CORIO NORLANE STRUCTURE PLAN BACKGROUND REPORT

Prepared by the City of Greater Geelong and
Department of Planning and Community Development
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State Government Victoria
Department of Planning and Community Development

CITY OF GREATER GEELONG

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Foreword

This Background Report is the first step in the process of preparing a Structure Plan for Corio and Norlane. When it is prepared the Structure Plan will provide a vision, plans and directions to guide development of the area over a 10 to 15 year period.

The Structure Plan will contain three parts, **Part A** "*Structure Plan*", **Part B** "*Implementation & Review"* and **Part C** "*Background Report*".

Part A will contain the Structure Plan and concept plans and will include principles and directions in response to the key influences identified in the Background Report.

Part B contains a program for implementing the Structure Plan including the undertaking of other strategic work and future review of the Structure Plan.

Part C (this Background Report) provides the foundation and contextual information for the Structure Plan and identifies the issues, opportunities and constraints facing the suburbs, under the following headings:

- Introduction
- Policy Context
- Demographic Profile
- Physical Infrastructure
- Built Form
- Movement and Transport
- Economic Development and Employment
- Social Infrastructure
- Natural Environment and Heritage
- Recreation and Open Space

The Structure Plan is being prepared by Council and DPCD officers through a Planning and Development Working Group which is positioned in a broader Corio and Norlane Urban Renewal Project governance structure. The broader structure involves State Government departments and the City of Greater Geelong. The working group is one of three groups running concurrently during 2010/11. The other two working groups in the Governance structure are Transport and Community Infrastructure, and Engagement and Communications.

The Corio Norlane Structure Plan follows a similar process and format to that of other in-house City of Greater Geelong produced structure plans (e.g. for Townships on the Bellarine Peninsula and Lara).

The Background Report builds on a number of reports commissioned by the former Victorian Government in its development of a business case for the urban renewal project, as well as published government and Council strategies and policies.

The Background Report was prepared by the City of Greater Geleong with close involvement of DPCD officers and informed by previous work by State Government agencies. The report is not necessarily endorsed by DPCD or the State Government.

PART C BACKGROUND REPORT

1.0 Introduction

1.1 Background

The Corio and Norlane area has many advantages that enable it to be a high demand economic and residential location. It is close to the Geelong Central Business District, Avalon Airport, Geelong Port and industrial areas, Corio Bay, and the Werribee to Avalon Employment Corridor. It also has accessible and affordable housing with easy access to Melbourne via road and rail linkages.

However within Corio and Norlane, demographic and socio-economic analysis finds that there are sections of these communities with high unemployment levels, low education levels, low household incomes and an increased likelihood of living in public and rental housing. The area has low residential densities and population levels have declined in contrast to the strong population growth in the remainder of the City of Greater Geelong. Office of Housing stock represents approximately 35% of dwellings in Norlane and over 40% in the Rosewall area in Corio's east. Some of the housing stock and retail facilities are ageing and of poor quality.

The Corio Norlane area has a large industrial presence in its north and east and as a result, has been more harshly affected by the impacts of manufacturing sector restructuring and associated job losses in the recent past.

Several government and non-government initiated projects in Corio and Norlane over the past decade have resulted in a community aspiring to improve the quality of their lives and eager for holistic urban renewal. Key programs and initiatives are described below:

1.1.1 Corio Norlane Development Advisory Board (CN DAB)

The Corio Norlane Development Advisory Board (CN DAB) is the peak body representing the community. It is a partnership between government and non-government organisations, schools, industry and residents and plays a consultative and advisory role.

The CN DAB *Healthy Community Plan 2009-2013* states the community's vision (see below) and has been endorsed by the World Health Organisation.

CNDAB Vision:

"Corio Norlane is a socially, economically, and environmentally sustainable community that offers the highest possible quality of life for all residents"

1.1.2 Corio Norlane Urban Renewal

In 2009, the Corio Norlane Urban Renewal initiative was established to provide the long-term and sustained support to deliver on the vision of the (former) State Government, the City of Greater Geelong and the community to transform Corio Norlane into a thriving and connected community where people choose to live, work and invest.

Eight strategies have been identified for Corio Norlane Urban Renewal as central to achieving this vision. These strategies are to:

1. Foster jobs and economic opportunities

2. Strengthen lifelong learning to build pathways to employment

3. Improve access to integrated health and community services

4. Expand housing to provide for Geelong and Melbourne's growth

5. Establish Corio Norlane as a vibrant gateway to Geelong

6. Revitalise activity centres and local community hubs

7. Connect the community through sustainable transport options

8. Establish governance to drive change.

1.1.3 Corio Norlane Neighbourhood Renewal

In 2002 the Victorian Government established a $40 million Neighbourhood Renewal project to address disadvantage in Corio and Norlane (funded until 2010). The project aims to implement a whole of government approach and to empower the community to improve the lives of residents by enhancing health, economic and social wellbeing and upgrading the physical environment.

1.1.4 Corio Norlane Education Regeneration Project

In 2010 the Department of Education and Early Childhood Development (DEECD) announced Stage 1 funding of $10 million for the re-configuration of nine government schools in Corio Norlane. The schools will join together to form a new multi-campus school comprising three Prep – Year 8 Campuses (Corio Primary School site, Corio West Primary School site and Norlane West Primary School site), one Prep – Year 6 Campus (North Shore Primary School site) and one Year 9 – 12 Senior Campus (Corio Bay Senior College site). As a result Rosewall Primary School, Flinders Peak Secondary College, Norlane High School and Corio South Primary School have either closed or are scheduled to close by the end of 2012.

1.1.5 Norlane Regeneration Project

In 2007 the Department of Human Services announced $40 million to develop 200 new public and social housing dwellings and to upgrade 100 existing public housing dwellings. 40 new homes were delivered in Stage 1, with an additional 160 to be delivered in Stage 2. Stage 2 applies to two precincts in Norlane: Precinct 1 is generally bounded by St Georges Road, Iris Street, Wisteria Grove, Plume Street and Rose Avenue; and Precinct 2 is generally bounded by Alkira Avenue, Yooringa Avenue, Morona Avenue, Waitara Grove and Arunga Avenue.

1.1.6 Corio Norlane Urban Renewal Project – Transport Initiative

In 2010 the former Minister for Community Development announced $2.2 million as stage one of a fifteen year vision to enhance and rebuild transport infrastructure and tackle public safety, improve access to job opportunities and housing, as well as improve lifestyle for families in the community. During the 2010-11 budget announcements, the State Government also committed to have in place the right long term planning strategy for Corio Norlane to ensure families in the area can seize the opportunities of growth into the future.

1.1.7 Other initiatives

Other major Victorian Government initiatives currently planned or underway include the North Shore Train Station Project ($1.25 million), the Northern Water Plant ($90 million), a Trade Training Facility ($11.2 million), Diversitat Northern Community Hub ($4 million), Nation Building and Jobs Plan ($12.5 million) and 3 k-2 Learning Pods ($9 million).

The City of Greater Geelong has made significant investment in Community Services Infrastructure over the past 10 years in Corio Norlane and recently developed a strategic direction for future provision of community infrastructure. The report titled *Future Dreaming – Community Infrastructure Analysis for Corio Norlane* (DLA 2009) is to be used as a reference and informing document for Council's priorities, actions and engagement with State and Federal Governments and local communities.

1.2 Location

Corio Norlane is located in Victoria in the City of Greater Geelong. Situated approximately 60 km south-west of Melbourne, Corio Norlane is 6 km north of the Geelong city centre and includes the postcode 3214 suburbs of Corio, Norlane, Rosewall, Cloverdale and North Shore. Land between the Geelong Ring Road and Anakie/Matthews Roads is in Lovely Banks and also part of the study area. The area is approximately 22 square kilometres and predominantly residential in nature (being home to some 23,072 people (2006 census). The location of Corio and Norlane in relation to the rest of the municipality and the region is indicated on **Map 1** and **Map 2**.

Corio is the northern gateway to the City of Greater Geelong with industrial areas generally located in the east. Corio includes the neighbourhoods of Rosewall and Cloverdale and is bounded by Plantation Road, Bacchus Marsh Road, Montview Road, Broderick Road, the Geelong Ring Road, a line running continuous of Torresdale Road, Hovell Creek and Corio Bay in the east, St Georges Road and Cox Road in the south and Matthews Road in the west.

