, it is highly degraded by weeds. Some intact vegetation exists along the creek line in very small patches, such as at the mouth of the creek.

Griggs Creek forms an important role in the drainage of the site and land to the east of Jetty Road. However, urbanisation and vegetation clearance upstream of

the site has led to an increase in the frequency and magnitude of large flows, resulting in the heavy erosion of the creek.

Topography and Soils

(See also *Site Contours, Map 6, page 32*)

The *Preliminary Geotechnical Assessment, October 2004* study prepared by Chadwicks Geotechnical Pty Ltd found the site is underlain by the Moorabool Viaduct Sand formation comprising sand, clay, sandy clay, gravel and ferruginous sandstone. The southern section of the sites is overlain by Quaternary sand sheets.

History has shown that landslides in this area have been large in relatively flat slopes and slow moving and therefore of minimal risk to human life. However, future landslides may impact on the freshwater wetlands along the shore, may be aesthetically displeasing, perceived to be dangerous, and may require remedial work to steep scraps formed at the top of a landslide should one occur. The plastic clay layers occurring below the Moorabool Viaduct Sand formation near shore level and ground water appear to be the cause of instability. There are no reported landslides along the creek gully.

Flora

Brett Lane and Associates undertook a study of the growth area, north of the Bellarine Rail Trail, entitled *Flora and Fauna Assessment, Clifton Springs, June 2004*. The survey recorded a total of 63 plant species (not including garden plantings, cultivated species or species used in the shelterbelt areas). Of the species recorded, 59% were indigenous and 41% were exotic.

The survey identified four vegetation types on the site, as shown on map 5:

- *Vegetation type 1* encompasses remnant Grassy Woodland in three small areas. These areas are defined by the presence of mature River Red Gum with a ground layer largely dominated by weeds.
- *Vegetation type 2* occupied the creekline on the site's eastern boundary. This strip of vegetation supports a range of indigenous species but is highly degraded by weeds.
- *Vegetation type 3* includes the coastal vegetation along the narrow shoreline beneath the escarpment. This area comprises a degraded and fragmented example of the endangered Berm Grassy Shrubland, endangered Bellarine Coastal Complex (EVC 1001) and Vulnerable Plains Brackish Sedge Wetland (EVC 891).
- *Vegetation type 4* contains the remaining land within the study area, which is dominated by exotic vegetation. These areas have been cultivated and grazed.

Any disturbance or loss of native vegetation will be required to be offset under the Native Vegetation Management Framework (NVMF).

No threatened flora species were recorded during the flora and fauna surveys. The degree of disturbance to vegetation in the study area makes it highly unlikely that any threatened species would occur there.

Fauna

Based on the field assessment and a review of existing information, the study area is likely to support 158 species of fauna, including 24 species of mammals (seven introduced), 118 species of birds (eight introduced), nine species of reptile and seven species of frog.

The study area supports four habitat types:

- Cleared agricultural land
- Remnant woodland habitat
- Creekline habitat
- Other wetland habitat.

The Jetty Road growth area is highly modified from its natural state and the majority of the study area is not considered to support many species of terrestrial native fauna. Most of the threatened species found within the search area of the Atlas of Victorian Wildlife are indicative of fauna habitats within nature reserves and wetlands in the area, such as Lake Connemara, Ocean Grove Nature Reserve, the Western Treatment Plant at Werribee, and Lake Lorne. They are not considered to regularly occur on the property under investigation.

The study area may support two threatened species, the Growling Grass Frog and the Swift Parrot, which are both listed under the Environment Protection and Biodiversity Conservation Act 1999. Suitable habitat for the Growling Grass Frog occurs on the creekline and associated vegetation. Therefore, this part of the study area may be of potential national zoological significance. Further survey work in spring would be required to confirm if it is present or not.






The Swift Parrot may utilise patches of remnant eucalypts on the site. If this species were found regularly in the study area the study area would be of National zoological significance (criteria to determine significance is outlined in Section 4.1.3 of the background report *Flora and Fauna Assessment*). However, the limited extent and poor quality of habitats make it unlikely that the Swift parrot occurs regularly in the area and the River Red Gum areas probably do not qualify as of zoological significance.

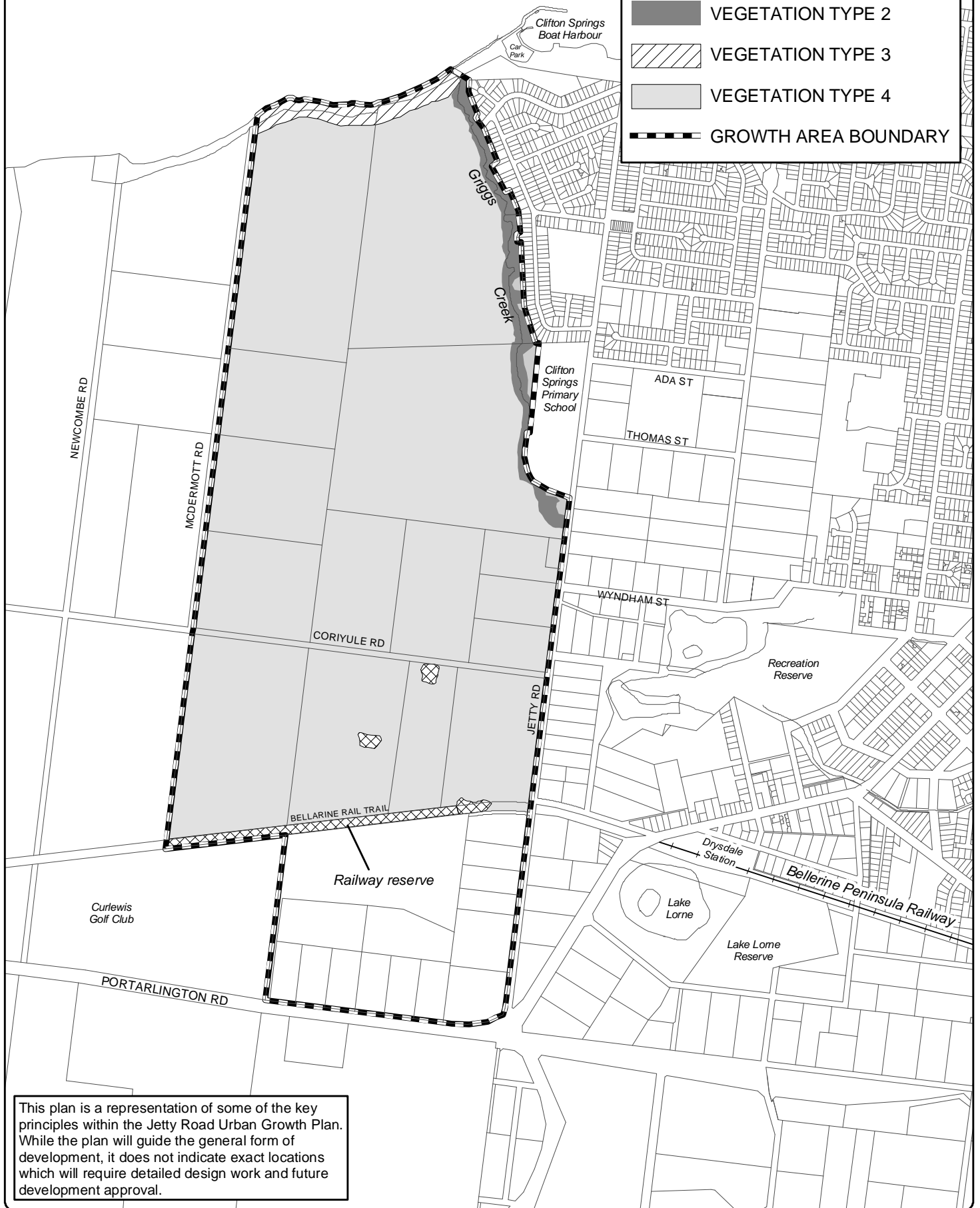
Contaminated land

Given the history of potato farming on the Bellarine Peninsula there is some risk of pesticide contamination in the Jetty Road growth area. Dieldrin is the organochlorine of most significance since producers added it to their fertilizer as a means of preventing parasite damage to their potato crops. The Department of Primary Industries advise that test results for the Jetty Road growth area show that the concentration of dieldrin in the soil ranges from 0.00mg/kg up to 0.54mg/kg. DDT levels ranged from 0.00 mg/kg in most cases, up to 0.20 mg/kg.

Port Phillip Bay

Legend:

-  VEGETATION TYPE 1
-  VEGETATION TYPE 2
-  VEGETATION TYPE 3
-  VEGETATION TYPE 4
-  GROWTH AREA BOUNDARY



This plan is a representation of some of the key principles within the Jetty Road Urban Growth Plan. While the plan will guide the general form of development, it does not indicate exact locations which will require detailed design work and future development approval.

EXISTING VEGETATION TYPES

JETTY RD URBAN GROWTH PLAN

Map No. 5



0 100 200 400 600 800 M



Prepared by City of Greater Geelong - May 2007
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

Legend:

— GROWTH AREA BOUNDARY



Taylor's Development Strategists
Bld 8, 270 Ferntree Gully Road
Notting Hill, 3168
Ph: 9501 2800 Fax: 9501 2844



0 0.05 0.1 0.2 0.3 0.4
Km



Prepared by City of Greater Geelong - May 2007 Dwg. No.
Although all due care has been taken to ensure that this document is correct, no warranty
is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

SITE CONTOURS JETTY RD URBAN GROWTH PLAN

Map No. 6

Natural Environment principles and objectives

The following principles and objectives should guide the development of the Jetty Road growth area:

(See also General Environmental Management, Map 7, page 38)

Principle 1: Protect and enhance the environmental values of the Jetty Road growth area.

Objective 1.1:

Mature or regenerating Eucalypts are to be retained in accordance with the Native Vegetation Management Framework.

Objective 1.2:

Areas of remnant native vegetation, including significant roadside vegetation and areas of endangered Berm Grassy Shrubland, endangered Bellarine Coastal Complex, Vulnerable Plains Brackish Sedge Wetland and River Red Gum woodland, must be protected, restored and enhanced.

Objective 1.3:

The layout of residential development should minimise the removal or fragmentation of native vegetation where possible.

Objective 1.4:

Where significant indigenous vegetation is removed, collection of seed, cuttings or divisions must be made (where possible) for use as propagation material for offset plantings.

Objective 1.5:

Planting of locally indigenous native species should be encouraged in new urban areas, particularly in the public domain.

Objective 1.6:

The planting of environmental weeds must be avoided.

Objective 1.7:

A flora and fauna survey must be carried out for that part of the growth area to the south of the Bellarine Rail Trail, prior to the rezoning or development of that land.

Objective 1.8:

Potential Swift Parrot habitat is to be retained as outlined in the background report *Flora and Fauna Assessment, Clifton Springs*, June 2004, by Brett Lane and Associates p/l and in accordance with the Native Vegetation Management Framework.

Objective 1.9:

Areas of Vegetation Type 1 should be restored to form part of a park network for the site.

- Vegetation Type 1 has high conservation significance according to the NVMF.

Objective 1.10:

Prior to development approval, Environmental Management Plans and Construction Management Plans that are in accordance with EPA publication No. 960 *Guidelines for Environmental Management – Doing it right on Subdivisions, Temporary Environmental Measures for Subdivision Construction Sites*, September 2004, will be required, to the satisfaction of Council.

Principle 2: The foreshore is to be protected and rehabilitated to strengthen its ecological and amenity values.

(See also 'Open Space and Recreation')

Objective 2.1:

A foreshore reserve is to be created south of and adjacent to the foreshore that encompasses land within a minimum of 100m setback from the break of slope of the foreshore.

- Development of the foreshore reserve must be consistent with the Clifton Springs Coastal Management Plan
- The foreshore reserve is to be opened up for public access and will form a key feature of the growth area. The foreshore reserve is to provide a buffer to the foreshore and will provide a conservation/open space area with an emphasis on retaining and enhancing existing native vegetation. It is intended to be for passive uses and conservation rather than active uses such as sports ovals and the like.
- Prior to the ownership of the foreshore reserve being handed over to Council, it should be developed with suitable passive recreation facilities to meet the needs of new residents to the satisfaction of Council. The provision and design of these facilities is to be consistent with the guidelines for new infrastructure included in the Clifton Springs Coastal Management Plan.

Objective 2.2:

The foreshore is to be rehabilitated and maintained in accordance with the Clifton Springs Coastal Management Plan.

Objective 2.3:

The foreshore is to be integrated with the open space network (subject to conservation and cliff stability) in accordance with the Clifton Springs Coastal Management Plan.

Objective 2.4:

Potential issues arising from coastal instability and erosion along the foreshore and foreshore reserve must be addressed as per the *Preliminary Geotechnical Assessment*, October 2004, Chadwick Group Holdings.

- A Landslide Risk Assessment is to be carried out to inform the application of an Erosion Management Overlay to the foreshore area.
- Any remedial works undertaken to minimise the risk of landslip will be required to ensure that the freshwater wetlands along the coast are not damaged.
- Any control of groundwater must ensure that the wetlands are not deprived of freshwater.
- Remedial works to mitigate erosion of the coastal slopes should include appropriate revegetation of the slopes, lined cut-off drains at the top of the slopes to minimise runoff over the face, and designated footpaths (elevated boardwalks) on the slopes and across the wetlands.
- These works are to be carried out at the cost of the developer, to the satisfaction of Council. Cost apportionment is to be addressed by the Development Contributions Plan.

Principle 3: Griggs Creek is to be protected and rehabilitated to strengthen its ecological and amenity values.

(See also section 'Open Space and Recreation')

Objective 3.1:

An open space reserve is to be created along the length of Griggs Creek, from Jetty Road to the foreshore reserve. The reserve is to be a minimum of 30 wide, measured from the top of the western creek embankment, based on the future location of the embankment once the creek has been rehabilitated.

- The reserve will be a major contribution to the open space network within the Jetty Road growth area.
- The reserve is required to provide a buffer to the creek as the creek forms an important part of the drainage network of the site.

- The detail of the setback and service access will be resolved through detailed landscape and engineering design, this must be completed prior to subdivision approval of the adjacent land, to the satisfaction of Council.
- The costs of these works and the provision of land are to be borne by the developer. Cost apportionment is to be addressed by the Development Contributions Plan.

Objective 3.2:

Griggs Creek is to be rehabilitated downstream of Jetty Road, in accordance with the *“Jetty Road Structure Plan, Clifton Springs, Stormwater and Stream Rehabilitation Concept, Interim Report”*, November 2005, Ecological Engineering.

The aim of this rehabilitation concept is to:

- Stabilise the bed of the channel to prevent further incision.
- Stabilise the banks of the channel to prevent bank erosion that leads to channel widening and instability.
- Improve safety for people in the riparian zone of the channel and increase the visual amenity value of the stream.
- Retain high value remnant vegetation and remove exotic weeds from the riparian zone.

The key elements of the rehabilitation concept are:

- Grade control structures to define the channel bed and stabilise incision.
- Elevation of bed level to the top of the ‘slot’ that has formed during the latest period of incision.
- Bank stabilisation by reprofiling to a geotechnically stable slope to reduce mass failure.
- Identification and protection of remnant indigenous vegetation and removal of weed infestation.

Objective 3.3:

A survey of Griggs Creek and the surrounding vegetation must be undertaken at the expense of the developer to determine if the Growling Grass Frog is present in the area. Should the Growling Grass Frog be present in the area, rehabilitation of the Creek and surrounds must be undertaken in such a way that it does not have any negative impact on the Growling Grass Frog.

Objective 3.4:

Water quality and aquatic biodiversity within Griggs Creek must be protected and enhanced (see also section *Flooding, Drainage and Utility Services*, below).

Principle 4: Public landscaping is to promote ecological sustainability and enhance the amenity and character of the growth area.

Objective 4.1:

The design of public open space is to employ the extensive use of local indigenous plant species.

- The preferred species will reflect the current indigenous vegetation on the site and that listed in the *City of Greater Geelong Zone 3 Indigenous Plants of Geelong Region* guide.

Objective 4.2:

Mature trees, particularly windbreak plantings, can be an asset to the visual character of local neighbourhoods and should be retained, preferably in the public domain, where they do not interfere with significant views or solar access to lots.



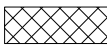

Principle 5: Ensure potential contamination issues are addressed prior to development of the site.

Objective 5.1:

At the time land within the growth area is rezoned, advice must be sought from the EPA with regard to whether or not an Environmental Audit Overlay (EAO) is required, with particular regard to Dieldrin and DDT contamination.

Port Phillip Bay

Legend:

-  FORESHORE RESERVE
-  GRIGGS CREEK RESERVE
-  OTHER SIGNIFICANT VEGETATION AREAS
-  GROWTH AREA BOUNDARY

Protect and rehabilitate the foreshore

Foreshore Reserve - minimum of 100m wide from top of escarpment

Griggs Creek Reserve - a minimum of 30m wide from top of creek bank

Protect and rehabilitate Griggs Creek

Significant vegetation to be protected

This plan is a representation of some of the key principles within the Jetty Road Urban Growth Plan. While the plan will guide the general form of development, it does not indicate exact locations which will require detailed design work and future development approval.