According to the Aboriginal Dictionary prepared by Lou Lane "Corio" was a corruption of the term CORY:EA = kangaroo rat. These marsupials were once common on the Lara and Werribee Red Dust Plains. Alternatively Corio means sandy or bitter (salt) water, however there is some disagreement with this. This indicates there are different meanings attributed to the word "Corio".

White settlement of the area dates from the early 1850s, with a small township established in the 1860s. Gradual growth took place in the late 1800s and early 1900s, in part as a result of industrial growth. Significant development occurred during the post-war years, particularly from the late 1950s to the 1970s, aided by the construction of public housing estates. The population has declined since the early 1990s, a result of small increase in dwelling stock, but a decline in the average number living in each dwelling.

Major features of the area include Corio Shopping Centre, Corio Community Health Centre, Hendy Street Reserve, Stead Park, Shell Geelong Refinery buffer land, M.C. Herd Abattoirs, Geelong Gateway Homemaker Precinct and Northern Bay Senior College. Corio is dissected by heavily trafficked road links, particularly Bacchus Marsh Road and the Princes Highway (Melbourne Road) and serviced by the Geelong-Melbourne train line with a station directly south of the School Road intersection.

Norlane and North Shore are established residential and industrial areas, with industry located generally to the east, along Corio Bay. Norlane – North Shore are bounded by Cox Road, St Georges Road and a line running continuous of St Georges Road in the north, Corio Bay in the east, Cowies Creek in the south and Anakie Road in the west.

Norlane is named after Norman Lane, a local serviceman killed in World War II. Settlement dates from the late 1880s when houses were constructed in North Shore. Some growth took place in the 1920s, aided by the establishment of industries. Like Corio, development in Norlane dates primarily from the 1940s when public housing estates were constructed and significant development occurred during the 1950s.

Similar to Corio again however, the population has declined since the mid 1990s with little change in dwelling stock and a decline in the average number of persons living in each dwelling.

Major features of the area include Bell Post Shopping Centre, Waterworld, the City of Greater Geelong Leisuretime Centre, Diversitat Northern Community hub, Windsor Park and Evans Reserve. The Princes Highway is the significant road link through the area and the North Shore train station services the Geelong-Melbourne line.

The land between Anakie Road/Matthews Road and the Geelong Ring Road is in the suburb of Lovely Banks 3221. This land has developed relatively recently in comparison to the remainder of the study area and formed its own character. Residential lots to the north of Purnell Road range from 2,000 m^2 to 4,000 m^2 and developed with large contemporary dwellings set in landscaped gardens. Land to the south of Purnell Road is a mix of vacant residential land and newly developing and developed estates. The area also includes the Village Life Retirement Village and the City of Greater Geelong Council Operations Centre.

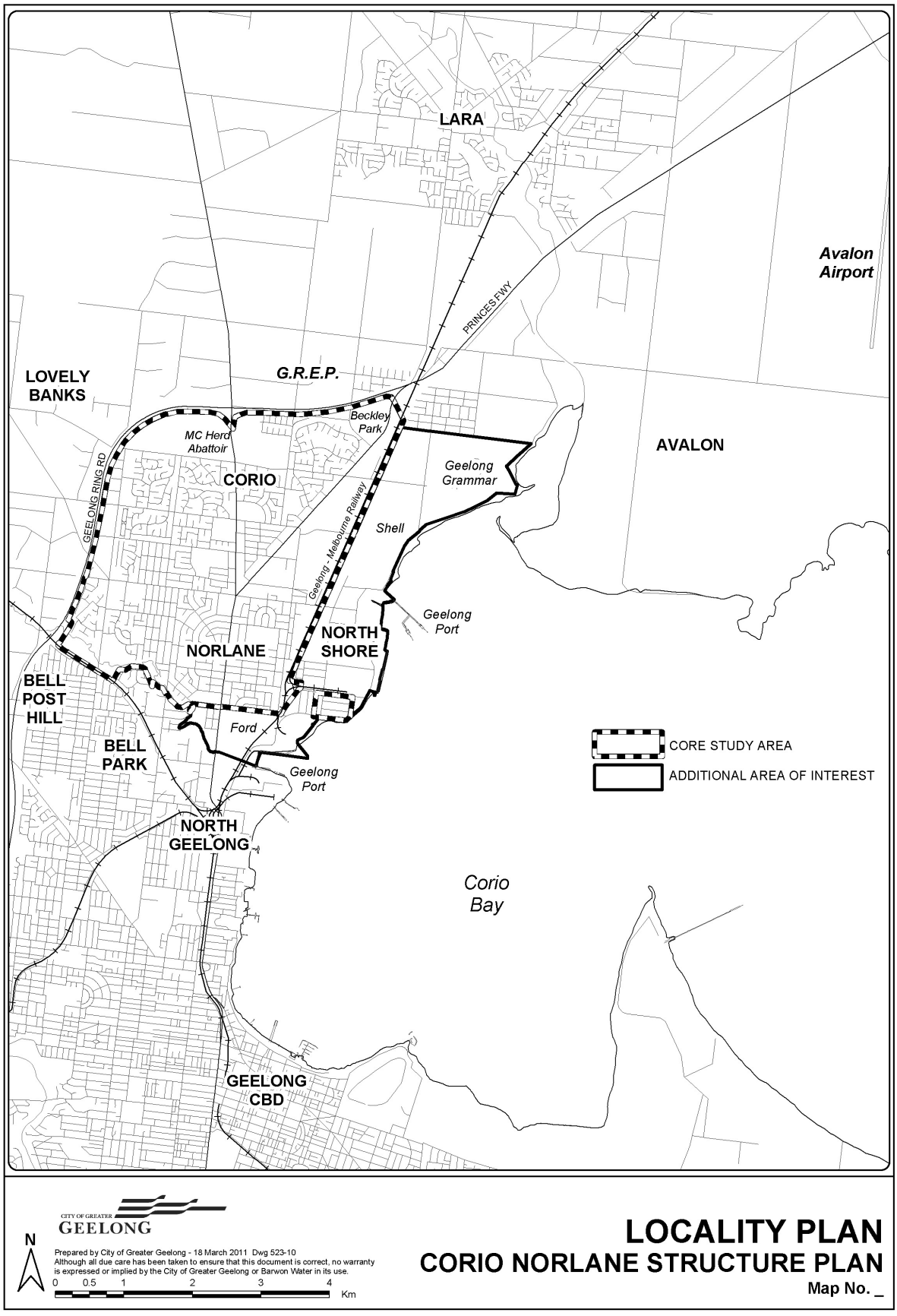
The Corio Norlane Structure Plan study area and additional area of interest is shown on **Map 3**.

For the purposes of the Corio Norlane Structure Plan the study area does not extend beyond the railway line in the east other than to include the residential neighbourhood of North Shore. Land bounded by Station Street, Harper Road, Princes Highway, School Road and the railway line south to North Shore Station is part of the study area and also covered by the *Geelong Port Structure Plan* (CoGG: 2007) and the *Port Land Use Strategy* (DoT: 2009). This work sets the strategic framework for the future development of the Geelong Port and its surrounding port related land uses. Similarly, land between the railway line and Corio Bay is an additional area of interest and part of the *Geelong Port Structure Plan* and the *Port Land Use Strategy*.

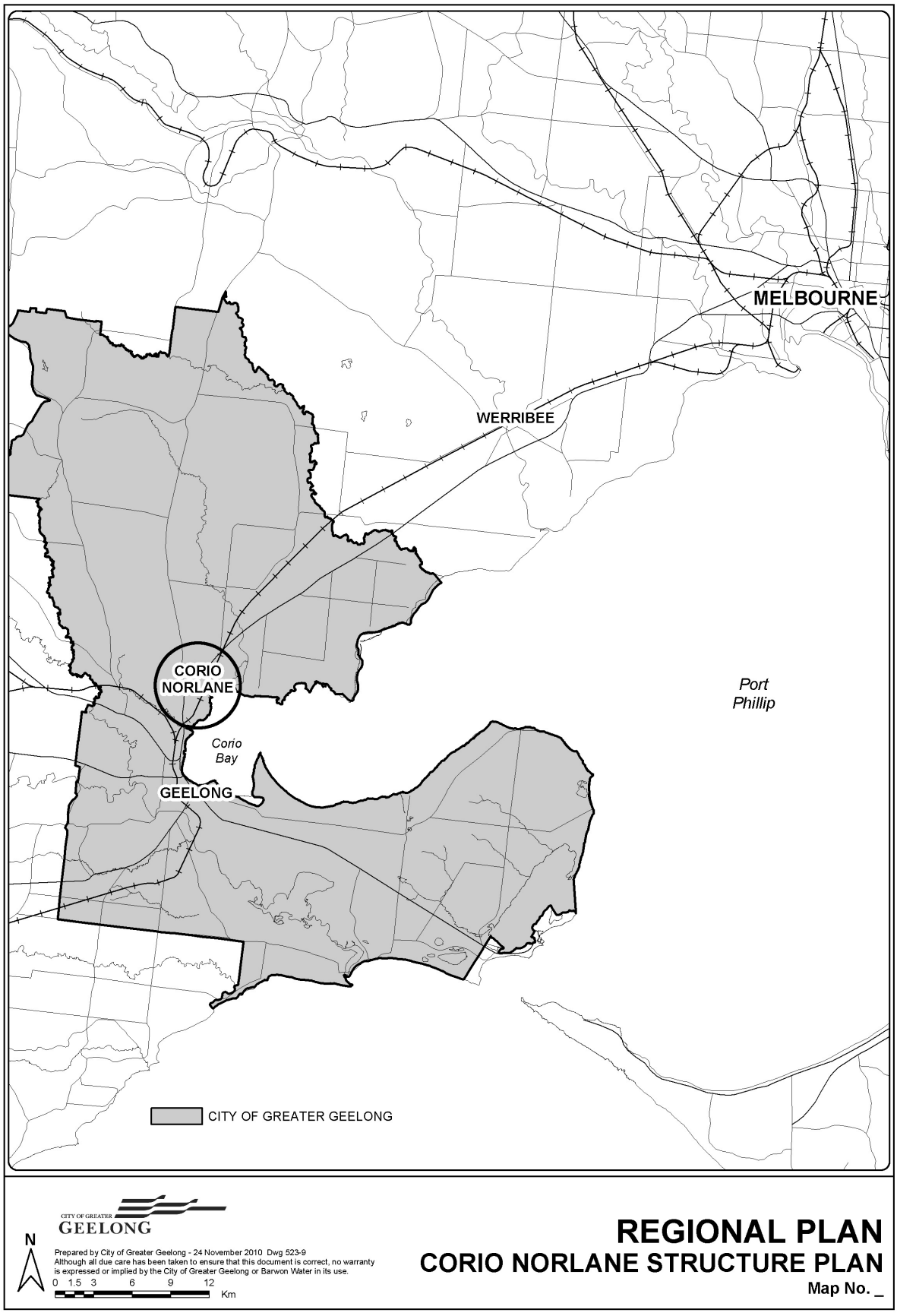
Port related land use strategies are discussed in greater detail in Section 7.5.

The Ford Motor Company site south of North Shore Road and the Shell Refinery site east of the railway are both additional areas of interest but not included as part of the study area for the Corio Norlane Structure Plan. Other significant features of the region include Geelong Grammar School, Beckley Park and the Geelong Ring Road Employment Precinct.

Map 1- Locality Plan



Map 2 - Regional Plan



Map 3 - Study Area



1.3 Indigenous Heritage Management

Protection of Aboriginal sites in Victoria is regulated by the *Aboriginal Heritage Act 2006.*

Under the *Aboriginal Heritage Act 2006* the registered Aboriginal party for this area is Wathaurung Aboriginal Corporation.

1.3.1 Aboriginal Cultural Heritage Places

There are a number of registered Aboriginal cultural heritage places sites and areas included in the Corio Norlane Structure Plan core study area. These include:

- 12 registered Aboriginal cultural heritage places located along the boundary of the Geelong Ring Road, likely to have been identified during planning for construction of the road.
- A large area of cultural heritage sensitivity, including several registered sites, in the area generally north of St Georges Road and east of the Princes Highway.
- A smaller area of cultural heritage sensitivity in the residential/foreshore interface along The Esplanade in North Shore and in the streets immediately to the north (i.e. Pine Avenue).
- An area of cultural heritage sensitivity along Cowies Creek, including a number of registered sites.

These areas have not been mapped for this report under the terms of an agreement with Aboriginal Affairs Victoria (AAV). All sites and areas are protected under the *Aboriginal Heritage Act 2006* and accompanying Regulations 2007.

Large developments and other high impact activities in culturally sensitive landscapes can cause significant harm to Aboriginal cultural heritage. Cultural Heritage Management Plans provide a mechanism to protect and manage Aboriginal cultural heritage, with the involvement of Registered Aboriginal Parties, while allowing development to proceed.

1.4 Post-Contact History

A history of the study area and land to the north as far as the You Yangs and Avalon is detailed in Ian Wynd's (1981) *'So Fine A Country: A history of Corio'*. The author, in his introduction, made the following observation:

In many ways the story of Corio Shire is a microcosm of the history of Victoria. It was in the forefront of the pastoral invasion which marked the beginning of settlement in the Port Phillip District: it experienced the establishment of an agricultural society in the years following the gold rushes, as did the new colony as a whole; its gradual development of industry paralleled that of Victoria, including the intensive activity after the two world wars; finally it shared in the migrant experience which did so much to boost Victoria's and Australia's population after World War II.

The City of Greater Geelong engaged Authentic Heritage Services Pty Ltd (Rowe & Huddle) to produce the *City of Greater Geelong Outer Heritage Study Stage 2* (1998-2000). The section: *Environmental History Volume 2* includes a historical record of the study area, which is summarised below.

Matthew Flinders was the first European to enter the area when, in 1802, he rowed across Corio Bay from the vicinity of modern Portarlington and climbed the highest point of the You Yangs. However it was not until the arrival of pastoralists (particularly sheep) in the 1830s that a European settlement was established at Cowies Creek. This vague district was centred on the creek, named for John Anthony Cowie, pioneer squatter in

partnership with David Stead, but it extended up the creek towards Batesford and northward to include present day Corio. By 1849 most of the surrounding land had been sold and by 1854 there was a sufficient population to create the need for a school.

As time went by the traditional practices of grazing sheep and cattle and growing crops was joined by extractive industries for limestone, brick making and stone, and the processing of primary products. Most of the manufacturing industries, including gas, paper, timber, wool and concrete only made an appearance well into the twentieth century.



Photo 1 - Norlane looking towards Geelong in 1925

Source: http://en.wikipedia.org/wiki/Norlane,_Victoria

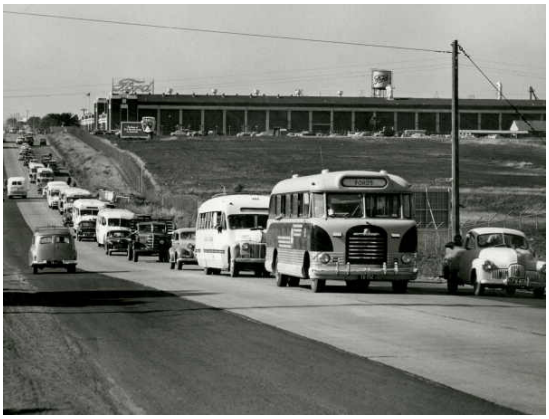


Photo 2 – Melbourne Road, Norlane, near Cowies Creek in 1957.

Source: http://en.wikipedia.org/wiki/Norlane,_Victoria

One of the most important industries to be established in the study area was the automotive industry.. In August 1926 a Ford Motor Company plant was in full production and nearly 36,000 T models were produced before the new A models were produced in 1928. In World War II Ford played an important role in producing military vehicles, craft and weaponry. After the war the first fully Australian Ford, the Falcon, was produced in 1960 at the newly built Broadmeadows plant with the Geelong plant concentrating on engine manufacture. The advent of the Company not only brought employment at the plant; it also brought about the expansion of existing industries or the creation of new ones to supply parts or services to Ford.

Another key industry established was the oil industry, with the development of a Shell Refinery adjacent to Corio Bay in 1954. This investment – the first major Australian oil refinery to be completed in the post-war era – provided employment opportunities and community facilities, as well as supporting numerous feeder businesses.

The industrialisation mentioned above was responsible for population growth in the former Corio Shire area in the 1920s, but the biggest growth came after World War II when the population increased tenfold from the 5,000 mark in 1947 to 55,694 in 1991. The majority of this population increase was composed of migrants, mainly from Great Britain and Europe.

Providing homes for this influx of population was a major task, especially in the immediate post war years when a shortage of building supplies was the norm. Homes were built by the individual owner, the commercial builder, or the Victorian Housing Commission. The major builder in the study area was the Victorian Housing Commission which created new suburbs in the process – Norlane, Corio and Rosewall, Norlane being the first. The Commission built 5,022 houses over a 30 year period, however many houses it built were sold, so that by 1987 its stock was reduced to 1,943.