CITY OF GREATER
GEELONG

0 100 200 400 600 800 M



Prepared by City of Greater Geelong - May 2007
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

GENERAL ENVIRONMENTAL MANAGEMENT JETTY RD URBAN GROWTH PLAN

Map No. 7

HERITAGE

This section should be read in conjunction with the background report “Jetty Road Clifton Springs, Bellarine Peninsula: A Survey for Aboriginal and Historical Archaeological Sites”, Practical Archaeology Services, February 2005.

Key Issues

This section outlines the key issues and principles associated with the management of the cultural heritage in the Jetty Road growth area. Further detailed information is found in the background report, which sets out recommendations for management of sites of cultural heritage in the Jetty Road growth area.

Indigenous Cultural Heritage

An archaeological and heritage survey of the site was undertaken as part of the preparation of the Jetty Road UGP.

The survey for Aboriginal archaeological sites within the study area resulted in the location and extension of three previously recorded sites, and the recording of one new site. A further two sites were not located during the survey due to poor ground surface visibility or no access. The recording of these sites has been due to good ground surface visibility at various periods of time, usually in the form of ploughed paddocks. Therefore all of these sites have been disturbed through ploughing for many decades, or exposed through erosion such as along the Bay cliff top.

This survey revealed a number of Aboriginal artefacts across the site including waste artefacts and retouched or utilised flakes, cores and core fragments and a smaller amount of formal tools which are typical of those found on other sites in the area by several previous studies.

The three sites of significance identified within the growth area are known as “Baie Park 1 and 2”, which are of medium significance, “Jetty Road 2”, which is of medium significance and “McDermott Road 1”, which is of low significance.

Due to the close proximity of the site to the McLeod’s Water Holes and the strong likelihood of Aboriginal burials within the area and within any sandy extension of the watercourse, it should be noted that land in the vicinity of Wyndham Street and south, to below the railway line could be highly sensitive for Aboriginal archaeological material.

Aboriginal archaeological sites are protected by the Archaeological and *Aboriginal Relics Preservation Act*, 1972, and the *Aboriginal and Torres Strait Islander Heritage Protection Act*, 1984. Any disturbance to Aboriginal archaeological sites must first be approved by the Wathaurong Aboriginal Co-Operative Ltd., and Aboriginal Affairs Victoria.

Post Contact (European) Cultural Heritage

The following sites of European cultural heritage were located in the growth area by the archaeological survey and were assessed for their significance to the European cultural heritage of the Bellarine Peninsula.

“*Greenvale Farm*” homestead complex (H 7821-0112) is of at least local importance in the history of agriculture for the Bellarine Peninsula. The location of the farm complex is known, and it is believed that sub-surface evidence will exist.

The *Bellarine Flour Mill* site (H 7821-0114) is of regional importance as the first flour mill on the Bellarine Peninsula. The location of its foundations, and that of any of the associated buildings, would be highly significant for the cultural heritage of the area. The foundations of this site and any material cultural deposits would also be highly significant for the period of time this mill was in operation.

“*Coriyule Estate*” – shed and well (H 7821-0113) is of local and low significance, being part of the property infrastructure which has survived despite the loss of the associated orchard.

These sites have not been recorded in any Council heritage study.

A consent is required for particular works or activities, including excavation, in relation to an archaeological site. Under the *Heritage Act*, 1995, it is an offence to damage relics and archaeological sites, whether or not they have been included on the Heritage Inventory, without obtaining the appropriate permission from the Executive Director, Heritage Victoria.

An application for Consent to disturb or destroy an archaeological site is required to be made by the “Developer” to Heritage Victoria.

Heritage Principles and Objectives

The following principles and objectives should guide the development of the Jetty Road growth area with regard to cultural heritage:

Principle 6: Development is to be sensitive to sites of Aboriginal significance and will promote their on going conservation where appropriate.

Objective 6.1:

Any disturbance to the land within at least 100 metres of a known Aboriginal archaeological site requires a permit from the Wathaurong Aboriginal Co-operative Ltd.

Objective 6.2:

Prior to the commencement of development, a sub-surface testing project is to be undertaken for the identified significant sites to the satisfaction of Council.

- The sub-surface testing project could take the form of grader scrapes or ploughed transects to plough zone depth (c.30cm). The scrapes however should only be to a depth to remove the grass cover. The scrapes or ploughed transects should be directed by an Archaeologist, and be monitored by a Wathaurong Monitor and an Archaeologist to ensure that if any Aboriginal cultural material (e.g. stone artefacts) are revealed during excavation, appropriate identification and recording can occur. The cost of this testing is to be borne by the developer.
- The sub-surface testing project should be followed up approximately two weeks later with a re-examination of the sub-surface testing transects. This period of time should allow for rain, and settling of soil.
- Permits to undertake sub-surface testing should be obtained from the Wathaurong Aboriginal Co-operative Ltd, and then from Aboriginal Affairs Victoria, prior to any sub-surface testing being carried out.

Principle 7: Development will be sensitive to Post Contact (European) Cultural Heritage and will promote the on going conservation of areas of historic significance where appropriate.

Objective 7.1:

Prior to any subdivision within or immediately adjacent to the *“Greenvale Farm” homestead complex*, further research and field survey is to be undertaken in this area to determine the presence or absence of any remains of this complex.

Objective 7.2:

Prior to any subdivision within or immediately adjacent to the *“Bellarine Flour Mill site”*, further research and field survey is to be undertaken in this area to determine the presence or absence of any remains of this complex.

Objective 7.3:

Prior to any subdivision within or immediately adjacent to the *“Coriyule Estate” – shed and well*, recording of this site is to be undertaken, to the satisfaction of Council.

Objective 7.4:

Prior to any disturbance to any of these sites, a permit must be obtained from Heritage Victoria to allow any archaeological investigations or disturbance/destruction of an archaeological site.

RESIDENTIAL NEIGHBOURHOODS

This section should be read in conjunction with the background report “Residential and Commercial Supply and Demand Assessment”, Essential Economics, March 2005.

Key Issues

Neighbourhood Structure

The neighbourhood structure of the Jetty Road growth area is to reflect the principles outlined in this UGP.

Walkability

Greenfield residential development has typically been designed around the car, rather than walking and cycling. Car based development leaves those not able to drive or without the use of a car lacking ready access to basic needs—convenience shops and services, schools, essential community services and so on. This leads to detrimental impacts on:

- personal health, through reduced physical exercise,
- the environment,
- road congestion,
- road safety,
- social interaction, lessening social cohesion and capital, and
- personal security.

It is now considered best practice to design residential communities around walking and cycling. There are a number of key ingredients to making ‘walkable neighbourhoods’ work:

- a ‘larger’ number of ‘smaller’ centres—rather than a ‘smaller’ number of ‘larger’ centres—so that most homes are within a comfortable walking distance;
- sufficient residential density to achieve the necessary catchment to sustain local facilities;
- the minimisation of substantial, low-density uses within the walkable catchment of the neighbourhood centres; and
- the provision of a well-connected, safe and inviting network of walking and cycling routes, including footpaths on both sides of streets.

Housing Density

The plan for the growth area is based on the premise that many people are willing to walk up to ten minutes—approximately 800 metres—to reach local facilities if it is a pleasant walk. While not all dwellings in the growth area will be within 800 metres of social and retail facilities, all dwellings will be within 800 metres of community facilities such as parks. Walkable neighbourhoods serve to promote community integration .

Medium density housing is defined here as development with a density of at least 20 dwellings per hectare.

Conventional density housing is defined here as development with a density of at least 14 dwellings per hectare. This equates to an average lot size of approximately 550 sqm, able to comfortably accommodate conventional detached houses. Those residential areas that are not designated as containing predominantly medium density housing will generally comprise conventional density housing.

It is expected that the 'conventional density housing' areas will contain medium-density housing scattered throughout, as well as small areas of concentrated medium-density housing—close to local transit stops and parks. This will assist in achieving the minimum density where irregular sites result in inefficient layouts.

Housing Mix

It is best practice to mix different forms of housing. This avoids the creation of single-income-level 'ghettos' and promotes healthy interaction between people of different socio-economic backgrounds and age. The UGP should provide for a variety of housing types and price-points in order to provide suitable choices for a range of different needs, lifestyle preferences and income levels. This will ensure that the Jetty Road growth area attracts a diverse mix of people—of varied ages, ethnicity, and levels of socio-economic advantage, in households ranging from single-person to large families. This is the hallmark of a strong community. A comprehensive housing mix will also avoid the need for people to move away from their community as their housing needs change.

Residential Neighbourhoods Principles and Objectives

The following principles and objectives should guide the development of the Jetty Road growth area:

(See also Indicative Location of Medium Density Housing, Map 8, page 48)

Principle 8: Urban form should contribute to the health and wellbeing of residents and the environment.

The urban form of the Jetty Road growth area should demonstrate best practice examples of sustainable urban development by promoting walkability, community integration, and solar efficiency.

Objective 8.1:

Residential development must be organised to promote walkability by ensuring that:

- Activity centres are linked by pedestrian and bicycle paths to residential areas, parkland and community facilities.
- Pedestrian and cycle paths provide for a range of trip types and experiences by locating them along roads, in separate pathways, along drainage reserves and on the perimeter of the urban area.
- Subdivision is designed to ensure pedestrian permeability, including creating desire lines and direct, convenient and safe access.

(For a more detailed discussion of the pedestrian and bicycle paths network, see section relating to *Movement and Access*, below.)

Objective 8.2:

Subdivision design should respond to the site's topography and natural features to promote significant views within the growth area and incorporate solar access to lots.

Objective 8.3:

Subdivision design must comply with the best practice water sensitive urban design objectives as outlined in *Urban Stormwater – Best Practice Environmental Management Guidelines* (CSIRO, 1999).

- Water Sensitive Urban Design is more fully addressed in section *Flooding, Drainage and Utility Services*, below.

Objective 8.4:

The siting and design of individual dwellings must promote solar efficiency through appropriate siting of dwellings on blocks and northern orientation of living spaces and private open space.

Objective 8.5:

The use of environmentally sustainable building materials is to be encouraged.

Objective 8.6:

Harvesting of solar energy (eg. solar hot water) should be investigated as a standard requirement for all new buildings and public lighting in the growth area, as appropriate.

Objective 8.7:

Future development of the Jetty Road growth area should be well integrated with Drysdale/Clifton Springs, including road and pedestrian access to Wyndham Street and Jetty Road and over Griggs Creek.

This will allow the use of the existing community infrastructure, particularly at the outset of the Jetty Road growth area development, precluding the need for the early development of the Neighbourhood Centre.

Principle 9: Provide residential densities to support a comprehensive range of commercial and community facilities.

Objective 9.1:

Housing should achieve a minimum gross residential density of 15 dwellings per hectare across the whole growth area as per Clause 21.08 of the City of Greater Geelong Planning Scheme.

Objective 9.2:

Medium density housing, being a density of 20 dwellings per hectare, is to be encouraged within 400m of the neighbourhood centre, close to public transport, near public parkland, within mixed use areas and above shops within activity centres.

Objective 9.3:

Mixed use activity is to be encouraged along the primary road network within approximately 600 metres of the Neighbourhood Activity Centre, facilitating convenient access to a range of businesses (excluding retail), residential and community uses.

Principle 10: Support a comprehensive mix of housing types to support a diverse community and to meet the different and changing needs of future residents.

Objective 10.1:

Support a range of lot sizes dispersed throughout residential areas that allow the co-location of different housing types and household types.

Objective 10.2:

Support the development of retirement living, aged care and supported living facilities, particularly in medium density housing areas, to respond to the needs of older residents and to allow ageing in place.

Objective 10.3:

Support alternate housing models, particularly in mixed use areas, to provide opportunities for small, micro and home based business

Objective 10.4:

Prevent 'gated communities', which exclude continuous public access through large areas.

Objective 10.5:

Ensure the design of lot layouts and controls will enable further subdivision of lots to higher densities.

Objective 10.6:

Support residential development to respond to the proximity of and interface with the golf course.

Principle 11: Built form of residential neighbourhoods will be of high quality design, create a distinct sense of place and will reflect and enhance a seaside meets countryside character for future development.

The Jetty Road growth area should develop with its own identity and should seek to provide the best possible environment for its residents.

While the character of the Jetty Road growth area is an important consideration, character outcomes are secondary to design outcomes that promote ecologically sustainable development (eg, solar access, energy efficiency, Water Sensitive Urban Design), social cohesion (eg, Crime Prevention Through Environmental Design, walkability) and higher densities..

Objective 11.1:

Site coverage and building envelopes will retain adequate space for planting and allow the extensive use of indigenous trees.

Objective 11.2:

Encourage common design treatments in the public domain, including the Neighbourhood Activity Centre, that create a distinct sense of place and reflect and enhance the desired seaside meets countryside character.

Objective 11.3:

Encourage low, open style fencing.

Objective 11.4:

Provision should be made for additional street tree planting and a higher concentration of parks in areas where medium density housing is to be encouraged. This is to offset the limited planting opportunities in private gardens.

Objective 11.5:

Landscape character of open space and private areas should incorporate native species and contribute towards an overall high quality landscape.

Objective 11.6:

The location and design of the Neighbourhood Activity Centre and sub-regional park is to allow for views to the bay, as appropriate.

Objective 11.7:







Key view lines to the bay will be retained by the location of roads, parkland, reserves and pathways and the avoidance of buildings in these view corridors.

Objective 11.8:

To reduce land use conflict between rural and residential activities, provide opportunities for a landscaped transition and to reduce the visual impact of development on the landscape as viewed from outside the growth area, the following building setbacks shall apply to the land within the growth area:

- 20 metre no building setback (including dwellings, garages and outbuildings) from the eastern edge of road reserve of McDermott Road.
- 20 metre no building setback from the western boundary of the growth area and the western rural properties, between McDermott Road/Coriyule Road and the Bellarine Rail Trail.

Legend:

-  MEDIUM DENSITY RESIDENTIAL
-  CONVENTIONAL RESIDENTIAL
-  NEIGHBOURHOOD ACTIVITY CENTRE
-  MIXED USE DEVELOPMENT
-  PRIMARY ROAD (Boulevard)
-  GROWTH AREA BOUNDARY

Encourage medium density residential development within 400 metres of the Neighbourhood Activity Centre

Encourage medium density residential development within mixed use areas

Encourage medium density residential development close to public transport and park land

This plan is a representation of some of the key principles within the Jetty Road Urban Growth Plan. While the plan will guide the general form of development, it does not indicate exact locations which will require detailed design work and future development approval.

COMMUNITY INFRASTRUCTURE AND ACTIVITY CENTRES

This section should be read in conjunction with the background report “Residential and Commercial Supply and Demand Assessment” Essential Economics, March 2005.

Key Issues

Existing Community Facilities

The Jetty Road growth area is well serviced by the adjacent towns of Drysdale and Clifton Springs where a range of community and private facilities satisfy many of the needs of existing and projected future residents. A new 24 hour police station in Ocean Grove services the Bellarine Peninsula and other emergency services are located nearby.

Local facilities within Drysdale and Clifton Springs act as a focal point for the existing community providing a forum for social interaction and leisure and recreation activities. As shown in *Map 9*, Drysdale/Clifton Springs are well serviced by existing facilities including three secondary colleges, three primary schools, a civic precinct, arts facilities, six sports clubs, two health centres and two golf courses.

The Drysdale Town Centre is at the top of the local activity centre hierarchy and has a strong neighbourhood centre role including a major chain supermarket (Safeway) as well as a reasonably comprehensive range of support retail and services including restaurants, hairdressers, pharmacies, banks, real estate agents etc. Given its size and role, the Drysdale Town Centre is used by residents of Clifton Springs and Drysdale, as well as the rural hinterland and nearby towns including Portarlington and Leopold.

Future Trade Area

The primary trade area to be served by a Neighbourhood Activity Centre in the Jetty Road growth area is intended to be limited to the growth area. The balance of Drysdale/Clifton Springs will provide a secondary trade area. This classification reflects the need to support the regional hierarchy of activity centres. In accordance with the existing retail hierarchy, any ‘centre’ proposed for the Jetty Road Growth Area must fall below the existing Drysdale Town Centre in the local activity centre hierarchy. The Jetty Road Neighbourhood Activity Centre is to focus on providing for the day-to-day needs of the local community rather than serving a broader regional or sub-regional catchment or having a substantial tourist component. Further, the existing residential area of Drysdale and Clifton Springs already has a strong relationship with the Drysdale activity centre.

Composition of Neighbourhood Activity Centre

The UGP provides for a Neighbourhood Activity Centre with commercial floor space up to 5,000m² including a limited range convenience supermarket (approx. 2,500m²), retail specialities (approx. 1,500m²) and non retail commercial (approx. 500m²)

In order to provide some long term planning flexibility for the site, an additional allowance of 500m² has also been provided to allow for retail and commercial uses which have not been foreseen at this time; any increase in floorspace at the centre above 4,500m² will need to be considered on its individual merits at the appropriate time.

Community services and infrastructure are also to be provided within or in close proximity to the Neighbourhood Centre, in accordance with Principle 15 on page 56.