1.5 Role of Corio and Norlane

Geelong is a growing provincial centre due to its strategic location and infrastructure assets. It is in close proximity to Melbourne, well served by road, rail, port, air and communications infrastructure, and offers a high standard of living and a quality natural environment.

Northern Geelong is recognised as the industrial hub of the region. Corio and Norlane form part of northern Geelong, together with the nearby suburbs of North Geelong, Lara and Avalon. The study area is directly connected to major employers and institutions and contains significant stock of land zoned Industrial 2. This zone is for industry that requires significant buffer distances from sensitive land uses and is one of a few such zoned areas in the State and is of State significance. Industrial uses, in particular large-scale manufacturing, freight and logistics, are located on the eastern and northern boundaries.

Corio and Norlane are the northern gateway to Geelong, the Bellarine Peninsula and Victoria's west coast. The study area provides for significant through road linkages, including heavy vehicles destined for the Geelong Port and the Geelong Ring Road Employment Precinct. The Geelong – Melbourne railway line runs along the eastern edge of the study area and there are stations at Corio and North Shore. North Shore train station is where passengers disembark from the Adelaide to Melbourne line.

Corio and Norlane contains an internal "population-driven" retail, education and community services economy. Corio Shopping Centre is the major retail and community facility in the study area and serves a catchment extending to the north of urban Geelong and the township of Lara, and to the south of the study area boundaries. The Centre includes the Barwon Health Community Centre, the only such facility north of Geelong Hospital. The area also contains the Geelong Homemaker Centre and a bulky goods cluster on Princes Highway that attract customers from across the Greater Geelong region.

The study area contains many key assets including excellent community service organisations and well placed physical infrastructure that serve a regional role. Regional assets include Northern Bay Senior College, Waterworld, Corio Library, Centenary Hall, Stead Park, Goldsworthy Reserve, Beckley Park and the Leisuretime Centre, Geelong's biggest indoor open spaced stadium.

Another key role of Corio and Norlane is as a place of affordable residence. The suburbs that make up the study area are predominately zoned Residential 1 and contain some of the most affordable housing in close proximity to a range of employment, services and infrastructure in Victoria. There are significant opportunities for infill residential development and redevelopment to absorb predicted population growth in the Geelong region and reduce pressures to expand the urban form into rural hinterland. The area also supports high concentrations of public housing which provides important wider social functions.

2.0 Policy and Strategy Context

The following section provides an overview of State Government and Council policies and strategies that will influence planning for the Corio and Norlane area.

2.1 Urban Growth and Land Use

2.1.1 Melbourne 2030 – Planning for sustainable growth (Department of Infrastructure, October 2002)

Melbourne 2030 is a 30-year plan to manage growth and change across metropolitan Melbourne and its surrounding region. The following directions of Melbourne 2030 are relevant to the Corio-Norlane structure plan project:

- Direction 3: Networks with the regional cities – promote the growth of regional cities and key towns on regional transport corridors as part of a networked cities model
- Direction 5: A great place to be – promote good urban design to make the environment more liveable and attractive, improve community safety and encourage neighbourhood design that makes people feel safe, promote excellent neighbourhood design to create attractive, walkable and diverse communities
- Direction 6: A fairer city – increase the supply of well-located affordable housing, plan for a more equitable distribution of social infrastructure

2.1.2 Melbourne 2030: a planning update - Melbourne @ 5 Million (State Government of Victoria, Department of Planning and Community Development, December 2008)

Melbourne @ 5 million builds on *Melbourne 2030* as the long-term plan for Melbourne and the surrounding region. Using population projections from Victoria in Future (2008), the plan highlights that regional Victoria will grow by approximately 477,000 people between 2006 and 2036, and that the regional centres of Geelong, Ballarat and Bendigo will accommodate approximately 40% of regional Victoria's population growth.

2.1.3 Ready for Tomorrow: A blueprint for regional and rural Victoria (State of Victoria, 2010)

Ready for Tomorrow – A Blueprint for Regional and Rural Victoria was released by the Brumby Labor Government in 2010 as a $631 million plan to manage growth, create jobs, improve education opportunities, build infrastructure and support economic development in regional and rural Victoria.

Ready for Tomorrow includes a Regional Settlement Framework that identifies Geelong as a major regional city in which strong growth is encouraged to occur.

2.1.4 Victorian Integrated Housing Strategy (Department of Human Services, March 2010)

The Victorian Integrated Housing Strategy identifies future directions and priorities to ensure housing is affordable and accessible to Victorians. It recognises the need for the housing sector to respond to changing economic conditions, changes in household structures, social inequality, and the future impacts of climate change. Implementation of the strategy will include ongoing partnership between the State government, not-for-profit housing providers, the private sector and the broader Victorian community.

Over the longer term, the strategy aims to achieve:

- More diverse and affordable housing options for Victorians
- A supply of housing that reflects population growth and demographic change

- A significant increase in the supply of housing in existing areas
- A greater supply of affordable rental housing and more security and stronger rights for renters
- An increase in the supply and quality of social housing
- A significant reduction in homelessness
- More housing options and greater support for people in social housing, including people with a disability, mental illness and Indigenous Victorians
- Better designed homes that are more water and energy efficient, more accessible and that can adapt to a changing climate

2.1.5 Safer Design Guidelines for Victoria (Department of Sustainability and Environment, 2005)

The Department of Planning and Community Development (then DSE) released the Safer Design Guidelines to provide practical design suggestions for achieving development that is safer and improves the feeling of safety within the community. The guidelines are intended to help reduce the opportunity for crime and improve perceptions of safety in public spaces. The guidelines should be considered in developing planning scheme policies and controls, structure plans, and urban and neighbourhood renewal projects.

The Safer Design Guidelines for Victoria are based on the following principles:

- Surveillance – maximise visibility and surveillance of the public environment
- Access, Movement and Sightlines – provide safe movement, good connections and access
- Activity – maximise activity in public places
- Ownership – clearly define private and public space responsibilities
- Management and Maintenance – manage public space to ensure that it is attractive and well used

2.1.6 Neighbourhood Renewal – Mainstreaming Strategy (Department of Human Services , 2007)

Neighbourhood Renewal is an eight-year targeted initiative by the State Government to narrow the gap between disadvantaged neighbourhoods and the rest of the State. Research and experience shows that hardship is concentrated in localised pockets or neighbourhoods. These communities have significantly worse outcomes in relation to employment, income, housing, education, crime and health. The mainstreaming strategy will underpin a more systematic place-based approach by the Victorian Government to:

- reducing inequality and social exclusion;
- enhancing participatory democracy;
- building stronger communities.

2.1.7 G21 Geelong Region Plan – a sustainable growth strategy (Geelong Region Alliance, 2007)

The G21 Geelong Region Plan is a sustainability plan for the region that looks toward 2050. It identifies and addresses the challenges the region will face in the areas of environment, settlement, land use, community strength and the economy. One of the priority projects of the G21 Geelong Region Plan is addressing disadvantage across the

region, and particularly in identified pockets of severe disadvantage including Corio, Norlane, Colac and Whittington. The G21 Alliance has identified the need for funding for proposed restructuring of educational and health facilities at Corio and Norlane, development of community hubs at Corio West, North Shore and Norlane West, and urban renewal works including master planning and rezonings.

2.1.8 G21 Regional Land Use Plan (Geelong Region Alliance, in preparation)

The G21 RLUP will be a land use strategy for the region focusing on identifying opportunities for accommodating future urban growth and addressing key environment, land use and development impacts. It will identify development potential in existing and new urban areas. The G21 RLUP will be implemented through the City of Greater Geelong township structure and growth plans, infrastructure planning by authorities and the ongoing engagement and co-ordination of major stakeholders.

2.1.9 City, Coast, Country: City of Greater Geelong Urban Growth Strategy (City of Greater Geelong, 1996)

The Urban Growth Strategy identifies the directions for urban development to accommodate Geelong's expected growth to the year 2020. The strategy identifies locations for future growth within the municipality, including sites within the existing urban area that may be appropriate for urban consolidation.

2.1.10 City of Greater Geelong Housing Diversity Strategy (City of Greater Geelong, 2007)

The Housing Diversity Strategy aims to provide for the development of a range of housing types and densities in the City of Greater Geelong to meet the city's existing and future needs. It is intended to provide greater certainty to the existing and future community with regard to where different housing types and densities will be supported by Council, and will support the development of a more sustainable urban structure across Geelong.