Location of Neighbourhood Activity Centre

One of the key principles of the Jetty Road UGP is walkability and pedestrian access. A central location for the main neighbourhood centre is therefore required in order to provide as large a walkable catchment in the new growth area (the principle trade area) as possible. Further, a central location with good pedestrian access will also reduce the demand for car parking within the neighbourhood centre.

As a general principle, the most successful activity centres are located on busy streets. As the Jetty Road UGA develops, the proposed central location will be accessed by the main collector road network and with high levels of exposure and access.

Whilst Jetty Road currently holds quite a substantial volume of traffic as a principle access route into the Drysdale/Clifton Springs area, it is expected that at full development, the major north south road into the growth area from the Geelong-Portarlinton Road will accommodate a similarly high number of vehicles per day. Therefore the central location of the neighbourhood centre is preferred as it will be exposed to a sufficiently high volume of traffic to ensure that it is viable from a retail point of view, and will still meet the requirements of good planning, such as enabling ease of pedestrian access for the Jetty Road growth area community.

A central location will aid in serving the new resident catchment, principles relating to walkability, be advantaged by the relationship to the adjacent sub-regional park, allow for views to the bay and allow for medium density housing within a convenient walkable catchment.

Activity Centre Design

A street-based environment that forms an integral part of the public domain is critical in encouraging the development of a robust mixed-use centre. An important

element of this is encouraging the provision of diverse spaces for a mix of business types.

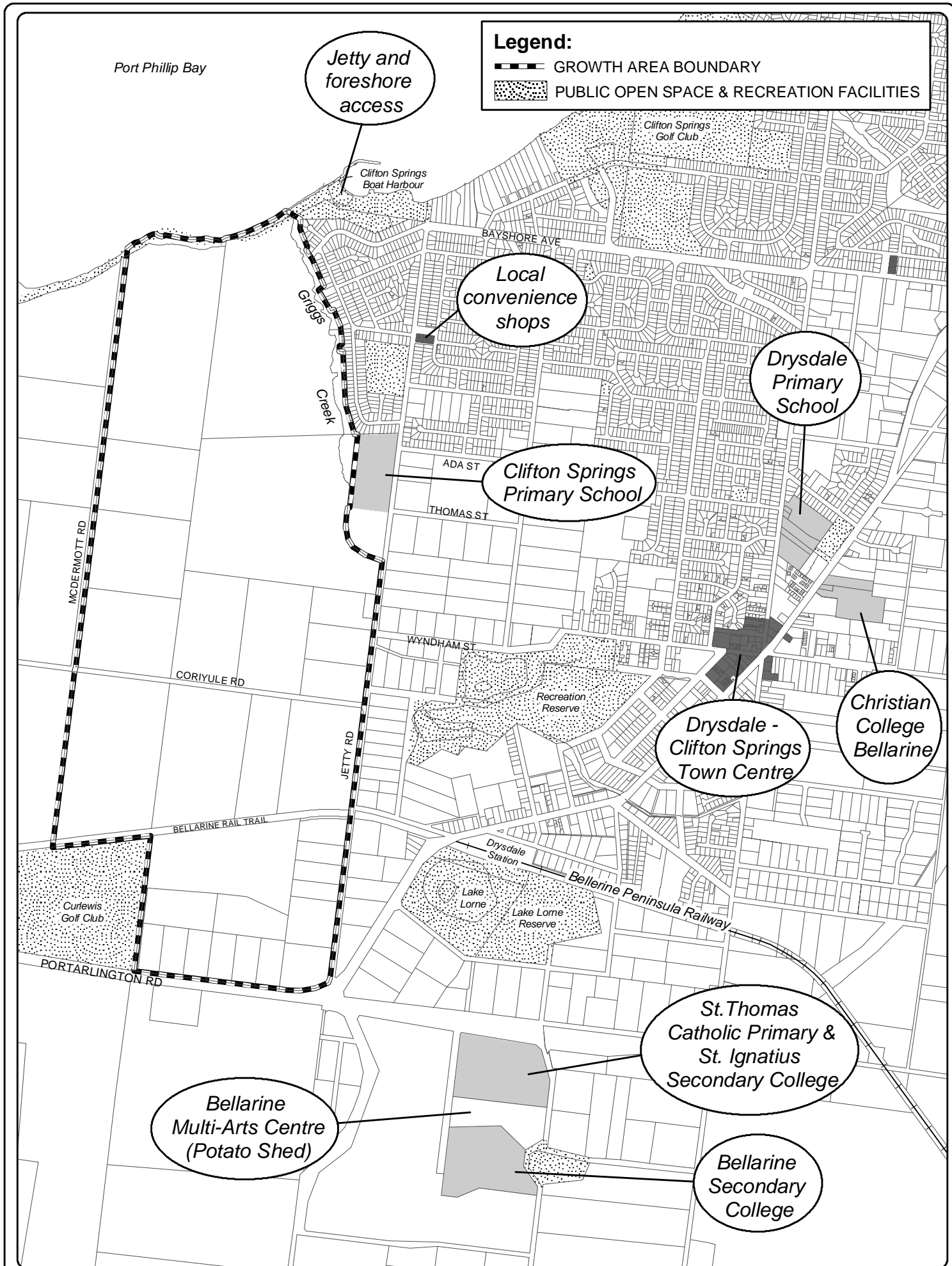
Healthy, robust activity centres are public mixed-use centres that contain a range of uses, including retail, entertainment, office, community and residential uses. These activity centres stand in contrast with the single-use shopping centres or privately owned malls often found in late 20th Century urban areas. Public mixed use centres:

- provide an important focus for communities by increasing opportunities for social interaction;
- enable trip combining;
- concentrate demand and therefore efficiency of public transport services;
- result in safer places by incorporating uses active at different times of the day and week; and
- are more robust, due to the range of potential tenants.

Educational Facilities

There are a number of schools in close proximity to the Jetty Road growth area. The Clifton Springs Primary School is located adjacent to the eastern boundary of the Jetty Road growth area and is expected to service the new residents of the Jetty Road growth area as well as the residents of Clifton Springs and Drysdale. A Catholic Primary School and a public Secondary College are located south of the Jetty Road UGP area. The Drysdale Christian College and the Drysdale Primary School are also located in Drysdale.

The Department of Education and Training (DEAT) plans the future development of State schools on a twenty-year time frame. It adopts a yield of 0.64 students per household to calculate the population threshold required to support a school. A minimum of 600 students is required to support the construction of a new primary school facility and a student population of 1000 is required to support the development of a secondary school. DEAT is aware of the proposed UGP and estimates that at full development the Jetty Road site will demand an additional 450 primary school places. DEAT has indicated that there is potential for the Clifton Springs Primary School site to be temporarily fitted with re-locatable buildings, and depending on the increase in enrolments, the site provided with permanent buildings. DEAT has provided advice that at this point they do not consider that a new school site will be required within the Jetty Road growth area.



EXISTING ACTIVITY CENTRES AND COMMUNITY INFRASTRUCTURE JETTY RD URBAN GROWTH PLAN

Map No. 9

CITY OF GREATER
GEELONG

0 100 200 400 600 800 M

Prepared by City of Greater Geelong - May 2007
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

Community Infrastructure and Activity Centres Principles and Objectives

The following principles and objectives should guide the development of the Jetty Road growth area:

(See also Future Activity Centres and Community Infrastructure, Map 10, page 57)

Principle 12: Activity Centres are to be provided to service the needs of future residents.

(Further guidelines regarding the location of activity centres can be found at Principle 13.)

Objective 12.1:

The size, location and type of activity centres are to reflect their primary purpose of servicing the needs of residents of the growth area.

Objective 12.2:

Provide for a Neighbourhood Activity Centre with commercial floor space up to 5,000m² including a limited range convenience supermarket (approx. 2,500m²), retail specialities (approx. 1,500m²) and non retail commercial (approx. 500m²)

Objective 12.3:

The Jetty Road Neighbourhood Activity Centre is to fall below the Drysdale/Clifton Springs town centre shopping centre in terms of retail hierarchy.

Objective 12.4:

A Local Convenience Centre may be provided along Jetty Road, limited to small businesses (totalling up to a combined approximate 500m² leasable floor space). A Local Convenience Centre should be based on the 'corner store' model, possibly allowing for up to 4 – 5 retail shops and ancillary small businesses. It may contain, for example, a multi-purpose store for convenience food items, newsagent, dry cleaning and café. Due to the proximity of the school conflicting land use uses such as a fast food and liquor store should be avoided.

Objective 12.5:

Provide a Kiosk (of maximum 200m² leasable floor space) adjacent the foreshore reserve including limited facilities in the form of a convenience store and kiosk and/or restaurant.

Principle 13: The siting of activity centres is to provide convenient access to services for future residents.

Objective 13.1:

The Neighbourhood Activity Centre is to be located centrally to the urban growth area, and be adjacent to a significant hill and sub-regional park that is to be above the 55 AHD contour.

Objective 13.2:

A Local Convenience Centre may be provided adjacent to the corner of Wyndham Street and Jetty Road:

- A Local Convenience Centre should be located so as to build upon existing facilities in this region such as the school and the recreation facilities to the north. Wyndham Street allows traffic to move to and from Drysdale and Clifton Springs.
- The centre should provide a gateway function for the Jetty Road development area.
- The centre should be easily accessible, located on the pedestrian / cycle network.
- The site may be zoned to facilitate its use as a Local Convenience Centre.

Objective 13.3:

Provide a Kiosk adjacent to the foreshore reserve:

- The foreshore Kiosk should be located outside of the public open space reserve setback as to not reduce the amount of open space for foreshore landslide/erosion protection, recreation, biodiversity protection and enhancement.
- The Kiosk should be located centrally along the reserve, at the junction of the street and pedestrian network, potentially making use of a natural highpoint so as to offers views of both the coastline and inland urban areas.
- The local access road along the foreshore needs to be designed to accommodate the Kiosk outside the public open space reserve setback and be aligned on the south side of the facility as to not impede public access to and from the foreshore reserve.
- The Kiosk should be easily accessible, located on the pedestrian / cycle network.

Principle 14: Activity centres are to be designed according to best practice in urban design and so as to encourage community cohesion.

Objective 14.1:

All activity centres within the growth area should be oriented to support active street frontages, street-based community interaction and pedestrian safety.

Objective 14.2:

Activity centres are to be developed as public spaces, not privately owned 'shopping-centres' or enclosed malls; ie, all public space within the activity centre is to be publicly owned.

Objective 14.3:

Priority should be given to environmentally sustainable development via innovative application of development principles that consider energy and water consumption/reuse and waste minimisation.

Objective 14.4:

Activity centres should contribute to creating a strong sense of place within the Jetty Road precinct, through the use of distinctive and consistent built form, public spaces, materials, colours and furniture, to the satisfaction of Council. This can be achieved as follows:

- Activity centres are to employ contemporary and responsive architectural design that sets the standard for design and materials used throughout the Jetty Road site.
- Landscaping should be of a high quality and play a role in creating a sense of place and identity for each activity centre.

Objective 14.5:

Car parking in the Neighbourhood Activity Centre is to avoid negative impacts on the amenity and walkability of the centre.

Objective 14.6:

Facilitate a mix of use types to develop along primary roads within 600 metres of the Neighbourhood Activity Centre and along the extension of Wyndham Street.

Principle 15: Ensure the provision of Community Infrastructure to service the needs of future residents.

Objective 15.1:

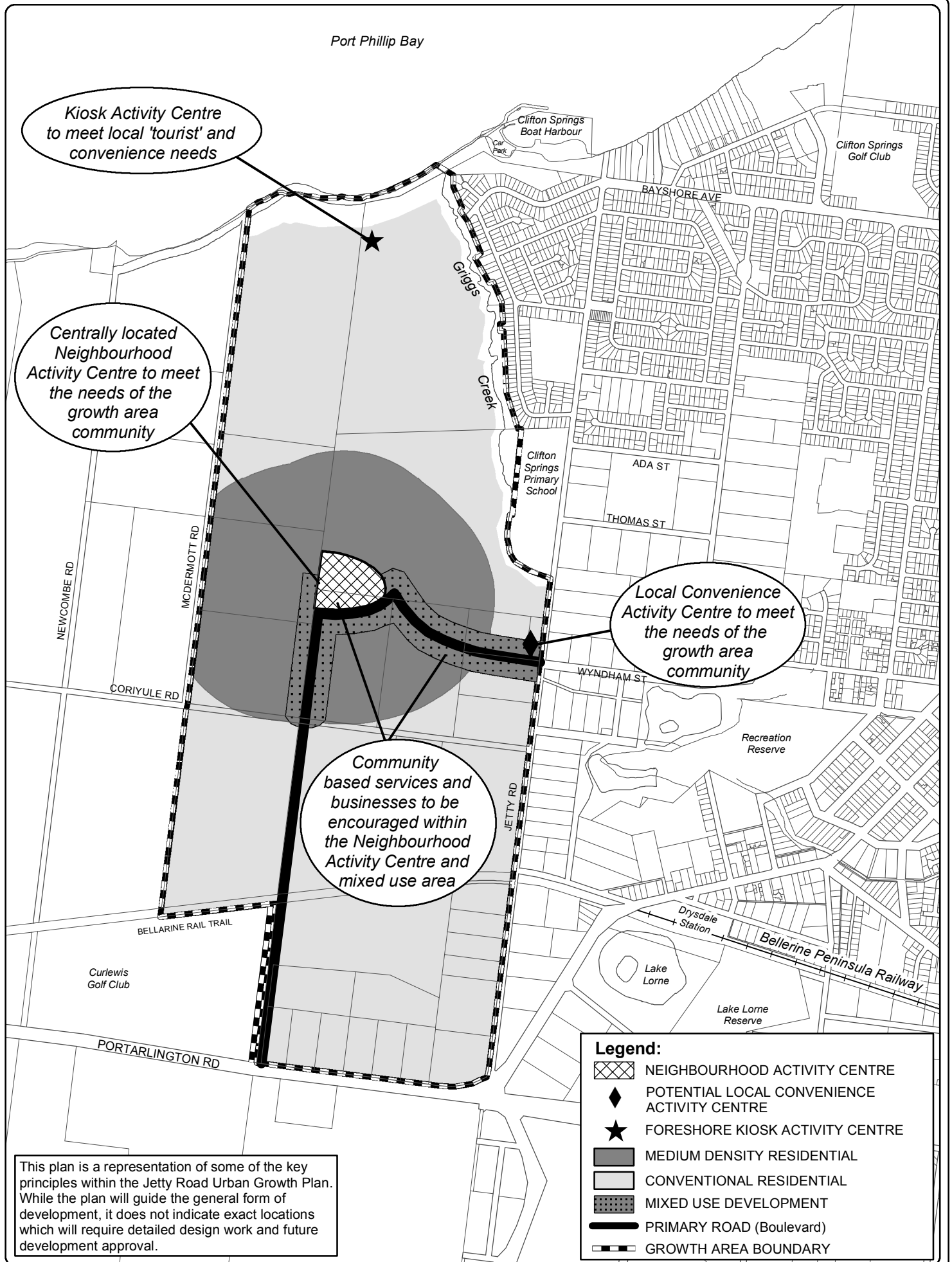
Community services and infrastructure are to be provided within and in close proximity to the neighbourhood activity center, to the satisfaction of Council. They may include:

- Joined up (or in hub formation) children's services including 90 places for kindergarten, childcare and occasional care, as well as for allied maternal, child health and other specialist and outreach pediatric and other children specialist services, and adjoining open space and outdoor play areas (children's service infrastructure should be sufficient to meet the needs of the local community).
- A neighbourhood house level facility of at least 500sqm built as a flexible space with the capacity to offer multi-user opportunities and allowing for a range of community uses from meetings to playgroups to indoor recreation activities, including a kitchen facility appropriate to the proposed building uses, and linked to the children's services hub.
- Cost apportionment is to be addressed by the Development Contributions Plan.

Objective 15.2:

The design and location of community services should be to the satisfaction of Council and should:

- Cater for as broad a range of community uses as practicable.
- Meet DHS regulations providing for 3.3sqm of indoor space per child and 7sqm of outdoor space per child.
- Provide secure parking for pushers and bikes.
- Avoid pedestrian/vehicle conflict by allowing for safe drop off and pick up for people using the centre.



FUTURE ACTIVITY CENTRES AND COMMUNITY INFRASTRUCTURE JETTY RD URBAN GROWTH PLAN

Map No. 10

OPEN SPACE AND RECREATION

This section should be read in conjunction with the section 'Natural Environment' (above), and the background report: "Flora and Fauna Assessment, Clifton Springs" Brett Lane and Associates, June 2004.

(See also Existing Public Open Space Map 11, page 60)

Key Issues

The Role of Open Space

Open space performs various functions within a community, including conservation of biodiversity and accommodation of utilities and services. The following open space functions have particular relevance to the quality of an area's social life:

- accommodating recreational activities;
- contributing to the sense of livability and the appeal of the area for residents and visitors; and
- providing locations where unforeseen demand for social services can be met.

Significant health benefits flow from increased physical activity. As a result, provision of adequate open space and recreational facilities within the growth area would contribute to the formation of a healthy community. Moreover, awareness is growing of the importance of sport to community life. Sport and recreation provide opportunities to make and maintain friendships and can help to give a sense of belonging. Both of these aspects are important to a person's mental health and wellbeing.