The Corio Village Shopping Centre is identified as a sub-regional centre that supports an Increased Housing Diversity Area (determined by an 800-metre walkable catchment from the shopping centre). Some key objectives of the strategy in relation to Increased Housing Diversity Areas (IHDAs) are:

- Encourage a mix of high, medium and conventional density housing;
- Direct high density development to sites immediately within and adjoining the commercial core of the area; and
- Encourage the development of a mix of uses at the commercial core of the area.

The area around the periphery of the IHDA is identified as an Incremental Change Area, where low scale medium density development is encouraged.

2.1.11 City of Greater Geelong Residential Character Study: Character Precinct Brochures (Planisphere for City of Greater Geelong, September 2001)

The aim of the Residential Character Study is to ensure that residential development respects and enhances the preferred future character of the City. The study analyses the diverse range of character types found in the municipality; from garden suburbs to inner city urban areas to the coastal townships of the Bellarine Peninsula. Taking into account a variety of matters, in particular community views, a statement of preferred future character has been developed for each area. The preferred character is expressed through guidelines and policies for each precinct in the city, which is intended to inform design and assess new residential development in the precinct.

2.1.12 Geelong Port Structure Plan (City of Greater Geelong, 2007)

The Geelong Port Structure Plan sets the strategic framework for the future development of the Geelong Port and its surrounding port related land uses including freight logistics and movement as well as port related industries such as warehousing, distribution and processing of goods entering and leaving the port.

The Geelong Port Structure Plan area overlaps with the eastern extent of the Corio Norlane study area (land east of the Princes Highway to the railway line). Recommendations relevant to the Corio Norlane Structure Plan relate to protection of industrial buffers, transport linkages and improvements (including public transport and station upgrades), industry performance (environmental and emissions) and land zoning (such as the application of the Industrial 3 Zone at interface areas).

2.2 Physical Infrastructure

2.2.1 City of Greater Geelong Stormwater Management Plan (City of Greater Geelong, 2003)

The SWMP was commissioned to guide the City in improving the environmental management of stormwater throughout the municipality. It provides a basis for the City to manage stormwater using best practice and protect the community's enjoyment of the region's natural and man made waterways. It provides a framework for integrating stormwater management as part of its existing management and planning activities and as such is intended to provide an ongoing process aimed at protecting and enhancing receiving environmental values and beneficial uses that are currently threatened by stormwater runoff.

2.3 Transport

2.3.1 The Victorian Transport Plan (State Government of Victoria, 2008)

The Victorian Transport Plan (VTP) sets out the Government's vision and plans for developing an integrated, sustainable transport system for Victoria over the next 20 years. Major initiatives include the Regional Rail Link – a new 40 km twin-track rail link from West Werribee to Southern Cross Station via Tarneit to allow rapid access to Melbourne for Geelong, Ballarat and Bendigo trains.

The VTP identified other initiatives relevant to Greater Geelong:

- Improved bus services – starting immediately – and a new bus interchange in the Geelong CBD.
- The completion of the Mildura-Geelong Rail Freight Upgrade.
- $80 million for bus improvements.
- The completion of the Geelong Ring Road.

2.3.2 Geelong Transport Strategy (City of Greater Geelong, 2003)

The Geelong Transport Strategy was initiated to provide a framework for the future development of the transportation network for the entire municipality over the next decade. The Strategy provides direction for Geelong to remain an efficient and sustainable national and international regional passenger and freight hub.

2.3.3 Geelong Freight Linkages Study (VicRoads, 2008)

To address issues associated with freight access to the Port in a post Geelong Ring Road context, a Freight Linkages Study was undertaken by VicRoads. Bacchus Marsh Road and Shell Parade have been identified as the key Port freight routes for future planning.

2.3.4 Freight Futures - the Victorian freight network strategy (State of Victoria, 2008)

Freight Futures is a long-term strategy to shape an efficient and sustainable freight network for Victoria. The strategy provides the blueprint for a secure and properly planned freight infrastructure network.

The strategy responds to the many factors that are driving changes in patterns of supply and demand. It provides industry with long term security through a clear statement of what the principal freight network is now and in the future, and a more predictable policy and regulatory environment.

Freight Futures identifies a Principal Freight Network of key transport (road, rail, sea and air) corridors which link the Freight Activity Centre (FACs), particularly those of national, state and regional significance. Freight Futures recognises ports as particularly important FACs with special attributes and needs and sets out a range of actions to ensure their ongoing efficiency and sustainability.

2.3.5 Port Futures – New Priorities and Directions for Victoria's Ports System (State of Victoria, 2009)

The Victorian Government's Port Futures strategy was released in August 2009 to deliver an efficient, integrated and sustainable ports system that fits seamlessly into national transport and freight networks. The strategy introduced policy and strategy settings to maximise the contribution of Victoria's ports to state and national economic prosperity.

Port Futures addresses the following key issues of particular relevance to the Port of Geelong:

- Port governance arrangements.
- Port planning and protection.
- Port safety, security and environmental performance.

2.4 Economic Development

2.4.1 The way forward: a strategic plan for social transformation 2009-2013 (Northern Futures, 2009)

This strategic plan for Corio Norlane aims to leverage government and community support to minimise social and economic impacts from manufacturing downturns. It presents strategies to strengthen the local community and link the needs of employers and the community to create employment and training opportunities.

These strategies are to:

- Support economic growth through development of a flexible and responsive workforce, investment in infrastructure expansion, and stimulation of the local economy.
- Link labour supply and demand through reducing unemployment, increasing productivity, connecting communities (including public transport links), supporting the growth of small to medium enterprises and strengthening employer and educational linkages.
- Strengthen education and training through improved school retention and post school education completion rates, improved learning infrastructure, opportunities and support, and improved access to early years education.

2.4.2 Greater Geelong Economic Development Strategy (City of Greater Geelong, 2005)

Geelong's Economic Development Strategy (2005-2010) aims to attract and retain skilled workers and investment. A focus is on developing a global competitive advantage, creation of an environment for business collaboration (as seen in CBD knowledge economies) and facilitating a desirable living environment. Research, knowledge and innovation are seen as underpinning Geelong's economic future, requiring ongoing infrastructure to support new investment and reduce production costs. Matching employee skills with industry requirements is also highlighted.

2.4.3 Economic Development Blueprint - Geelong: Open for Business (City of Greater Geelong, 2009)

Geelong: Open for Business ("the blueprint") identifies the Northern Gateway, Waterfront and Central Geelong, and Southern Corridor as the three key precincts that provide the foundation for Geelong's economic development capacity. These precincts contain a suite of assets where much of Geelong's economic development has and will continue to occur and where public and private investment will be focused.

The Northern Gateway is a major National transport and logistics hub strategically positioned as a 'gateway' between Geelong and Melbourne, Victoria's Western District and wider domestic and international markets. The Northern Gateway encompasses the northern and eastern parts of the Corio and Norlane Structure Plan area, including the core industrial sites occupied by Ford, Shell, Air Radiators and the MC Herd Abattoir.

Core assets within the Northern Gateway include the Geelong Ring Road Employment Precinct (formerly Heales Road Industrial Estate), Avalon Airport and the Port of Geelong.

The blueprint identifies the key development opportunities within the Northern Precinct as:

- Development within the Geelong Ring Road Employment Precinct;
- Improved rail freight connection to Lascelles Wharf;
- Development of Lara Intermodal Freight Terminal;
- Development of an International Terminal at Avalon Airport;
- Development of an industrial marine precinct in North Geelong for boat-related manufacturing, maintenance and repairs, storage and slip/lift facilities;
- Proposed neighbourhood renewal, public housing and schools regeneration projects in Corio and Norlane

2.4.4 Geelong: Creating Jobs in the 21st Century – Employment Land Opportunities (City of Greater Geelong, 2008)

This document assesses each employment precinct in the Geelong region, including features, attributes, planning frameworks and aspirations for future development. The following aspirations are noted for precincts in close proximity to Corio and Norlane:

- Port of Geelong Precinct: to promote the growth and development of the port, and provide land and servicing resources to support that growth.
- Heales Road Industrial Estate: to accommodate key development activities including port and manufacturing industries, and regional production and support activities.

- North Geelong Precinct: to encourage light industrial, business and wholesaling activities.