Existing Recreational Facilities

Recreation and Public Open Space

A number of leisure and recreation facilities and sites are available in proximity to the site: the Curlewis Golf Club, town sport complex, Clifton Springs Golf Course, Bellarine Rail Trail (used by walkers, cyclists and horse riders), squash, tennis, croquet and netball facilities, bowling clubs, playgrounds, skate park and the Jetty Road marina.

The foreshore at the north of the site (the beach and escarpment) is an area of high natural amenity. However, it is currently eroded, with much of it overrun by weeds and thorns. As a result of its current state and the fencing separating it from the adjoining public land, public access is limited. The foreshore and the area adjacent the foreshore does however provide the potential to form part of an open space network.

Similarly, Griggs Creek is under utilised, being eroded and uninviting, with limited access. It is however, also a potentially positive feature in the site and could be easily integrated into the open space network of the Jetty Road growth area.

As outlined in the *Natural Environment* section, 'Vegetation Type One', shown in map 5 on page 31, is of high conservation significance. These vegetation units, located generally in the south of the growth area should be restored to form part of a park network for the site.

Bellarine Rail Trail

Bisecting the south of the site is the Bellarine Rail Trail. The Bellarine Rail trail generally follows the route of the Geelong-Queenscliff rail line. This historical rail originally provided a 33km connection between Geelong and Queenscliff and operated up to 1976. Since then the Bellarine Peninsula Railway operates between Drysdale Railway Station and Queenscliff Railway Station for both steam and diesel trains. This service is a tourist facility and primarily operates on weekends and public holidays only.

The Rail Trail now provides a walking and cycling link between Geelong and Queenscliff and forms an important part of a larger pedestrian/cycle network around the Bellarine Peninsula.

Proposed Open Space

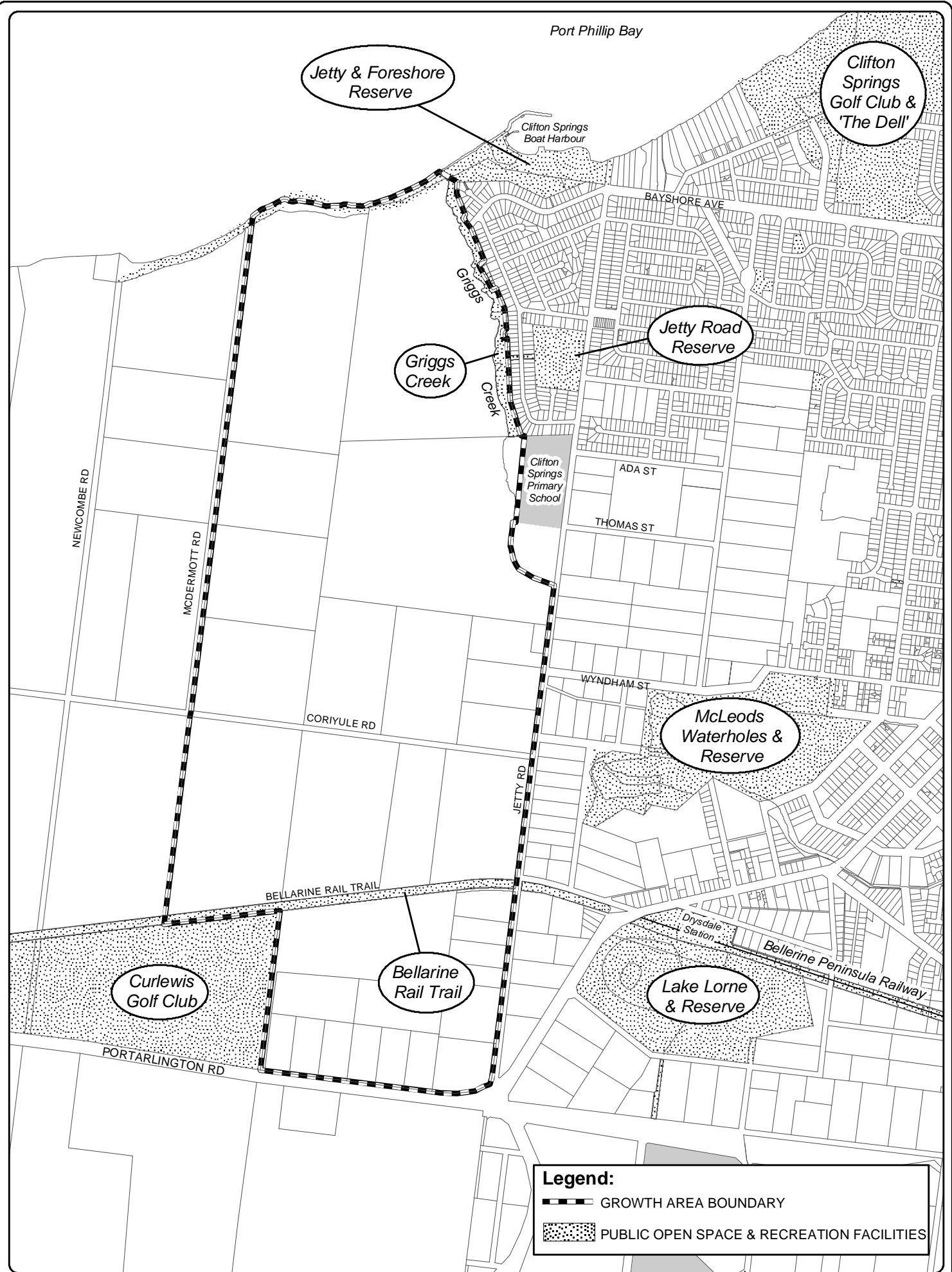
Open Space Contribution

The City of Greater Geelong has adopted an aim of achieving a minimum open space contribution within the City's growth areas of 10%. The appropriateness of this figure is reinforced by the City of Greater Geelong *Study of Open Space Networks* and the *Bellarine Peninsula Recreation and Leisure Needs Study*, and will be included in Council's new MSS.

The open space network will provide numerous opportunities for sport, leisure and recreation.

Open Space Linkages

The size of linear and linkage open space will be determined by the key purposes and location. Spaces used for recreational purposes can generally be narrower than those used for other purposes and may well be far longer than those established for example, to protect streamside habitats or to provide wildlife movement corridors. Areas reserved for natural habitat purposes are to support sustainable ecosystems.



EXISTING PUBLIC OPEN SPACE JETTY RD URBAN GROWTH PLAN

Map No. 11

CITY OF GREATER
GEELONG

0 0.1 0.2 0.4 0.6 0.8 Km



Prepared by City of Greater Geelong - May 2007
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

Open Space and Recreation Principles and Objectives

The following principles and objectives should guide the development of the Jetty Road growth area:

(See also *Future Public Open Space, Map 12, page 65*)

Principle 16: Provide a public open space contribution of at least 10% of unencumbered land within the growth area.

Principle 17: Open space will be located and designed to provide maximum access and amenity to the residents of the Jetty Road growth area, retaining and preserving the positive features of the existing landscape.

Objective 17.1:

The design and management of public open space should be consistent with the principles outlined in the *City of Greater Geelong – Study of Open Space Networks* August 2001.

Objective 17.2:

A variety of open space areas should be provided to cater for active and passive uses.

Objective 17.3:

Local parks of at least 0.5 hectares and containing play equipment are to be provided within 400 metres walk of all dwellings, to be funded by the developer.

Objective 17.4:

A large central park of at least 2 ha should be provided adjacent the neighbourhood activity centre, including the natural high point of the site and providing views to the bay. Cost apportionment is to be addressed by the Development Contributions Plan.

Objective 17.5:

Where possible the location of parks should take advantage of high points to maximise views to the bay and surrounding rural land. Notwithstanding this, local parks should be located on reasonably flat land where possible.

Objective 17.6:

A publicly owned reserve adjacent to the foreshore is to be created as part of the Jetty Road growth area network of open spaces, as outlined in the *Natural*

Environment section. This reserve does not form part of the 10% open space contribution.

Objective 17.7:

An informal park incorporating a playground should be provided along the Griggs Creek creek corridor and also along the foreshore, near the foreshore Kiosk, as outlined in the *Natural Environment* section.

Objective 17.8:

All parks are to be edged by streets and/or development frontages, and must not be bordered by back fences.

Objective 17.9:

Open Space areas should be co-located with stormwater capture, treatment and storage facilities so as to provide for minimum watering requirements of the open space areas. This may include above/below ground tanks and irrigation systems, to Council's satisfaction.

Principle 18: Provide linkages between public open spaces and key destination points.

Objective 18.1:

Use road, drainage corridors and other reserves to provide direct, safe and convenient linkages from open space areas to key destination points.

Objective 18.2:

Allocation of the 10% open space contribution between parks and linear open space it to be to the satisfaction of Council.

Objective 18.3:

Create and strengthen natural habitats, including vegetation linkages along Griggs Creeks, key drainage lines and roadsides, using key iconic local native tree species.

Objective 18.4:

Pedestrian links should be provided across Griggs Creek providing access to the nearby community facilities/shops and primary school, as outlined in the *Movement and Access* section.

Objective 18.5:

The open space network should link into the existing open space infrastructure of the Bellarine Rail Trail and those open space networks in the adjacent suburbs.

- This will maximise the utility of the Jetty Road growth area network and assist in the integration of the growth area with the surrounding community.

Principle 19: Specific areas of public open space are to be subject individual treatments, appropriate to their role and location.

Objective 19.1:

The sub-regional park is to cater for passive uses and may include facilities such as a children's play park and seating.

Objective 19.2:

The foreshore and the foreshore reserve are to be dedicated to passive use and conservation rather than active uses, such as sports ovals.

Objective 19.3:

The design of the foreshore and foreshore reserve, including car parking, paths, boardwalks and revegetation, along with the provision of public facilities, are to be consistent with the Clifton Springs Coastal Management Plan.

Objective 19.4:

The Griggs Creek reserve is to provide a walking and cycling track along the creek and form part of the Jetty Road growth area open space network.

Objective 19.5:

The Bellarine Rail Trail is to link into the Jetty Road growth area public open space network, both within the site and along the western edge at McDermott road recreation path extension, and along the eastern edge, to the Griggs Creek open space reserve. These links should provide a direct connection between the rail trail and the foreshore area.

Objective 19.6:

A development plan is to include a traffic and access plan identifying the location of road/rail intersections along the rail trail. The treatment of road/rail intersections will be resolved during the development plan process and must be to Council's satisfaction.

Objective 19.7:

There is to be no vehicle access across the rail trail between Jetty Road and the new primary north-south access road to the west of the site, (pedestrian crossings may be developed).

Objective 19.8:

Development of the Jetty Road growth area must not jeopardise or limit the future use of the rail reserve for heavy or light rail.

Objective 19.9:

McDermott Road is to form a pedestrian and bicycle link in the Jetty Road growth area open space network.

Objective 19.10:

McDermott Road is to be substantially retained in its existing rural state and general vehicle traffic is not to use it for access to the Jetty Road growth area.

Objective 19.11:

Housing adjacent McDermott Road should be orientated to provide passive surveillance of McDermott Road. Fencing along McDermott Road should provide good visual permeability.

Objective 19.12:

Vegetation planting along McDermott Road must ensure pedestrian security and perceptions of safety, retaining an open feel with good visual permeability.

Objective 19.13:

Pedestrian and bicycle (and authorised vehicle) access to McDermott Road from the growth area is to be provided at a minimum of 600 metre intervals, with access ways being large enough to contain a “mini-park” that allows for authorised vehicle access as well as creating a wide, attractive and visually permeable pathway between McDermott Road and the residential areas.

Objective 19.14:

A minimum 5m wide open space reserve for a pedestrian and bicycle route is to be provided as a projection of McDermott Road to the south, to join the Bellarine Rail Trail. This should be located within a 20 metre no building setback and will contribute to a buffer between residences and adjacent rural activity. This is to ensure development and revegetation is consistent with the guidelines above for McDermott road, ensuring passive surveillance of the path and also to improve security for housing that is adjacent to the path.

Legend:

-  FORESHORE RESERVE
-  GRIGGS CREEK RESERVE
-  SUB-REGIONAL PARK
-  SIGNIFICANT HILL
-  NATURAL DRAINAGE LINES (may form linear reserves)
-  INDICATIVE CATCHMENT BOUNDARIES FOR LOCAL PARKS OF AT LEAST 0.5 ha WITHIN 400m WALKING DISTANCE OF ALL RESIDENTS
-  LINEAR OPEN SPACE
-  GROWTH AREA BOUNDARY

Foreshore Reserve - minimum 100m wide from top of escarpment

Griggs Creek Reserve - minimum 30m wide from top of bank

A centrally located sub-regional park of at least 2 hectares

Open space reserve a minimum of 20m wide linking McDermott Rd to the Bellarine Rail Trail

Local parks of at least 0.5 hectares within 400m walking distance of all residents

This plan is a representation of some of the key principles within the Jetty Road Urban Growth Plan. While the plan will guide the general form of development, it does not indicate exact locations which will require detailed design work and future development approval.

FUTURE PUBLIC OPEN SPACE JETTY RD URBAN GROWTH PLAN

MOVEMENT AND ACCESS

This section should be read in conjunction with section 'Recreation and Openspace', above, and with the "Curlewis Drysdale Proposed Structure Plan Transport Provisions and Traffic Engineering Assessment" TTM Consulting, November 2005.

(See also Existing Road Network, Map 13, page 71)

Key Issues

Street Network

Streets perform many functions. They do not merely carry traffic and provide vehicular access to adjoining properties, but also provide for most walking and cycling, and form the setting for a wide range of active and passive social interaction. These 'other' functions are fundamental to the health of the community and of its individuals (see section *Residential Neighbourhoods*). Therefore, it is critical that the street network is designed to provide an appropriate balance between these various uses.

The key elements in designing pedestrian-friendly streets are:

- ensure streets are addressed by building fronts, rather than back fences, to provide an attractive edge and natural surveillance;
- avoid very wide carriageways, dominated by traffic;
- minimise the speed of traffic, to lessen the likelihood of pedestrians feeling unsafe when walking along them;
- provide frequent opportunities for pedestrians to cross;
- provide generous footpaths;
- incorporate kerbside parking, to provide a buffer between pedestrians and moving traffic; and
- provide large street trees, to soften the 'hard' appearance of the road.

The width of streets can be reduced by dispersing traffic into a large number of roads, spaced evenly across the development, rather than concentrating it in a small number of very busy roads.

Existing Road Network

The Jetty Road growth area has frontage to Geelong-Portarlington Road, Jetty Road and McDermott Road. There are other relatively minor roads within the growth area, although these are not significant in the context of this UGP.

Geelong Portarlington Road

The Geelong Portarlington Road is a standard rural highway cross-section with sealed shoulders and abuts the growth area over a frontage of approx 800m. Eight separate titles currently have direct frontage and direct access to the road.

Other than the construction of a signalised intersection and an increase in traffic volumes, the development of the Jetty Road growth area is expected to have little impact on the function of the Geelong-Portarlington road, especially given its role as a highway.

Jetty Road

Jetty Road has a road reserve width of 20m and forms the eastern boundary of the growth area for a distance of approx 1.6km between Geelong-Portarlington Rd and Griggs Creek. Over this section it comprises side table drains and grassed verges with a bitumen sealed carriageway varying in width from 7.0m at the southern end to approximately 6.5m near Griggs Creek. Further to the north, through the existing Clifton Springs residential development, the carriageway is kerbed on both sides and has a width of approx 10.2m.

Bay Shore Avenue

Bay Shore Avenue is a residential street located at the north of Clifton Springs and ends at Griggs Creek, at the north east corner of the Jetty Road growth area. It has a 20 metre road reserve and a 7.3 metre carriageway. Its northern naturestrip is 5.2 metres wide while the southern naturestrip is 7.5 metres wide. There are no footpaths. In the context of Clause 56, the dimensions of Bay Shore Avenue and therefore the level of service able to be provided are that of a high order Access Street Level 2 or a lower order Connector Road Level 1.

Bay Shore Avenue has been designed to provide connection to the Jetty Road growth area. The existing road is truncated at the Griggs Creek streamside reserve, designed in the early development of Clifton Springs in a manner that catered for possible future extension to the west.

A local road crossing of Griggs Creek at Bay Shore Avenue is required in order to create permeability for both existing and new residents. The local road network on the Ingles land is to be designed in a manner which heavily discourages the use of Bay Shore Avenue for anything other than local traffic movements. The extension of Bay Shore Avenue will require a two-way creek crossing either bridging or culvert as dictated by the geology of the crossing site and the stream flow characteristics.

Bay Shore Avenue is not to be used for heavy construction traffic during development of the growth area.

Coriyule Road

Coriyule Road bisects the growth area in an east-west direction and is a well formed Rural Local Road. The road connects the rural and rural living areas of Hermsley in the west, to the Drysdale township. Coriyule Road consists of a 6.0 metre gravel (composite granitic sand/crushed rock) pavement in sound condition, with shallow table drains and fairly well grassed verge and naturestrip area. The road reserve is a nominal 20m width. Coriyule Road may play some role in the future transport network of the growth area as an east-west link across the growth area to the south of the proposed neighbourhood centre. However, in its current form an increase in traffic has the potential to cause rapid deterioration of the road.

McDermott Road

McDermott Road forms part of the western boundary of the Jetty Road growth area. McDermott Rd is a rural formation with a stabilised 6 metre wide gravel pavement and a total road reservation width of approximately 20 metres. The northern 500 metres (approximately) of McDermott Rd is an unformed track meandering within the road reserve leading to the cliff top area. The road is classified as a Rural Local (Gravel) for the southern 1.2km of its length and a Limited Access Track for the remaining 500 metres to the north, to the foreshore.

McDermott Road will continue to provide access to four rural frontages on the west side of the road reserve and the foreshore. It will not be required to provide access to the Jetty Road growth area once the final stage of development of the growth area is complete.

Wyndham Street

Wyndham Street meets the Jetty Road growth area at a 'T' intersection at Jetty Road. It is the main street that leads between the growth area and Drysdale shopping centre. It has a standard rural cross-section with a sealed width of approximately 6 metres, centrelined and with gravel shoulders over the first 900metres east of Jetty Rd. The balance of the road to the Drysdale shopping centre is fully constructed kerbed urban road with a carriageway width of approximately 9.8 metres.

Public Transport

Currently public transport facilities comprise a mix of commuter services and tourist services. Commuter buses run along the Geelong-Portarlington Road from Geelong to St Leonards and stopping at many of the towns along the route. The service currently operates 7 days per week and the scheduling varies throughout the day. A school bus interchange is located at Drysdale. The Bellarine Peninsula Railway operates between Drysdale Railway Station and Queenscliff Railway Station. This service is a tourist facility and primarily operates on weekends and public holidays.

While it is likely that private car-based travel will continue to be the dominant mode of transport for the foreseeable future, despite increasing fuel prices, car use is a major consumer of fossil fuels and a significant source of greenhouse gases. A focus on cars as the primary mode of transport also isolates the substantial proportion of the community who cannot drive or do not have ready access to a car. Further, alternative modes of travel such as walking and public transport promote social interaction which, in turn, fosters a sense of community.

Therefore, it is critical that the UGP promotes and facilitates public transport for reasons of both environmental sustainability and social equity.

The growth area should provide access to:

- buses for regional trips, eg. to Geelong;
- buses for sub-regional trips, eg. to Clifton Springs, Drysdale and other major towns on the Peninsula; and
- local community bus services, for special needs groups.

Key elements of a successful local public transport service are:

- convenience—linking places that people want to travel between;
- speed—at least comparable with travel by private car;
- reliability;
- safety—for all types of people at all times of day and night; and
- comfort.

In order to achieve this, local public transport services must have comfortable vehicles and well-lit and sheltered stops at convenient locations.

Bellarine Rail Trail Potential

The Bellarine Rail Trail corridor forms a direct link to the main rail infrastructure in Geelong and is already functional on the balance of the line between Drysdale and Queenscliff. To create a dedicated corridor such as currently exists (that has demonstrated capabilities, no major earthworks, no alignment or grade issues, adequate real estate at station sites and no real planning obstacles), would be a very expensive and time consuming task for Council.



The net gains for energy efficiency and environmental outcomes of reinstating a rail service would be substantial. Increasing fuel prices and traffic congestion are progressively making commuting from distance less attractive or unfeasible.

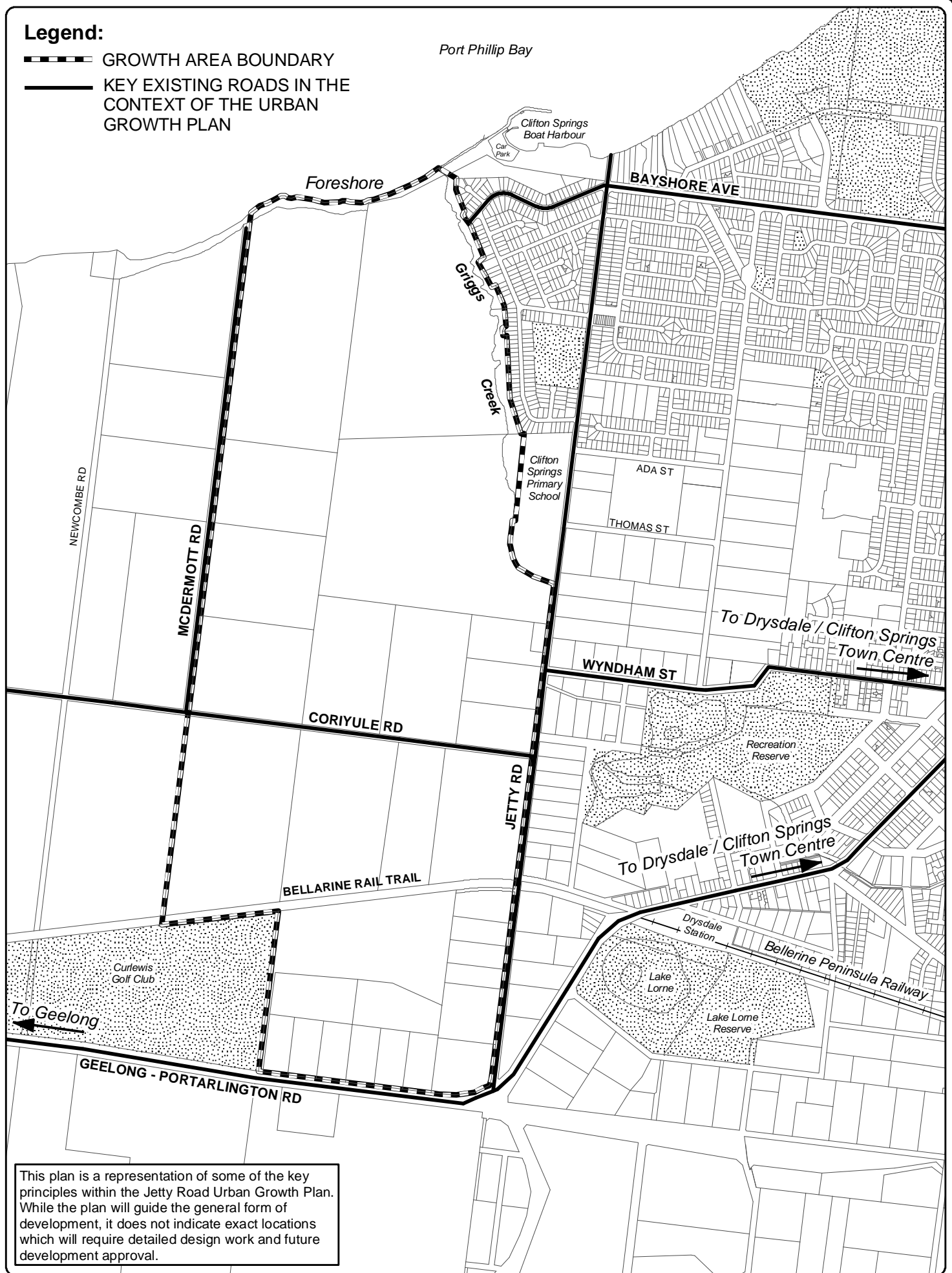
Preserving this corridor will put Council in a strong position for lobbying government when the variables of cost, potential patronage, tourism opportunities, freight etc approach viable levels.

Reducing Car Reliance

The general principle for the design of the Jetty Road growth area is that every street is a cycling street. The network of open space links and shared paths will provide for safe and efficient pedestrian movement throughout the Growth Area. The network will also serve to create green links between the major areas of remnant vegetation, implementing one of the key initiatives of the *Draft G21 Geelong Region Plan*.

Legend:

-  GROWTH AREA BOUNDARY
-  KEY EXISTING ROADS IN THE CONTEXT OF THE URBAN GROWTH PLAN



This plan is a representation of some of the key principles within the Jetty Road Urban Growth Plan. While the plan will guide the general form of development, it does not indicate exact locations which will require detailed design work and future development approval.

Movement and Access Principles and Objectives

The following principles and objectives should guide the development of the Jetty Road growth area:

(See also Future Road Network, Map 14, page 82, and Future Pedestrian and Bicycle Network, Map 15, page 83)

Principle 20: The Internal Primary Road Network and local streets are to provide well defined, safe and efficient access to, and distribution of traffic throughout the Jetty Road growth area in a manner that responds to the natural environment and topography of the site, while not compromising residential amenity.

Objective 20.1:

A road network should be provided across the growth area, aligned to provide connectivity to adjoining areas and convenient access to the activity centres.

Objective 20.2:

The local street network should be highly inter-connected with most local streets connected at both ends, but should also be developed in such a way that they do not create undesirable vehicular through movements across the growth area.

- Any road network must be supported by a traffic study that can demonstrate the limitations on vehicle flow volumes to achieve an acceptable rate commensurate with this objective.
- Local area traffic management devices may be used to discourage through traffic.

Objective 20.3:

The location and direction of major roads are to support a subdivision pattern that is informed by and enhances the natural topography, landscape, views and potential for the sharing of solar access for residential properties with an east-west orientation.

Objective 20.4:

The road network is to ensure that local roads do not become desirable routes through the growth area ('rat running'), in particular, between Jetty Road and Geelong-Portarlington Road, and for using Coriyule Road for anything other than local traffic.

Objective 20.5:

The local road network at the north of the growth area must be designed in a manner which discourages the use of Bay Shore Avenue for anything other than local traffic movements.

- Bay Shore Avenue is not to be the primary access point to the northern part of the growth area in the long term.
- Bay Shore Avenue is not to be used for heavy construction traffic during development of the growth area.
- Traffic analysis of any road network proposals must be provided that demonstrates that these objectives have been achieved.

Objective 20.6:

The road network must be supported by a full and proper road traffic safety audit and traffic study that assigns a traffic volume range to each road commensurate with its position in the road hierarchy.

- This must also apply to staging plans to ensure interim milestones in development are able to function in a safe and efficient manner without undue adverse impact on the existing residential amenity.

Objective 20.7:

The road network must be cognisant of the natural topography and key views of the site.

Objective 20.8:

The road network must result in minimal impact on existing transport networks and the amenity of existing residential and agricultural areas.

Objective 20.9:

A new primary north south access road to the urban growth area from the Geelong-Portarlington Road is to be created and landscaped as the identifiable “gateway” to the growth area, capable of safe and efficient management of full development traffic generated by the growth area.

- Carriageway widths are to reflect the predicted traffic volumes of the completed development and the access needs of abutting lots.
- The road will attract full signalisation at the highway and Major Traffic Control Items (MTCI's) at key points along its length, at full cost to the development.
- As the major entry point, the road reserve must be constructed and landscaped to create a safe and efficient primary access road to distribute traffic to the growth area, with direct access to the neighbourhood centre, but be expansive enough to accommodate an aesthetic avenue of landscaping with vegetation of considerable scale.
- The newly created intersection is to be well sited in relation to highway intersection design parameters.

- Construction works in the form of minor pavement widening, associated drainage, kerbing and full construction of any service road facility including outer separator landscaping will be required of the development.
- Timing for the development of this road is addressed in the section of this report relating to Staging.

Objective 20.10:

A Primary road link to Wyndham Street must be provided from the Jetty Road growth area to provide convenient and direct access to the Drysdale-Clifton Springs Town.

- Although the Drysdale-Clifton Springs shopping centre is focussed on High Street, Clifton Springs Rd, Murradoc Road and Collins Street, Wyndham Street is currently sited and identified as an appropriate “back-door” to the existing significant carparking servicing the super market and the centre in general.
- Any increase in traffic on Wyndham Street will need to be quantified to determine if a proportion of the cost of upgrading will need to be included in any developer funded works for the growth area.

Objective 20.11:

Development of the growth area is not to result in an increase in traffic volumes on Mc Dermott Road.

- Direct vehicular access to individual lots is to be prevented and a method of preventing legal frontage that would otherwise provide rights of access must be implemented.
- Providing access points approximately of 600m apart for bicycle, pedestrian and authorised vehicles as part of the overall transport network.
- Whilst there is no expectation that Mc Dermott Road will require full pavement construction (other than the intersection with Coriyule Road), the road reserve will require works to improve the formation in order to accommodate a cycling/pedestrian shared pathway, design flexibility for surface levels of the abutting lots, local drainage and a significant plantation. The nature of these works will not necessarily preclude some road pavement works to stabilise the existing carriageway.
- The intersection construction at Coriyule Road for a distance of approximately 30 m is to prevent the transport of loose road metal into the intersection area.
- Further treatment of McDermott Road is addressed in section ‘Open Space and Recreation’, above.

Objective 20.12:

A turning bowl or “T” shaped terminating pavement capable of accommodating a truck executing a 3-point turn is to be provided at the northern end of the McDermott Road road reserve.

Objective 20.13:

Bay Shore Avenue is to be extended across Griggs Creek to link the Jetty Road growth area to Clifton Springs, creating permeability for both existing and new residents.

- The Development Plan Overlay accompanying any future residential rezoning of this land should include a requirement for a full engineering report to indicate whether a bridge across Griggs Creek can be constructed without impacting on the stability of the area or damaging any nearby properties.

Objective 20.14:

Coriyule Road is to maintain its status as a rural access road and as an urban link to the Hermsley rural living community.

- Design of the road network is to discourage traffic generated within the growth area and/or Clifton Springs from exiting or passing through the growth area via Coriyule Road. However, a link must be maintained with the internal primary network such that the rural living community to the west in Hermsley is able to access the Drysdale town centre and the Jetty Road growth area neighbourhood centre without the need to use Geelong-Portarlington Road. The transport network does not need to rely on the existing Coriyule Road to be continuous for conveying traffic through the growth area.
- It will be necessary to fully construct Coriyule Road over whatever lengths are required by the final road network within the growth plan area plus a distance of 50 meters beyond the intersection with Mc Dermott Road.
- The role of Coriyule Road as a higher order link is not supported, and the final adopted Development Plan must consider over which sections the existing road reserve alignment is relevant.
- Traffic volumes must remain at a level that can be accommodated by the existing gravel seal pavement.

Objective 20.15:

A road link is to be created between Jetty Road and the growth area in the vicinity of the Clifton Springs Primary School, subject to the outcome of discussions with the Department of Education and Training.

Objective 20.16:

Widening of the Jetty Road road reserve is required to accommodate an off-road shared bicycle-pedestrian link and significant landscaping on the west side.

- This widening would be of sufficient width to accommodate the service road and pathway, or in the absence of this, a plantation reserve and pathway.
- Sufficient widening of road reserve land is also required at the railway reserve intersection with Jetty Rd in the form of a “half diamond” to provide for possible future grade separation thus leaving options open for future re-introduction of heavy rail.

Objective 20.17:

Direct vehicular access to Geelong-Portarlington Road from residential lots, is to be prevented, with service road or internal access being encouraged.

Objective 20.18:

Direct vehicular access from residential lots to Jetty Road south of Wyndham Street, is to be prevented, with service road or internal access being encouraged.

Objective 20.19:

Road reserves must be sized to match the level of service expected of each road's position in the hierarchy, and increased where the dictates of shared or on-road pathways, landscaping requirements, public transport needs or WSUD elements require additional space to function safely and efficiently.

Objective 20.20:

Road cross sections, intersections, parking facilities, bus stops and other design details are to be designed and constructed to Council standards or in the case of alternative design responses, that such responses are acceptable to Council's engineering department

Objective 20.21:

An approved landscape theme is to be developed to assist in delineating the position of each road in the road hierarchy as well as capturing and enhancing the landscape and viewscape features of the site, to the satisfaction of Council.

Objective 20.22:

Road network design is to provide sufficient road reserve area adjacent the Bellarine Rail Trail rail reserve to enable future grade separation of rail and road traffic at crossing points, including Jetty Road.

Objective 20.23:

Where lots on local roads abut or are opposite future drainage reserves, public open space parks, the coastal reserve or the rail trail, design techniques for

ensuring frontages provide passive surveillance of public spaces must be employed.

Objective 20.24:

All streets are to be edged by development frontages or parks; streets are not to be edged by visually impermeable fences (such as side or rear fences).

Objective 20.25:

Continuous boulevards are to be discouraged for local roads.

Objective 20.26:

Linear crescents are to be encouraged for local roads.

Objective 20.27:

Dead end streets and court bowls are to be minimised through the centre of the growth area.

Objective 20.28:

“T” head courts linked by reserves on the edge of natural features, open space or urban boundary in order to provide for pedestrian permeability are to be encouraged. Where “T” head courts are provided ensure that turning movement dimensions allow for the retention of kerb-side parking and access for Council's single operator waste collection vehicles.

Principle 21: The proper function of intersections is to be ensured through the location, design and provision of intersection treatments.

Objective 21.1:

The proper function of the Geelong-Portarlington Road/New Access Road intersection is to be ensured by the provision of signals, widened road reserve and construction of a re-designed intersection treatment.

- Works will include all modifications to the highway including, signals and standards, turn lanes, pavement widening, kerbing, linemarking, intersection lighting, advanced direction signing, safety and regulatory sign changes and landscaping.