2.4.5 Heales Road Industrial Estate Framework Plan (City of Greater Geelong, 2007)

The Heales Road Industrial Estate Framework Plan outlines the future for 500 hectares of industrial land on Geelong's northern fringe. It is anticipated that the area will attract large manufacturing firms, particularly those utilising port functions. An emphasis will be on advanced manufacturing firms, production support firms (transport, logistics and packaging) and businesses providing services for employees in the area. The framework plan aims to:

- Establish precincts within the estate, depicting discrete areas where specific industrial land use and development outcomes are sought;
- Establish minimum lot size requirements for each precinct;
- Establish amenity and infrastructure requirements to support the estate's future development; and
- Recommends amendments to the City of Greater Geelong's Planning Scheme.

2.4.6 Port of Geelong – Port Land Use Strategy (Department of Transport and Port of Geelong, 2009)

This document provides a framework of strategic directions and actions for growth of the Port of Geelong, and land use directions in and around the Port. It seeks to provide adequate infrastructure within the port, adequate land to support the growth of the port and port related industries, and effective transport linkages within and between the port and other areas. It also considers the requirements for land use buffers around the port, effective safety, security and environmental management, and opportunities to contribute to local community programs and facilities.

2.4.7 Economic Independence and Social Inclusion (2007)

This discussion paper identifies strategic challenges and options in response to key issues, opportunities and threats arising from changing economic and demographic factors in northern Geelong. It views economic independence and workforce participation as fundamentals for social inclusion and a strong economy. Strategies and resources therefore need to address human and physical capital to ensure that Corio and Norlane become major contributors to and beneficiaries of economic development, and have a sustainable future. Initiatives include prioritising Geelong as a major transport hub, encouraging investment in research and development, and creating jobs that match residents' skills.

2.4.8 Employment Vulnerability Index (Centre of Full Employment and Equity, University of Newcastle in collaboration with the Urban Research Program Griffith University, 2009)

This academic research report articulates the potential qualitative and quantitative effects of the global economic crisis on employment in urbanised areas of Australia. It notes that Geelong is particularly vulnerable, with the suburbs of Corio and Norlane in the riskiest quadrant of the index. The report also presents potential government initiatives which could be employed to help address the situation.

2.4.9 Economic and Land Use Impacts of Geelong Ring Road (SGS Economic and Planning for Regional Development Victoria, City of Greater Geelong, Committee for Geelong and G21 Region Alliance, 2009)

The Geelong Ring Road is a 23 kilometre freeway running along the western outskirts of Geelong, commencing in northern Geelong. This report identified potential economic

and land use impacts of the road on the G21 region. These included increased (over base case) population and employment and increased market demand for residential dwellings, office floor space and industrial land. However, the distribution of the growth favours southern and western parts of the wider region as opposed to urban Geelong itself.

2.4.10 Key Economic Indicators Bulletins, (City of Greater Geelong, monthly)

The Key Economic Indicators Report monitors the region's economy by reviewing the monthly unemployment rate, job advertisements, quarterly median house prices, quarterly ABN registrations, monthly domestic building activity and monthly non-domestic building activity. The report complements the annual Economic Indicators Bulletin.

2.4.11 City of Greater Geelong Retail Strategy (Essential Economics for City of Greater Geelong, 2006)

Essential Economics Pty Ltd, in association with Planisphere prepared the City of Greater Geelong Retail Strategy 2006 to guide the on-going development of the retail sector and retail activity centres in the City.

Corio Village along with Belmont and Waurn Ponds are identified as the three sub-regional centres across Greater Geelong. The Strategy identifies these three centres as focal points for a wide range of economic and social activities, including retail facilities, commercial office functions, community, medical and civic facilities, and leisure and entertainment uses. The Strategy recognises that the consolidation of these activities will be enhanced by the provision of improved public transport services.

The strategy identifies Bell Post Shopping Centre as one of a number of neighbourhood centres across Greater Geelong. This strategy recognises that the centre as a relatively poor performing centre despite its recent refurbishment. This is partly attributed to its location directly to the north of the significant barrier of Cowies Creek which limits the accessibility of the centre to suburbs to the south.

A more detailed and recent assessment of neighbourhood and other retail centres in the structure plan area was undertaken in an assessment prepared for the Corio Norlane Urban Renewal Project by Essential Economics in 2009.

2.5 Social

2.5.1 Future Provision of Community Services Infrastructure in Norlane/Corio, City of Greater Geelong 2009

The City of Greater Geelong has developed a strategic direction for future provision of community services infrastructure for Corio and Norlane. The report titled *Future Dreaming: Community Infrastructure Analysis for Corio Norlane* (DLA Nov 2009) is to be used as a reference and informing document for Council's priorities, actions and engagement with State and Federal Governments and local communities.

2.5.2 Geelong Public Library Buildings Development Strategy (City of Greater Geelong, 2009)

In September 2009 the City of Greater Geelong adopted a strategy for Geelong public library building developments. The Strategy identifies the Corio library (John Drysdale Library) as a sub-regional branch supporting mobile libraries and the new Lara library. A review of the facility is recommended in 15+ years.

2.5.3 Blueprint for Education and Early Childhood Development, State of Victoria (Department of Education and Early Childhood Development) 2008

This Victorian Government Blueprint outlines an integrated reform agenda designed to improve performance and promote excellence across the State's schools and early

childhood services. It articulates specific actions to achieve the Blueprint's goals, organized under three major strategies: system improvement; partnerships with parents and communities; and workforce reform.

A key strategy relevant to the study area is the establishment of community hubs. Government policy is to promote schools and other children's centres as community hubs, through co-location and integration of services and increased community use of school facilities. The Government will support the leadership role of local government in improving early childhood services. Municipal Early Years Plans will be further developed as the local mechanism for aligning and coordinating policy and local priorities for children aged 0 – 8.

2.5.4 Moving Forward: Making Provincial Victoria a better place to live, work and invest, State of Victoria 2005

In 2005, as part of the Victorian Government's *Moving Forward: Making Provincial Victoria a better place to live, work and invest* (2005), Corio Norlane was identified as a location requiring significant urban renewal. This was based on the recognition that, while considerable improvements had been achieved through investments in Corio Norlane, the level of investment was not aimed at bringing about the transformational change needed to address the scale and entrenchment of disadvantage in the area.

2.6 Environment

2.6.1 City of Greater Geelong Environment Management Strategy (EMS) 2006-2011

The aim of the EMS is to actively promote sustainability in all the actions and activities undertaken by the City. The EMS includes an Action Plan, which comprises an assessment of the issues affecting key themes including: Biodiversity Management; Sustainable Agriculture; Coastal & Marine; Waterways & Wetlands; Air Quality; Resource Use; Waste, Recycling and Reuse and; Urban Settlements.

The Strategy establishes the City's environmental and sustainability policy framework. The Geelong Sustainability Framework establishes the City's approach to sustainable development and sound environmental management.

2.6.2 City of Greater Geelong Biodiversity Strategy 2003 (City of Greater Geelong),

The vision of this strategy is for the City to be a place *"within which biodiversity plays an important role, where the right of future generations to healthy, complete and vibrant biodiversity is entrenched, and to be a City that actively protects its biological wealth and prioritises long term responsibility over short-term gains".*

2.6.3 2.6.3 City of Greater Geelong Strret Tree Strategy (City of Greater Geelong, June 2009)

The Street Tree Strategy was prepared by the Tree Management Unit of the City of Greater Geelong. The Strategy will act as the major tool for street tree management in the municipality. It will provide the framework used by Council to develop, protect and manage its street tree assets for future generations to experience and enjoy.

The Strategy consolidates the range of issues associated with the management of Council's street trees and formalises current street tree management practices and procedures.

2.7 Recreation and Open Space

2.7.1 Study of Open Space Networks, City of Greater Geelong, 2001

This comprehensive study provides a framework for the future coordination, development and management of open space in and around the City of Greater Geelong. Geographically and socially the City is viewed in three broad areas, one being Central, which includes Corio and Norlane.

The study finds deficiencies in the central areas of Norlane, Corio, Bell Park, North Geelong, Geelong itself, South Geelong and on into parts of Belmont and Highton. In these areas there is often a lack of significant open space areas and linkages to open space.

2.7.2 Walking More: Walking Safely, City of Greater Geelong, May 2004

The '*Walking More Walking Safely'* study was commissioned by the City of Greater Geelong and partly funded by Sport and Recreation Victoria (SRV) through the Planning Community Facilities Funding 2002-03, to review current walking trends and patterns. A key aim of this study was to guide how the City of Greater Geelong is responding to changing leisure patterns and in particular enhancing the provision of passive recreation options for residents.