Objective 21.2:

Ensure the proper function of the Jetty Road / Geelong-Portarlington Road Intersection by the provision of signals, widened road reserve and construction of a re-designed intersection treatment, subject to approval by VicRoads.

- It is not expected that the round-a-bout will serve the intersection adequately with full development of the UGP area and that with imbalanced flows and increased pedestrian/cycle movement across Geelong-Portarlington Road, signalisation will be required.

- Intersection redesign and full signalisation will be a shared cost between the UGP area developers and Council, with the proportion of which will be determined by the agreed funding mechanism that will include timing or warrants.

Objective 21.3:

The proper function of the Wyndham Street/Jetty Road intersection is to be ensured by the provision of signals, widened road reserve and construction of a re-designed intersection treatment.

- Timing for signals will be dependant on staging of development and subsequent predicted traffic volume warrants being achieved.

Principle 22: No development or infrastructure in or adjacent the Jetty Road growth area is to in anyway compromise the potential to re-introduce heavy rail or light rail on the existing railway reserve currently denoted as the “Bellarine Rail Trail”.

Objective 22.1:

Vehicle crossings of the Bellarine Rail Trail must be limited to only Jetty Road and the proposed entry road from the Geelong-Portarlington Road.

Objective 22.2:

The road reserve at new and proposed vehicle crossings of the Bellarine Rail Trail is to be of sufficient width and design to allow for the future grade separation of the road and rail trail to the satisfactory of the rail authority.

Objective 22.3:

The location and design of subdivided lots, buildings, infrastructure and other development must not compromise the potential re-introduction of heavy rail or light rail on the existing railway in any way.

Objective 22.4

Dwellings adjacent the Bellarine Rail Trail must not back on to the Bellarine Rail Trail and must be separated from it by a road or reserve.

Principle 23: Provide access to a safe and convenient public transport service in order to promote transport options for all residents, encourage the use of more sustainable forms of transport and reduce car reliance.

Objective 23.1

Require a public transport plan as part of a development plan that indicates routes and stops, and mechanism to ensure the provision of public transport to the urban growth area.

Objective 23.2:

Secondary roads within the Jetty Road growth area should be able to accommodate standard busses to ensure accessibility to public transport.

Objective 23.3

The subdivision layout and street design of the Jetty Road growth area should allow for the provision of a road based public transport service, ie, buses, to pass within 400 metres walk of all dwellings, to the greatest degree practicable, and easily and conveniently link in with existing public transport routes in adjoining areas.

Objective 23.4:

Future public transport routes must directly service the neighbourhood activity centre, other key locations within the site and the adjoining primary school.

Objective 23.5:

The location and design of public transport stops is to be in accordance with generally accepted best practice, including:

- Stop spacing and location is to balance the need to minimise walking distances to stops with the need to minimise delays due to stopping and starting.
- Stops are to provide a high level of passenger amenity, including bicycle parking, real-time information, good lighting and compliance with the Disability Discrimination Act.

Objective 23.6:

Additional local specialised bus services should be provided to cater for special needs, such as “night rider” and community buses.

Objective 23.7:

Public transport services should be provided prior to the occupation of new dwellings in residential areas.

Principle 24: Provide or access to a safe and convenient network of pedestrian and bicycle routes for both commuting and recreation.

Objective 24.1:

The detailed design of the road and pedestrian/bicycle network is to be a requirement of any future Development Plan Overlays.

Objective 24.2:

Primary and secondary roads will have designated bicycle lanes and should include appropriate cycle facilities at intersections.

Objective 24.3:

Local streets will be designed to be easily shared between cars and bicycles.

Objective 24.4:

The bicycle network should include a 'loop' around the growth area, creating a continuous link along the foreshore, Griggs Creek, the west side of Jetty Road, the Bellarine Rail Trail and McDermott Road.

Objective 24.5:

The pedestrian and bicycle network must be well-lit and overlooked by adjacent development to ensure the safety and perception of safety for the users.

Objective 24.6:

Development is to be prohibited from 'backing onto' the recreation routes. This will be supported by the preference towards low fences and dwellings overlooking the street.

Objective 24.7:

Streetscapes should be softened through generous nature strips along the pedestrian footpaths, planted out with native vegetation.

Objective 24.8:

Traffic management and road and street treatments must create a safe and convenient environment for pedestrians and cyclists.

Objective 24.9:

A comprehensive pedestrian and bicycle path network should be provided, incorporating designated bike/foot paths along streets, off-road recreational trails through parks and drainage reserves, and integrated with existing and proposed external municipal bicycle network links.

Objective 24.10:

Shared paths should run through the open space areas to allow easy non-motorised movement through the site.

Objective 24.11:

A network of off road recreational walking and cycling trails should be developed across the whole growth area (as shown in Map 15, page 83, *Future Pedestrian and Bicycle Network*) that:

- Utilises linear open space corridors linking the foreshore, Griggs Creek, McDermott Road and the Bellarine Rail Trail.
- Provides a reserve along the eastern side of Jetty Road to accommodate a separate walking / bicycle path between the Geelong-Portarlington Road and the beginning of the Griggs Creek reserve.
- Provides a reserve along the southern projection of McDermott Road to the Bellarine Rail Trail, adjoining the rural land to the west, within an easement of at least 5 metres.
- Ensures recreational walking and cycling trails provide direct links between activity centres, schools and major parks, are well lit and are overlooked by development, particularly residential development.
- Includes bicycle rest areas at activity centres and parks with facilities to lock up bikes.
- Provides local paths within an easement of 5 metres unless pre-existing conditions limit this. It is desirable that no section which is less than 10 metres wide is more than 50 metres long.

In urban areas, no section of path should be more than 150 metres long without alternate access / entry points.

Objective 24.12:

Shared bicycle and pedestrian paths must be a minimum width of 2.5 meters.

- 2.5 metres allows sufficient room for a cyclist to pass two pedestrians walking side by side, whereas 2.0 metres does not.

Objective 24.13:

All streets should have 1.5 metre wide footpaths to the satisfaction of Council.

Objective 24.14:

Footpaths of a minimum 2.5 metres in width will be provided near the neighbourhood centre, near corner stores, schools and other areas where pedestrian activity levels will be higher, to the satisfaction of Council.

Objective 24.15:

New pedestrian bridges should be provided to cross Griggs Creek in the first stage of development to create pedestrian links between the growth area and the primary school, and the growth area and the Jetty Road Reserve.

Objective 24.16:

Bicycle paths are to be in accordance with standard guidelines unless otherwise stated within the UGP.

Port Phillip Bay

Proposed
new road
connection

Allow
local traffic access
at Bayshore Ave and
discourage through
traffic

Legend:

- NEIGHBOURHOOD ACTIVITY CENTRE
- SUB-REGIONAL PARK
- SIGNIFICANT HILL
- KEY VIEWS
- SIGNALISED INTERSECTION
- FORESHORE KIOSK ACTIVITY CENTRE
- POTENTIAL LOCAL CONVENIENCE ACTIVITY CENTRE
- PRIMARY ROAD (Boulevard)
- SECONDARY ROAD
- GROWTH AREA BOUNDARY

No new
vehicle access
to McDermott Rd
from the growth
area

Pedestrian
and authorised
vehicle access to
McDermott Rd

Road network to
provide access to key destinations
while responding to natural features
including significant hills
and view lines

New
road connection
(to be confirmed)

New road
connection

Road
reserve at rail
trail to allow
future grade
separation

Limit direct access
to Jetty Rd from growth
area - use service roads
or internal connections

New road
connection

This plan is a representation of some of the key principles within the Jetty Road Urban Growth Plan. While the plan will guide the general form of development, it does not indicate exact locations which will require detailed design work and future development approval.

CITY OF GREATER
GEELONG

0 100 200 400 600 800 M



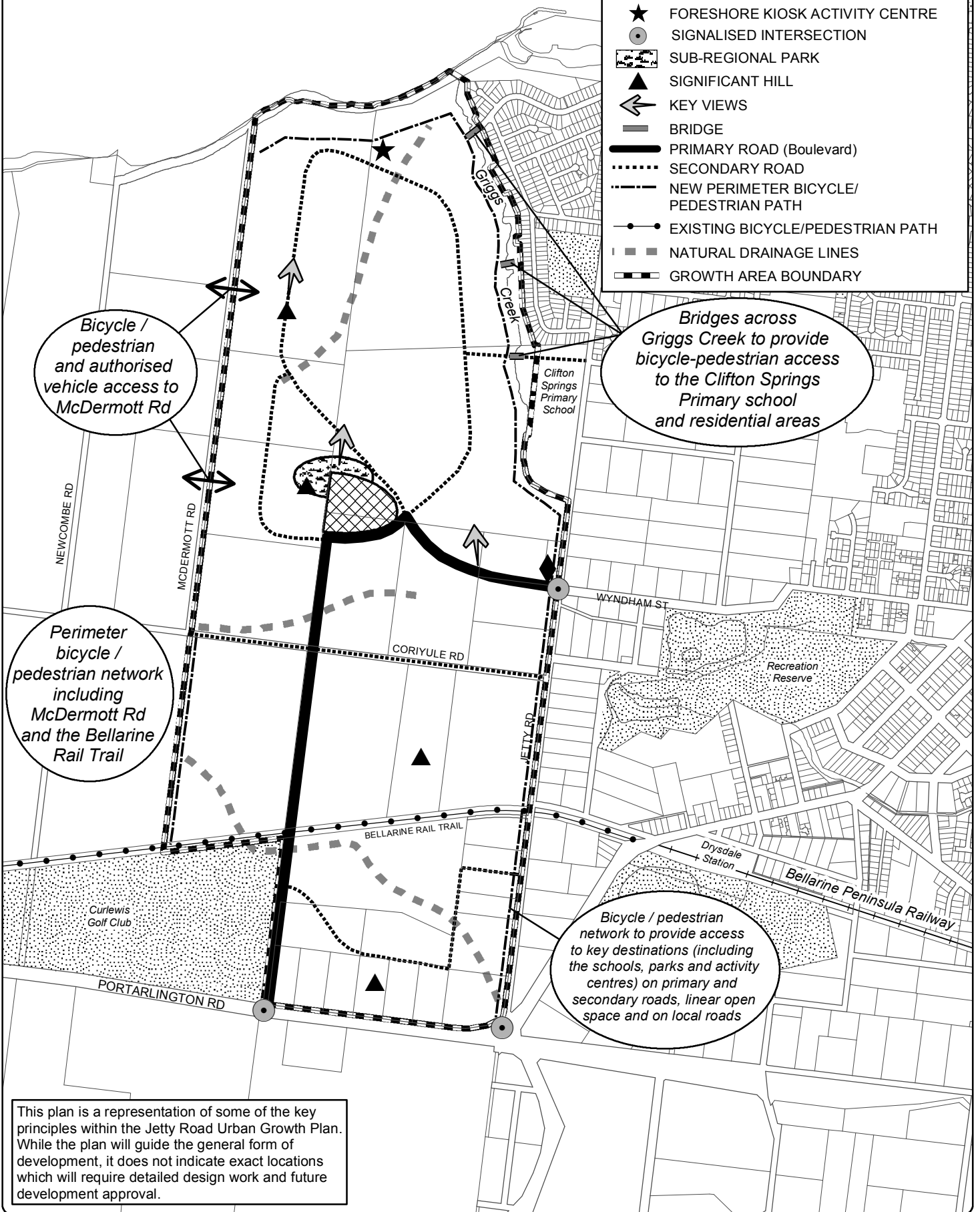
Prepared by City of Greater Geelong - 24 Dec 2008
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

FUTURE ROAD NETWORK JETTY RD URBAN GROWTH PLAN

Map No. 14

Legend:

-  NEIGHBOURHOOD ACTIVITY CENTRE
-  POTENTIAL LOCAL CONVENIENCE ACTIVITY CENTRE
-  FORESHORE KIOSK ACTIVITY CENTRE
-  SIGNALISED INTERSECTION
-  SUB-REGIONAL PARK
-  SIGNIFICANT HILL
-  KEY VIEWS
-  BRIDGE
-  PRIMARY ROAD (Boulevard)
-  SECONDARY ROAD
-  NEW PERIMETER BICYCLE/ PEDESTRIAN PATH
-  EXISTING BICYCLE/PEDESTRIAN PATH
-  NATURAL DRAINAGE LINES
-  GROWTH AREA BOUNDARY



This plan is a representation of some of the key principles within the Jetty Road Urban Growth Plan. While the plan will guide the general form of development, it does not indicate exact locations which will require detailed design work and future development approval.

FLOODING, DRAINAGE AND UTILITY SERVICES

This section should be read in conjunction with the “Jetty Road Structure Plan Stormwater and Stream Rehabilitation Concept” Ecological Engineering, November 2005, and the “Engineering Servicing report – Curlewis Structure Plan” Youngs Consulting Civil Engineers, October 2004.

(See also Map 16, page 92, General Stormwater Catchment, and Map 17, page 93, Proposed Sewerage Catchment Plan)

Key Issues

Natural Drainage

As shown on *Map 16*, the natural drainage pattern of the Jetty Road growth area can be considered from two perspectives; the perimeter, where inflows and discharges cross the UGP boundary, and the internal drainage pattern.

Perimeter Drainage Pattern

The perimeter can be divided into geographic sections as follows:

- Portarlington-Geelong Rd
- The golf course and western rural interface
- McDermott Road
- Bay frontage
- Griggs Creek
- Jetty Road.

Portarlington-Geelong Road: There is a natural invert that crosses the road reserve and discharges at about 1421-1423 Portarlington Road, passes through the rear of lots to the west and discharges to the Curlewis Golf Course.

Golf Course/Rural Land: Flows discharge generally from the site to the Golf course at two locations; approximately 200 m from the highway and immediately south of the rail trail. South of the rail trail flows are generally confined to the railway reserve for roughly 100m where they turn north to cross the reserve in a major culvert, flowing through the property known as 95-125 & 127-159 Coriyule Road (Jarawinda). This flow leaves Jarawinda to cross Coriyule Rd away from the UGP area.

There will be flow management issues to resolve relating to the manner in which flows from developed land are delivered back to the rural land use. Recognition of flow paths across adjoining rural titles may involve, among other things, the creation of drainage easements and stabilisation works.

Mc Dermott Road: There are generally four recognisable points at which flows discharge across McDermott Road. These are, as measured north from Coriyule Road, at distances of approximately 50m, 600m, 800m and 1450m. The 50m and 800m locations are serviced by culverts of 300mm diameter and 225mm diameter respectively. Surface flows discharge across the other two points in an unregulated fashion. It is expected that sheet flows cross the road at other less defined locations over the length of the road.

It should be noted that the spillway from a dam immediately east of the fence at the 1450m mark enters a depression carved across the road reserve. The culverts at the 800m mark and the 50m mark feed directly to dams on the west side of the road reserve.

There will be a need to ensure that access to water currently enjoyed by the rural properties to the west is maintained and delivered in an acceptable form from the developable land on the east of McDermott Road.

Bay Foreshore: *(Refer also to the background report "Preliminary Geotechnical Assessment" Chadwick Group Holdings, October 2004, which contains relevant comment on problems and remedial works as well as risk issues for Council.)*

Griggs Creek, the McDermott Road road reserve and the undefined natural depression some 150m east of McDermott Road are the only obvious areas of concentrated surface flows.

Field observations of the cliff top land, the cliff face area and the cliff base area adjacent to the littoral zone reveals some disturbing land management issues. Pest plants are numerous, pest animal infestations are obvious and erosion totally unregulated, except for some remedial infrastructure at Griggs Creek. The cliff top and slopes are dotted with boxthorn of various ages, rabbit infestation is obvious with several significant warrens and erosion gullies and rilling prevalent along the entire cliff surface. The issues of pest plant and animal eradication and erosion control will be keys to stemming the degradation of the foreshore cliff zone and the undesirable impacts on the littoral zone.

Griggs Creek: *(Refer also to the background report "Preliminary Geotechnical Assessment" Chadwick Group Holdings, October 2004)*

Within the growth area, the Griggs Creek sub-catchment covers an area of roughly 55ha, falling to the north-east corner of the growth area, near the confluence between the creek and the foreshore.

Council is currently dealing with drainage management issues upstream in Griggs Creek catchment, in the existing Clifton Spring / Drysdale area.

Jetty Road: Jetty Road drainage into the growth area is limited to major culverts at the Portarlington/Grubb/Jetty Roads intersection. The 1200mm diameter culvert located at Wyndham Street conveys flows from east to west, ultimately discharging to Griggs Creek via an open, deep table drain.

Internal Drainage Pattern

The gently undulating nature of the site and the relatively defined nature of the natural drainage pattern presents a clear direction for managing future overland flow paths; whether these are roadways, dedicated drainage reserves or combined open space. However, in some areas there may be isolated depressions from which there is no obvious outflow other than natural seepage. Development plans must identify these sites and provide landscape modification options (depressed roadways, open space links or drainage reserves etc) such that clear overland flow paths can be created. Such sites are apparent immediately to the south and north of Coriyule Rd.