2.7.3 City of Greater Geelong Cycle Strategy 2008

The City of Greater Geelong Cycle Strategy has been developed to provide Council with guidance on expanding Geelong's regional on and off road cycle network, improving bicycle facilities, enhancing cyclist education and delivering promotions that encourage people to cycle as a means of transport, recreation and sport.

2.8 Planning Scheme Policy, Zones and Overlays

Table 1 below lists State and Local Planning Scheme policies relevant to the Study Area.

Table 1 - State and Local Planning Policies

Clause	Key Objectives and Provisions	Implications for Study Area
11 Settlement	Requires planning to anticipate and respond to the needs of existing and future communities through provision of zoned and serviced land for housing, employment, recreation and open space, commercial and community facilities and infrastructure. Requires that planning avoids creating environmental problems through siting incompatible land uses close together. Requires that planning facilitates sustainable development that takes full advantage of existing settlement patterns, and investment in transport and communication, water and sewerage and social facilities.	Sets broad direction for planning in the study area.
21.02: City of Greater Geelong Sustainability Framework	The Sustainable Growth Framework sets out key principles for ensuring that all actions and development undertaken in the City of Greater Geelong meets the needs of the present community, without compromising the ability of future generations to meet their own needs.	Key implications for the study area include directions to • Design healthy walkable neighbourhoods • Deliver safe, accessible linkages within and between towns that encourage walking, cycling and the use of alternative modes of transport. • Take climate change into account when considering the location and design of urban areas. • Strive for environmentally sustainable design in all urban development
21.04 Municipal Framework Plan	Contains a framework plan for the municipality that identifies preferred growth areas.	Corio and Norlane are existing urban area with limited capacity for expansion other than through consolidation of the existing urban area.
21.05 Natural Environment	Details key issues relating to vegetation, flora and fauna, coastal environments, climate change and flooding.	Key implications for the study area include directions to: • Manage and plan for the protection of environmental assets • Encourage development to incorporate best practice energy efficiency design principles and measures • Recognise flood hazards
21.06 Settlement and Housing	Relevant strategies include supporting consolidation of existing urban areas, particularly within 'Increased Housing Diversity Areas'; ensuring new development responds to the existing neighbourhood	Land within 800 metres of the Corio Shopping Centre and 400 metres of the Bell Post Shopping Centre are recognised as 'Increased

Clause	Key Objectives and Provisions	Implications for Study Area
	character; and protecting places of pre and post contact cultural heritage significance. This clause references Council's Housing Diversity Strategy and Residential Character Brochures.	Housing Diversity Areas' for higher density housing. Progression of the Norlane Housing Regeneration Development project is recognised as a priority for the structure plan area. There is support for the redevelopment of dwellings owned by the Office of Housing, as part of urban renewal initiatives. Preparation of structure plans for Increased Housing Diversity Areas to inform preparation of a more comprehensive set of provisions to realise the policy objectives for these areas, is a requirement under 'further work'. Review of Residential Character Study: Character Precinct Brochures is a requirement under 'further work'.
21.07 Economic Development	Relates to industry, retail, rural and tourism. Relevant strategies relate to protecting industry from incompatible land uses, supporting an integrated Geelong Transport Strategy that connects industry with the rail and freeway network, facilitating the development of vibrant and viable retail activity centres in accordance with the Geelong Retail Activity Centre Hierarchy and directing restricted retail (bulky goods) retailing to the Corio homemaker precinct subject to appropriate re-zoning,	The City of Greater Geelong Retail Centre Hierarchy identifies Corio Village Shopping Centre as a sub-regional centre and Bell Post Shopping Centre as Neighbourhood Centre. Corio is identified as a potential homemaker precinct.
21.08 Development and Community Infrastructure	Key objectives relate to transport, development contributions, open space and accessibility.	Structure plans and landscape plans for public spaces should support policy objectives for well-connected linear open spaces and provide sufficient open space where residential densities are increased. New community infrastructure should provide safe accessibility for all members of the community. Development contributions plans should be prepared for growth areas.

2.8.1 Zones

The area is subject to the Greater Geelong Planning Scheme with land located in a number of urban and rural zones as described **Table 2** below and shown in **Map 4**.

Table 2 - Zones

Zones	Description
Residential 1 Zone (Clause 32.01)	All residential land in the structure plan area is zoned Residential 1 with the exception of land located to the north of Plantation Road (between Plantation Road and the Geelong Ring Road). The purpose of this zone is to provide for residential development at a range of densities with a variety of dwellings to meet the housing needs of all households.
Low Density Residential Zone (Clause 32.03)	Land at 270-302; 304-308; and 310-312 Plantation Road is zoned Low Density Residential (LDRZ). The purpose of this zone is to provide for low-density residential development on lots which, in the absence of reticulated sewerage, can treat and retain all wastewater. Authorisation was granted by the Minister for Planning in 2008 to rezone the land from LDRZ to R1Z, however it was not acted upon in the required time and has since lapsed.
Industrial 1 Zone (Clause 33.01)	Large tracts of land on the eastern side of the Princes Highway and Station Street are zoned Industrial 1. This includes land occupied by the Shell Geelong Refinery. The purpose of this zone is to provide for manufacturing industry, the storage and distribution of goods and associated uses in a manner which does not affect the safety and amenity of local communities.
Industrial 2 Zone (Clause 33.02)	Land at the southern boundary of the structure plan area at North Shore Road is zoned Industrial 2. In addition, land between the eastern boundary of the structure plan area and Corio Bay (within the additional area of interest for the structure plan) is zoned Industrial 2. The purpose of the zone is promote manufacturing industries and storage facilities that require a substantial threshold distance within the core of the zone.
Industrial 3 Zone (Clause 33.03)	Land within the north eastern corner of the structure plan area occupied by [insert] is zoned Industrial 3. The purpose of this zone is to provide a buffer between the Industrial 1 Zone or Industrial 2 Zone and local communities, which allows for industries and associated uses compatible with the nearby community.
Business 1 Zone (Clause 34.01)	Corio Shopping Centre, Bell Post Shopping Centre, Aldi Supermarket and a series of other smaller local centres throughout the structure plan area are zoned Business 1. The purpose of this zone is to encourage the intensive development of business centres for retailing and other complementary commercial, entertainment and community uses.
Business 4 Zone (Clause 34.04)	There is no land inside the structure plan area zoned Business 4, however land occupied by Godfreys, OZDesign Furniture and other large format retail buildings along Melbourne Road are included in this zone. The purpose of the zone is to encourage the development of a mix of bulky goods retailing and manufacturing industry and their associated business services.
Rural Living Zone (Clause 35.03)	Small sections of land immediately abutting the Geelong Ring Road on the western boundary of the structure plan area are

Zones	Description
	zoned Rural Living Zone. The purpose of this zone is to provide for residential use in a rural environment.
Farming Zone (Clause 35.07)	Land occupied by the MC Herd Abattoir at 245-255 Bacchus Marsh Road, Corio is currently zoned Farming Zone along with land owned by the City of Greater Geelong at 299 Anakie Road, Lovely Banks. The purpose of this zone is to provide for the use of land for agriculture.
Public Use Zone 4 (Clause 36.01)	This zone applies to public land reserved for transport purposes. It applies to land occupied by the Melbourne – Geelong Railway Line, including the North Shore and Corio Station sites.
Public Use Zone 6 (Clause 36.01)	This zone applies to public land reserved for local government purposes. It applies to land occupied by the City of Greater Geelong Depot at 299 Anakie Road, Lovely Banks.
Public Park and Recreation Zone (Clause 36.02)	Significantly recreational spaces throughout the study area, including Stead Park and Windsor Park, as well as other smaller informal parks throughout Corio and Norlane are zoned PPRZ. The purpose of this zone is to recognise areas for public recreation and open space, protect and conserve areas of significance where appropriate and to provide for commercial uses where appropriate.
Public Conservation and Resource Zone (Clause 36.03)	Land along Cowie's Creek on the southern boundary of the study area, including the Corio Leisuretime Centre, is zoned Public Conservation and Resource. The purpose of this zone is protect and conserve the natural environment and natural processes for their historic, scientific, landscape, habitat or cultural values.
Special Use Zone Schedule 4 – Geelong Showgrounds and Racecourse (Clause 37.01)	This zone applies to the Beckley Park Racecouse located in the north east corner of the study area. The purpose of the zone is to encourage a variety of uses of the land and buildings within the racecourse facility in order to enable its usage throughout the year.