Flooding

The only real-time flood data relates to Jetty Rd between Wyndham St & Griggs Creek where overland flows from McLeods Water Holes has been observed. Some preliminary HEC-RAS modelling has also been undertaken to estimate the 1% flood extent of this overland flow. It is unlikely that the 1% flood extent would extend beyond the bed & banks of Griggs Creek, except near Jetty Road, given the existing hydraulic capacity of the creek.

Drainage Management

Management of minor stormwater flows (up to a 5 year average recurrence interval (ARI) will be achieved by an underground pipe system to collect and convey stormwater flows to treatment and flow management facilities. The pit and pipe system will be designed in accordance with City of Greater Geelong's drainage standards. Flows in excess of 5 year ARI and up to 100 year ARI will be conveyed via overland flow paths, predominantly along drainage reserves and roads (in accordance with Council policies). At some locations south of the Wyndham St/Griggs Creek Culvert area on the eastern edge of the site, stormwater drainage will interact with existing drainage infrastructure taking runoff from adjacent urban areas. It will be necessary to co-ordinate planning of drainage infrastructure at these localities with council so that solutions for existing drainage capacity problems and funding are dealt with.

Changes to the volume and timing of runoff following urbanisation may also impact the ecology and geomorphology of downstream waterways. Retarding basins will be used to ensure the post-development 100 year, 5 year and 1.5 year ARI flows are equivalent to pre-development flows where necessary.

Stormwater wetlands will be used to treat site runoff to meet best practice water quality treatment objectives and maximise the volume of water available for reuse. Specific details of wetland design (e.g. area, depth, connectivity) are to be established in the development plan phase of the project, but wetland areas will provide habitat for a range of birds and animals, and will form attractive landscape features for the development.

Stored water not required to maintain flows to downstream rural properties or for reuse purposes in the growth area, will be released at a controlled rate. It will be directed ultimately to the bay via an outlet structure to be designed in liaison with DSE, Council and the CCMA, with a focus on minimal disturbance to Griggs Creek and its riparian zone.

Water Sensitive Urban Design

The processes of urban development and redevelopment need to adequately address the sustainability of the water environment. Various measures should be implemented to improve stormwater quality at a lot and street scale to minimise the need for 'end of pipe'/ local area drainage catchment measures. These water sensitive urban design (WSUD) measures integrate urban planning with the management of stormwater. Benefits of following these principles include the reduction of pollutants, flood retardation and enhancement of the urban landscape.

The basic aim of WSUD systems is to remove the direct connection between the impervious areas and the stormwater system by minimising the reliance on pipe and drain networks. Water quality improvements are observed due to the natural filtration of the water through vegetation.

The stormwater quality treatment and flow management facilities are expected to ensure the development will satisfy all flow and water treatment requirements of the City of Greater Geelong. Exact configurations of the facilities will be confirmed during detailed design. The final location of the basins and wetlands will need to comply with the State *Native Vegetation Framework*. Pollutant removal targets will need to be determined based on best practice standards.

Water Supply

Barwon Water is the authority responsible for water supply in the area. Barwon Water has advised that, with some augmentation, the existing water supply is capable of servicing this development area.

Reticulated water is able to be provided to the proposed development by gravity, however, augmentation of the pipe network would be required but this could be staged to match the development. Reticulated Water is expected to be provided to part of the first stage of development from the existing mains

Water Conservation

Barwon Water's highest priority is for the conservation of water resources through a number of strategies including reducing domestic demand. For large new development, such as the Jetty Road growth area, Barwon Water is seeking a best practice approach to water conservation and water sensitive urban design.

Currently, it is considered good water conservation practice to install rainwater tanks for toilet flushing and install water efficient appliances, fittings and fixtures in

all new homes. Encouragement of low water use gardens at the planning stage is also important to reduce water consumption significantly into the longer term.

Good practices in water conservation and urban design could also include provision of alternative water supplies such as recycled water or the use of stormwater (ie rainwater from surfaces other than a building roof) to irrigate sports fields. EPA Victoria has a draft document *Frameworks for Alternative Water Supplies* which provides useful information on this subject. Any alternative water supply options will need to evaluate specific environmental, social and economic aspects and impacts before being considered as an alternative to potable water supply.

It is possible to install dual reticulation systems (also known as 3rd pipe systems) in the Jetty Road growth area to partially replace potable water by providing a supply of recycled water. Such systems are useful for industrial use, watering sports grounds, other public open spaces and potentially for use in residential gardens and toilet flushing. State Government policy, as stated in '*Our Water Our Future*', is to work with local government, water authorities and developers to support dual pipe systems for recycling where they are likely to be economically viable. Some developers have indicated support for the installation of dual reticulation systems / '3rd Pipe' systems and Council is keen to explore the potential for these systems further. It is therefore recommended that this be the subject of further discussions.

Sewerage

Barwon Water is also the authority responsible for sewer facilities. The existing sewerage infrastructure has been designed to cater for the existing Clifton Springs township. As development within the township has yet to reach capacity Barwon Water advise that the existing Jetty Road Pump Station could have an interim capacity for up to 400 lots. In addition, it may be possible that the 0.8ML Emergency Storage could be used as interim detention storage should lots exceed 400 prior to the pump station being upgraded in 2013-2014. However, Barwon Water would need to review the connections and performance of the station and the development staging plans before such a servicing arrangement would be approved.

Major Transfer System

Clifton Springs to Leopold

The existing Clifton Springs to Leopold transfer sewer main does not have sufficient capacity to accommodate the 3,300 lots expected from the Jetty Road development. It will therefore be necessary to duplicate or replace the pipeline to Leopold. Subject to the rate of development, the replacement/duplication of this pipeline is scheduled for 2013 - 2014.

Leopold to Geelong

Barwon Water will also be required to upgrade the capacity of the Leopold sewerage transfer system to accommodate both the future development in Leopold as well as the Jetty Road development. Leopold PS1 (in Melaluka Road) and the transfer main from there to the Geelong Racecourse will require replacement. These works are currently scheduled to be undertaken in 2009 – 2010 - 2011.

Sewerage Reticulation & Catchment Plans

The Sewerage Catchment Plan, attached, shows how the existing topography (ridgelines) effectively divides the land into three separate catchments, Catchment A to the north, Catchment B to the southeast and Catchment C to the southwest.

Barwon Water is currently undertaking the Bellarine Peninsula Sewerage Management Study, which has identified the works required over the Peninsula to accommodate growth in the next 40 years. Clifton Springs and the Jetty Road development have been included in this study. The study is currently being finalised and a preliminary draft schedule for future sewerage augmentation works has been completed. However, at this time this schedule has not been approved by the Barwon Water Board or included in Barwon Water's capital works implementation program. Hence, any reference to future works and timing as detailed below may be subject to change.

Catchment A

Catchment A will be serviced by a new pumping station located in the northeast corner of the catchment. The pumping station will connect into the existing pumping station located at Jetty Road (Clifton Springs PS No.1), via a new rising main located parallel to the creek. It is proposed that the pumping station be located at Bay Shore Avenue, both the new pump station and rising main would be located on the west side of the creek, refer to attached plan.

Sizing of the pump station will be subject to an overall development plan or a sewer reticulation plan from the developers showing the number of lots in this catchment.

A gravity interceptor sewer may be required along the northern boundary of the development to collect flows from the catchment and discharge into the new pump station at Bay Shore Avenue. It is likely that a second 225mm interceptor sewer will also be required to extend south into the catchment to collect gravity flows. It would be preferable to locate all major sewers (200mm) in the major roads or public open space reserves.

Catchment B

Catchment B should be able to be commanded (via a gravity reticulation system) by the existing Clifton Springs Pumping Station No.1 (PS1) located at Jetty Road. PS1 is currently operating at approximately 75% capacity, and is committed to servicing future infill development from Clifton Springs and Drysdale, therefore the flows generated from Catchment B (in addition to the flows pumped from Catchment A) will necessitate the augmentation of PS1 and also require

duplication of the existing Clifton Springs to Leopold pipeline. Barwon Water's preliminary scheduling for augmentation of PS1 and the Clifton Springs to Leopold pipeline is planned for 2013/14.

Subject to the amount of infill development that occurs in Clifton Springs and Drysdale, Barwon Water would allow an interim connection (of approx. 400 lots) to PS1 prior to the augmentation works in 2013.

Catchment C

Based on an initial review of the topography this catchment may need to be serviced via a new pumping station (McDermott Road pump station) located at the corner of McDermott and Coriyule Roads (low point in the catchment). The rising main from this station would be connected directly into the duplicated Clifton Springs to Leopold rising main. The new McDermott Road pump station and rising main will need to be sized to accommodate the full development of Catchment C.

Other Utilities







The Drysdale/Clifton Springs area is fully serviced for gas, electricity and telecommunications. It is anticipated that these utilities will be extended to the subject site.

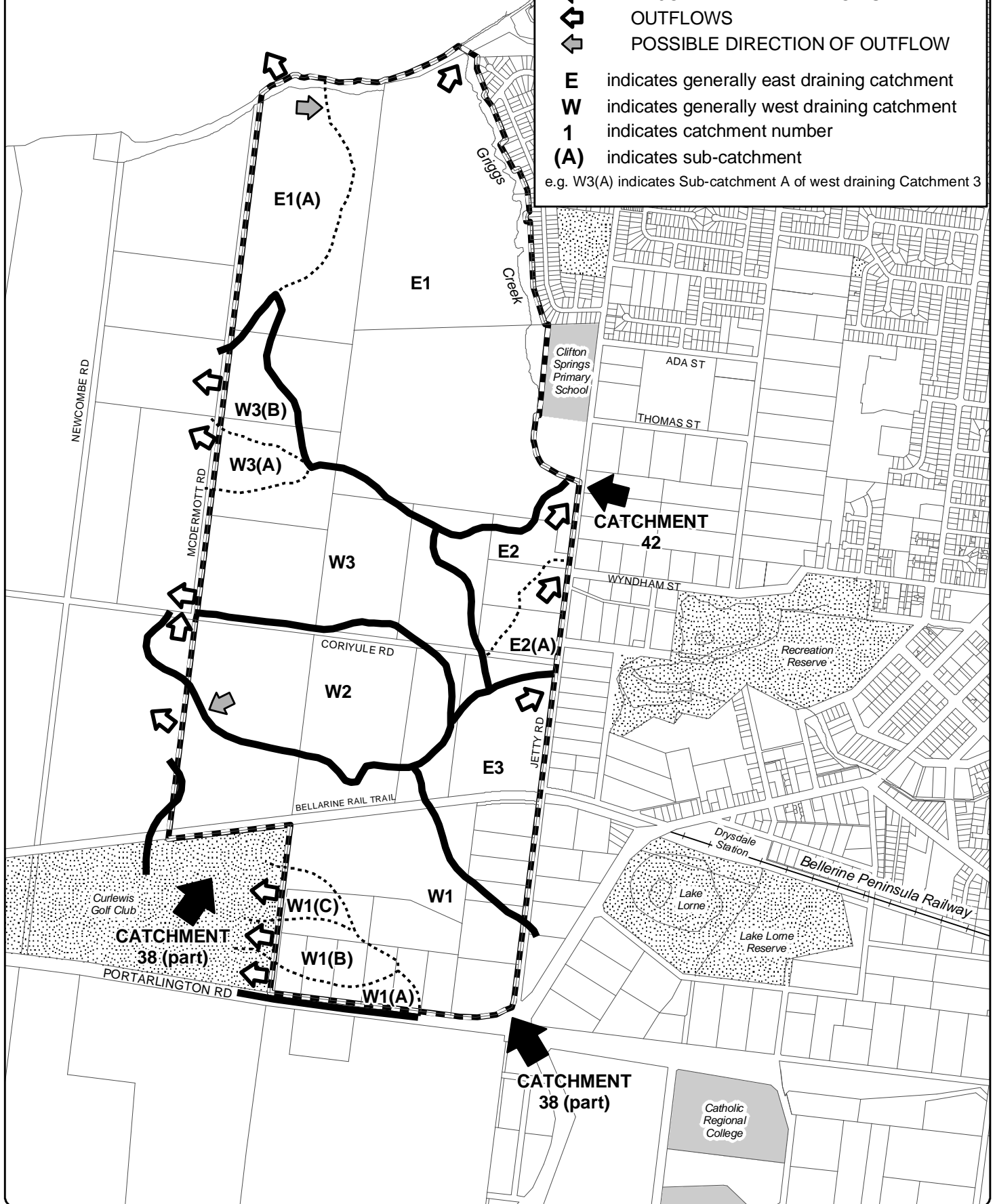
The UGP proposes the use of alternative energy sources such as solar hot water systems as a standard requirement for all new dwellings in the growth area.

City of Greater Geelong Council is the authority responsible for the collection and disposal of refuse within the study area. Council has a Waste Management Future Directions (WMFD) Strategy that identifies that there is not a need for any further putrescible landfill sites and that the Drysdale landfill will become the significant regional site. This is confirmed by the Barwon Regional Waste Management Group, which is currently reviewing its Regional Waste Management Plan. Drysdale landfill has at least 20 years life remaining, up to possibly 40 year depending on the potential to use an adjacent Council owned quarry.

Port Phillip Bay

Legend:

-  STUDY AREA BOUNDARY
-  CATCHMENT BOUNDARY
-  SUB - CATCHMENT BOUNDARY
-  MAJOR EXTERNAL INFLOWS
-  OUTFLOWS
-  POSSIBLE DIRECTION OF OUTFLOW
- E** indicates generally east draining catchment
- W** indicates generally west draining catchment
- 1** indicates catchment number
- (A)** indicates sub-catchment
- e.g. W3(A) indicates Sub-catchment A of west draining Catchment 3



CITY OF GREATER
GEELONG

0 0.1 0.2 0.4 0.6 0.8
Km








Prepared by City of Greater Geelong - May 2007 Dwg. No.
Although all due care has been taken to ensure that this document is correct, no warranty
is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

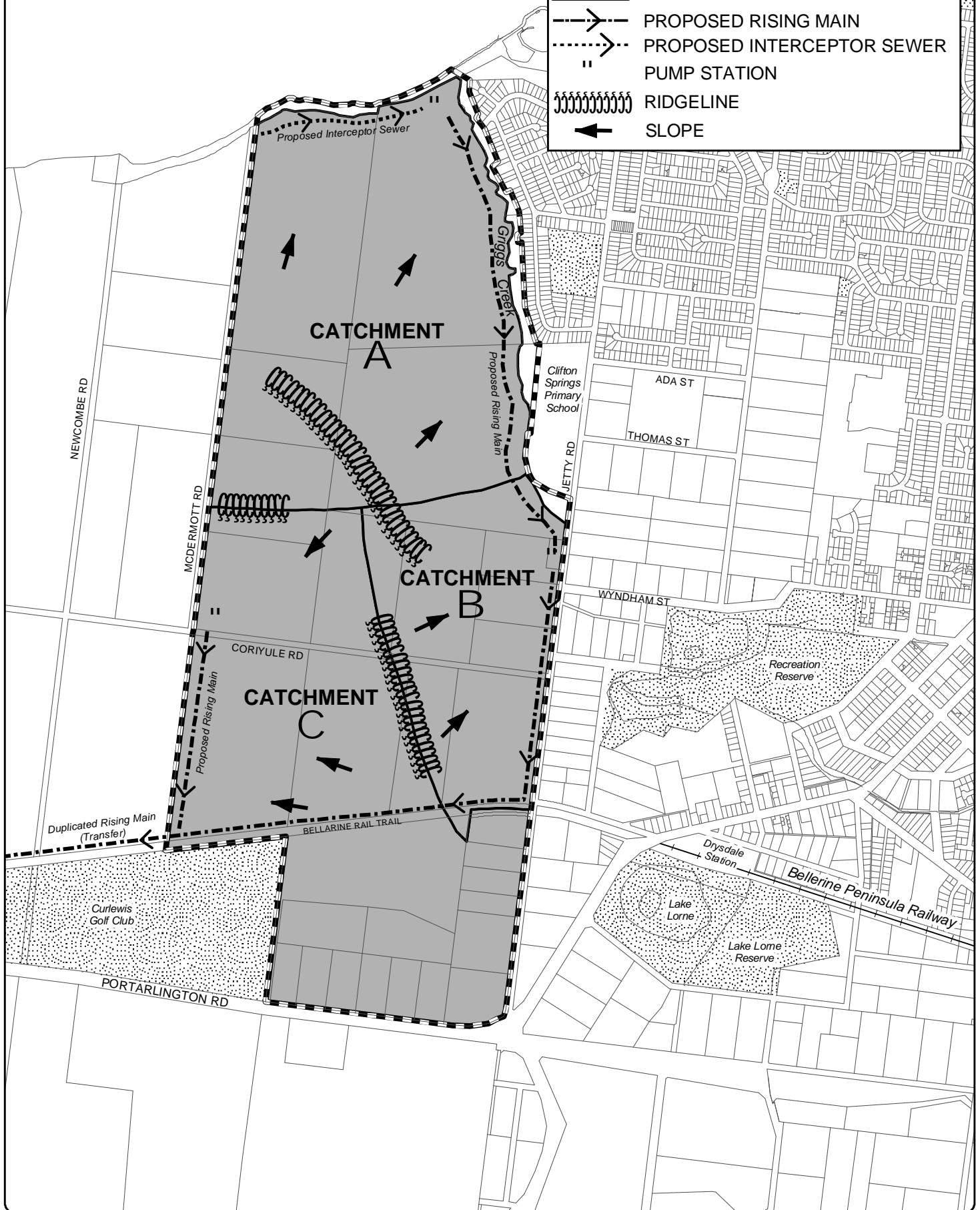
GENERAL STORMWATER CATCHMENT PLAN JETTY RD STRUCTURE PLAN

Map No. 16

Port Phillip Bay

Legend:

-  GROWTH AREA BOUNDARY
-  SEWERAGE CATCHMENT
-  PROPOSED RISING MAIN
-  PROPOSED INTERCEPTOR SEWER
-  PUMP STATION
-  RIDGELINE
-  SLOPE



PROPOSED SEWERAGE CATCHMENT PLAN **JETTY RD URBAN GROWTH PLAN**

0 0.1 0.2 0.4 0.6 0.8 Km

Prepared by City of Greater Geelong - May 2007 Dwg. No.
 Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

Map No. 17

Flooding, Drainage and Utility Services Principles and Objectives

The following principles and objectives should guide the development of the Jetty Road growth area:

Principle 25: The Jetty Road growth area is to exemplify best practice in water sensitive urban design.

Objective 25.1:

Flooding and drainage management must achieve best practice as outlined in *Urban Stormwater – Best Practice Environmental Management Guidelines* (CSIRO 1999)¹, including:

- impact minimisation by limiting waterway disturbance caused by the alternation of flow regimes;
- protection of the natural drainage system by protecting channel form and aquatic ecosystems from flow related impacts;
- an integrated approach to stormwater system management that meets both hydraulic capacity and waterway projection objectives, and is designed and implemented on a catchment basis, including consideration of development staging impacts and proposals for interim management;
- retarding basins will be sized to contain the entire volume of a 100 year flood event and prevent uncontrolled discharge to the foreshore;
- given the instability of the foreshore slope, it is important to manage discharge of water from the northern edge of the site;
- the location of any stormwater outfall into the bay or Griggs Creek will be at the discretion of Council, CCMA and DSE as appropriate; and
- stormwater quality controls are to be used during the construction phase. Details of these systems must be to Councils satisfaction and be provided to Council prior to the commencement of any construction works.

¹ Urban Stormwater: best practice environmental management guidelines, CSIRO, 1999. Other references include WSUD Engineering Procedures: Stormwater, CSIRO Publishing, 2005; Urban Stormwater: Best Practice Environmental Management Guidelines, CSIRO Publishing, 1999; and City of Greater Geelong Stormwater Management Plan, 2002.

Objective 25.2:

Catchment based drainage management plans must be prepared by the developer as part of any development plan, to the satisfaction of Council.

Objective 25.3:

Stormwater management must achieve best practice water sensitive urban design, including:

- complying with the water quality objectives of the State Environment Protection Policy;
- detention of stormwater, rather than rapid conveyance;
- localised water harvesting for various uses and localised wastewater treatment systems;
- investigate the integration of stormwater wetlands with the flood retarding basins; and
- use of vegetation for filtering purposes;
- water-efficient landscaping in both private and public gardens and parks;
- roadways and parking areas designed to incorporate detention areas and vegetation;
- protection of water-related environmental, recreational and cultural values;
- a stormwater management system which ensures that the peak discharge rate, volume and pollutant load of stormwater leaving a site after a development is no greater than pre-development;
- incorporates the design of localised water storage, treatment and reuse technologies.

Principle 26: Stormwater quality, treatment and flow management must ensure no negative impacts on downstream properties, ecology and geomorphology

Objective 26.1:

Water entering Griggs Creek or the Bay must be of sufficiently high quality to ensure that there is no adverse impact on the Bay or aquaculture industries.

Objective 26.2:

Access to treated storm water by downstream rural properties should be provided in similar quantities, qualities location and concentration to pre development overland flows.

Objective 26.3:

The detailed design of WSUD measures is to be a requirement of any future Development Plan Overlays.

Principle 27: Reduce the need for consumption of potable water

Objective 27.1:

Each residential dwelling must have a rainwater tank of minimum 2,000L that is connected to the dwelling's toilet flushing system.

Objective 27.2:

Development is to seek to incorporate leading edge water supply strategies and alternative water supply sources, such as recycled water (including '3rd Pipe') and reuse of stormwater.

Objective 27.3:

The collection and utilisation of stormwater to conserve potable water must not reduce flows to down stream rural properties from pre-development levels.

Objective 27.4:

Storm water systems must be designed and constructed to provide for the capturing, treatment and storage of stormwater in above/underground tanks for reuse in public open spaces and landscapes.

Objective 27.5:

Integrate and co-locate open space areas and vegetated linear access paths with the drainage systems, including retarding basins.

Objective 27.6:

Drainage systems within open space areas are not considered as part of an open space contribution.

Principle 28: Utility services must demonstrate best practice in environmentally sustainable development.

Objective 28.1:

Solar hot water systems should be a standard requirement for all new buildings in the growth area.

Objective 28.2:

Public lighting in the growth area should utilise solar energy.

REALISING THE PLAN

STAGING

Key Issues

The Jetty Road UGP sets the overall development form of the Jetty Road residential area and describes the function, layout and design principles of the residential areas and stages as the land is developed over an extended timeframe. The implementation of the UGP will be achieved via amendments to the Greater Geelong Planning Scheme.

It is essential that staging of development occurs in a logical and orderly manner with the prospect of providing for the greatest community benefit.

The sequence of development staging is important as it will provide:

- The ability to fund hydraulic and other urban infrastructure - this is likely to be incremental and build on existing service provision.
- The ability to protect and fund the enhancement of areas of high environment or cultural significance.
- To provide the required population thresholds close to the activity centres and community facilities early to justify an appropriate level of investment in building these.
- The ability to provide primary and secondary roads, including new access points that avoid adjacent roads from exceeding desirable vehicle limits.
- Provide a basis for the Development Contributions catchments.

Given the dynamic nature of property ownership and joint ventures, and the potential for agreements between adjoining landowners unknown to Council, the most appropriate detailed sequencing of development is not always easily determined far in advance of its commencement.

Having regard to the above factors, the area most suitable for inclusion in the first stage of development is the land immediately west of Griggs Creek, between Coriyule Road and the foreshore (as shown in Map 18, page 101, *Indicative Location of Proposed Stage 1*). This will:

- Provide for the early upgrading of Griggs Creek;
- Enable early connection across the creek to the primary school;
- Provide the most cost-effective connection to the Jetty Road sewerage pumping station;

- Initiate a north/south connection road to provide future alternative access to the Ingles land; and
- Initiate detailed planning and development along the foreshore frontage of the Growth Area.

Subsequent stages of development should be determined by Council in order to achieve the most appropriate provision and sequencing of infrastructure and to meet the following objectives:

Staging Principles and Objectives

The following principles and objectives should guide the development of the Jetty Road growth area:

Principle 29: The future development of the land is proposed to occur in stages, identified in a staging plan, that directs how development should proceed so as to achieve the timely and efficient provision of services, infrastructure, access roads and environmental enhancements, while protecting adjacent residential and rural amenity.

Objective 29.1:

High value conservation areas should be protected as early as possible, including Griggs Creek Reserve and the Foreshore Reserve,

Objective 29.2:

Early development should occur close to existing community infrastructure, to maximise the accessibility of services until new facilities can be sustained.

Objective 29.3:

Development of the Neighbourhood Activity Centre should not begin until the development of the growth area can achieve the level of support necessary to sustain retail and community infrastructure. The land to be occupied by the Neighbourhood Activity Centre is not to be rezoned until this time, as determined by Council.

Objective 29.4:

Development of the Local Convenience Centre can occur at the outset of development.

Objective 29.5:

New community infrastructure—including public open space—should be provided in parallel with the commencement of residential development, to ensure new residents are not socially excluded.

Objective 29.6:

There should be multiple residential development fronts, to provide housing/ builder/ developer competition and increase potential housing supply.

Objective 29.7:

A range of housing types and price-points should be provided at all stages to appeal to as many sectors of the market as possible, while delaying the release of sites for housing types that rely on a more advanced market (eg. apartments) until local demand for them has developed.

Objective 29.8:

Development of the main collector road between the Geelong-Portarlington Road and the Neighbourhood Activity Centre should occur at a time to be determined by Council so as to avoid traffic on Jetty Road exceeding desirable limits or when an additional major traffic access route is required.

- Development of part of this road may be funded by the Development Contributions Plan.
- Should this road be required prior to the land it passes through being rezoned for development, Council may apply a Public Acquisition Overlay to the land in order to facilitate the timely development of the required road infrastructure.

Objective 29.9:

Pedestrian / bicycle connection across Griggs Creek to the primary school must be developed in the first stage of the development of the site.

Objective 29.10:

No more than 15 years supply of residential land should be rezoned at any one time.

- As the residential lot supply falls below 10 years supply, this should be the trigger to rezone and release more land for urban purposes.

Objective 29.11:

In relation to the latter principle, applications for subdivision should be required to cover at least 80% of a 5-minute walkable catchment—which is approximately 50 hectares—and to be accompanied by a Development Plan for the whole walkable catchment, to ensure coordinated planning.

Objective 29.12:

Development staging should create contained housing clusters.

Objective 29.13:

Development staging should maintain separate access for new residents ('clean' access) and construction vehicles ('dirty' access).

Objective 29.14:

Development staging should ensure efficient bus routes at each stage.

Legend:

 GROWTH AREA BOUNDARY

 PROPOSED STAGE 1



This plan is a representation of some of the key principles within the Jetty Road Urban Growth Plan. While the plan will guide the general form of development, it does not indicate exact locations which will require detailed design work and future development approval.



0 0.125 0.25 0.5 0.75 1 Km



Prepared by City of Greater Geelong - March 2007 Dwg. No.
Although all due care has been taken to ensure that this document is correct, no warranty is expressed or implied by the City of Greater Geelong or Barwon Water in its use.

INDICATIVE LOCATION OF PROPOSED STAGE 1 JETTY RD URBAN GROWTH PLAN

Map No. 18

PROVISIONAL PLANNING CONTROLS

Planning controls will need to be applied to those parts of the growth area that are to be developed in later stages in order to guide development and uses in the period between now and when development takes place.

The Victorian Planning Provisions do not contain transitional zones between rural and urban zones. Therefore, the Farming Zone is the most appropriate provisional or 'holding' zone for the Jetty Road urban growth area. The Farming Zone would limit the use and development of land, and better maintain the integrity of the land for long term development.

In particular, the Farming Zone ensures land is not further subdivided beyond the lot size specified in the schedule by placing greater restrictions around the creation of smaller lots. This is important because further subdivision would erode the potential for coordinated urban development in the future. Therefore, it is recommended that, where appropriate—and especially if it is zoned Rural—land that is designated for development in the longer-term be rezoned to the Farming Zone.

If the existing zoning is retained, Council should take the following considerations into account before any changes to the land use are contemplated:

- Does it maintain the integrity of the land in terms of its development capacity (i.e. minimise any further excision to the parcel of land)?
- Does it promote land use activities that are going to inhibit any future residential development occurring in or around the area?
- Does it contradict or cause any detriment to the future development objectives of the area?

These principles would be reinforced by a more detailed staging plan incorporating indicative timeframes for future rezonings.

Proposed Local Planning Policy

Local policy relating to the Jetty Road urban growth area within the Local Planning Policy Framework of the Greater Geelong Planning Scheme is to be amended to require the preparation of Development Plans to guide the future subdivision and development of the land. Development Plans must be consistent with this UGP and help to implement the overall visions and principles of the Jetty Road Growth Area as outlined in this UGP.

Any plan within the Local Planning Policy Framework of the Greater Geelong Planning Scheme is to be updated to reflect the land as a future residential area. Likewise the Drysdale/Clifton Springs Structure Plan is to be amended as part of its upcoming review.

Any review of policies relating to urban growth and the development context of Jetty Road is to be informed by the direction provided in the Jetty Road UGP.

Proposed Zones

The rezoning of the land will be the subject of future rezoning requests from land owners. The staging of rezoning should help achieve the Jetty Road urban growth plan and be consistent with the development staging principle and guidelines.

Residential

The majority of the Jetty Road growth area is to be rezoned to support standard residential development.

Mixed Use

A zone that supports mixed use activity is preferred for the mixed use area, in order to facilitate a range of businesses (excluding retail), residential and community uses. This will allow increased employment opportunities, preserve business zones for primarily retail use, encourage higher density forms of housing, while allowing flexibility for buildings to be re-used for different purposes and respond to changing needs of the community.

Business

A business zone is preferred to facilitate business activity (especially retail), community uses and street activity, while limiting other land uses. It is proposed to apply a business zone to the:

- Neighbourhood Activity Centre
- Local Convenience Activity Centre
- Kiosk Activity Centre

The land to be occupied by the Neighbourhood Activity Centre is not to be rezoned until the growth area can achieve the level of support necessary to sustain retail and community infrastructure, to the satisfaction of Council, in accordance with Objective 29.3.

Industrial

Within the Jetty Road Urban Growth Plan Area no provision is made for the designation of land for industrial use. There is an adequate supply of industrial land in nearby areas of Geelong and the location of service businesses in Murradoc Road, Drysdale means that the community has sufficient access to these uses.

Public Open Space

Public open space will initially be zoned residential until subdivision approval determines exact boundaries. This does not limit open space being initially zoned as open space if the boundaries can be determined.

Public open space areas will be, at the time of subdivision, transferred to Council in accordance with the Subdivision Act 1988. After the land is transferred to Council it is to be considered for rezoning as open space. Generally controls will be in place to require the development and maintenance of public open space for a set period of time, which may continue after rezoning of land to open space.

Proposed Overlays

Incorporated Plan Overlay

An Incorporated Plan Overlay (IPO) will be applied to give effect to the urban growth plan and is to apply to the entire Jetty Road urban growth area. The IPO would introduce the Jetty Road Urban Growth Plan into the Greater Geelong Planning Scheme as an Incorporated Plan document.

The IPO will ensure that development is consistent with the Jetty Road Urban Growth Plan.

Development Plan Overlay

A Development Plan Overlay (DPO) will be applied to facilitate appropriate land use and development for each stage of development. A DPO will be applied at the time the land is rezoned for residential or commercial purposes.

Generally the DPO will require a finer level of detail and design prior to permits being issued for subdivision and development and will identify further matters that require identification and resolution before subdivision and use are permitted. Such issues would include open space, storm water management, urban design and movement networks.

Development Plans are to be generally in accordance with this Urban Growth Plan.

Erosion Management Overlay

The Erosion Management Overlay (EMO) protects areas prone to erosion, landslip or other land degradation processes, by minimizing opportunities for land disturbance and inappropriate development. In accordance with objective 2.4, a Landslide Risk Assessment is to be carried out to inform the application of an Erosion Management Overlay to the foreshore area. The EMO will identify the environmentally and geologically sensitive land along the foreshore for a setback of 100m. This Overlay will require a permit for building and works and a permit to remove vegetation.

Environmental Audit Overlay

In accordance with Objective 11.1, at the time of rezoning of any part of the growth area, advice must be sought from the EPA with regard to whether or not an Environmental Audit Overlay (EAO) is required. Particular regard is to be given to Dieldrin and DDT contamination.

Public Acquisition Overlay

A Public Acquisition Overlay (PAO) may be applied to land required for road infrastructure (in accordance with Objective 30.8) or other public infrastructure as required to ensure the timely provision of that infrastructure.

Development Contributions Plan Overlay

A Development Contributions Plan (DCP) is a statutory mechanism used to levy the proponents of new development for fair contributions to specific, prescheduled infrastructure items, i.e. the infrastructure items listed in the DCP.

A Development Contributions Plan will be prepared for the Jetty Road Growth Area, in accordance with current State Government policy on Development Contributions. The DCP will require developers in the Jetty Road Growth Area to meet their fair share of the capital cost of delivering the infrastructure required to service existing and future residents in the Jetty Road Urban Growth Area.

The Jetty Road Urban Growth Area Development Contributions Plan will form part of the City of Greater Geelong Planning Scheme, and will be implemented via the application of a Development Contributions Plan Overlay.

REFERENCES

Brett Lane and Associates (June 2004) *Flora and Fauna Assessment, Clifton Springs.*

Chadwick Group Holdings (October 2004) *Preliminary Geotechnical Assessment*

Ecological Engineering (November 2005) *Stormwater and Stream Rehabilitation Concept..*

Essential Economics (March 2005) *Curlewis Residential and Commercial Supply and Demand Assessment.*

Practical Archaeology Services (February 2005) *Jetty Road, Clifton Springs – Survey for Aboriginal and Archaeological Sites.*

TTM Consulting (November 2005) *Curlewis Drysdale Proposed Structure Plan – Transport Provisions and Traffic Engineering Report.*

Tract Consultants (July 2006) *Jetty Road Urban Growth Plan Public Discussion Document.*

Tract Consultants (July 2006) *Policy Context Assessment.*

Youngs Consulting Civil Engineers (October 2004) *Engineering Servicing. – Curlewis Structure Plan*