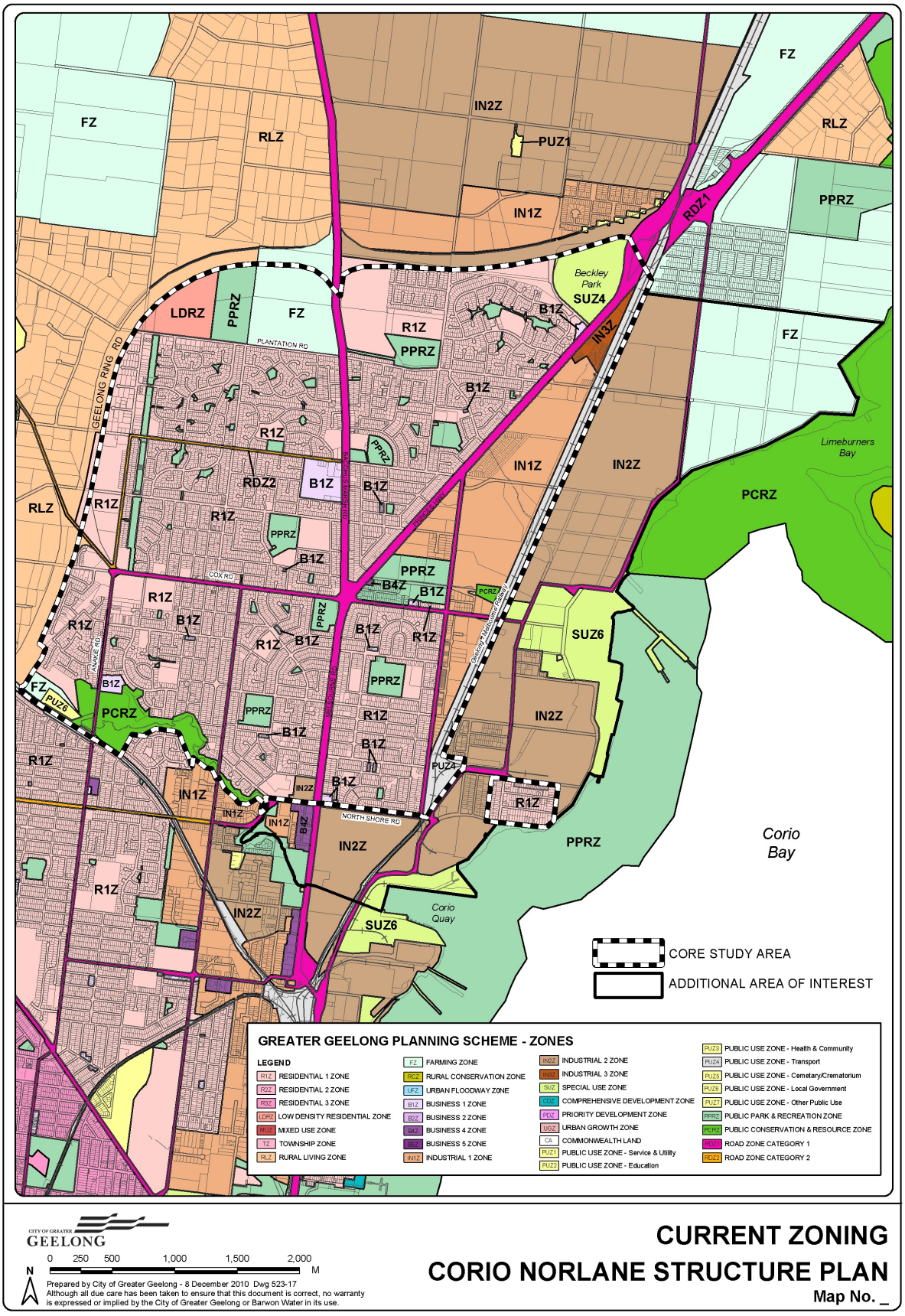
2.8.2 Overlays

The area is subject to a number of overlays as described in **Table 3** below and shown in **Map 5** and **Map 6**.

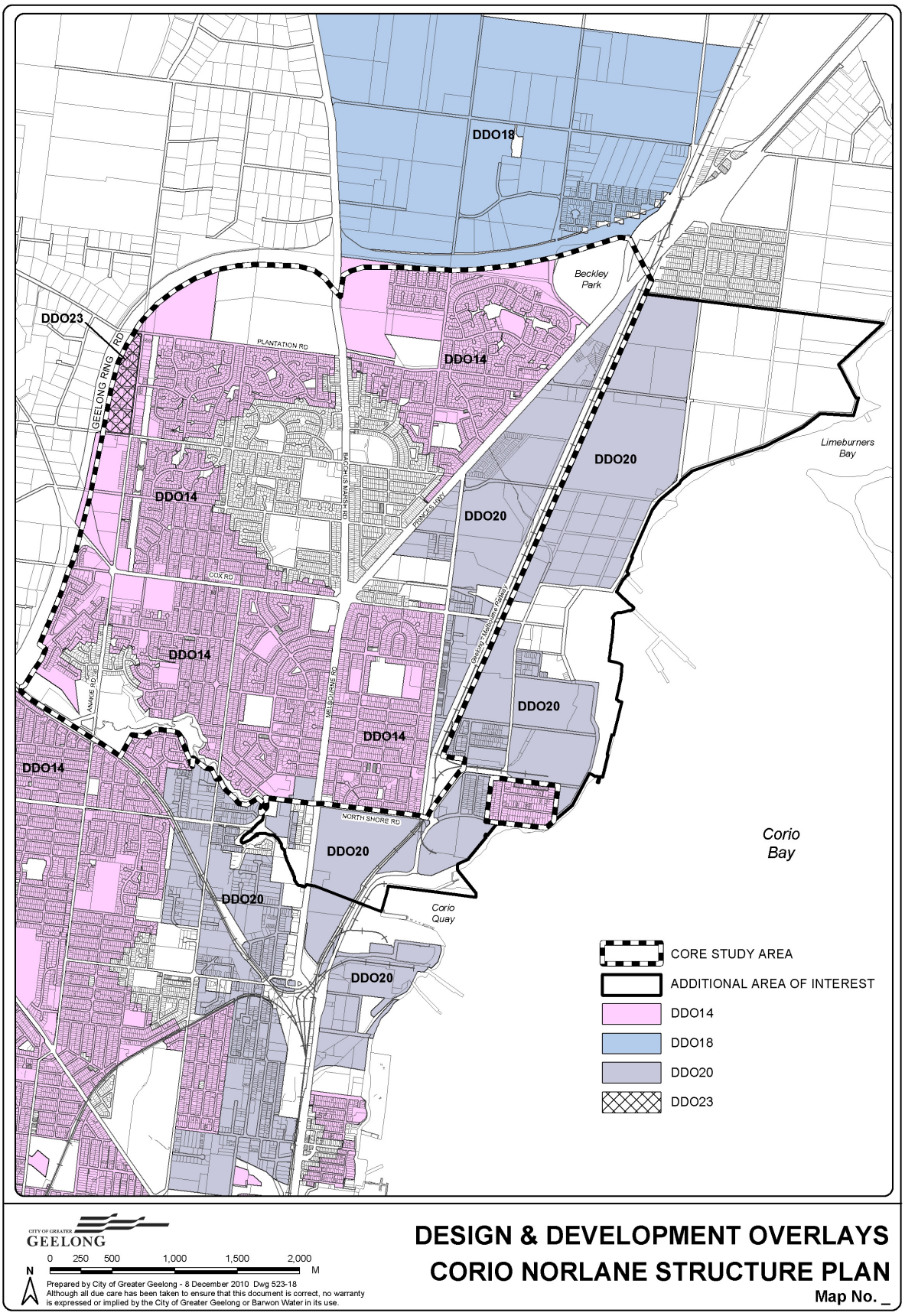
Table 3 - Overlays

Overlays	Description
Schedule 4 to the Environmental Significance Overlay (ESO4) – Grasslands within the Werribee Plains Hinterland (Clause 42.01)	This overlay applies to land at the northern part of the structure plan area, including part of the MC Herd Abattoir site and adjoining council owned Sutcliffe Reserve. The overlay seeks to ensure that any use, development or management of the land is compatible with the long-term conservation, maintenance and enhancement of the grasslands.
Schedule 14 to the Design and Development Overlay (DDO14) – Dwellings Over 7.5 metres	This overlay applies to most residential areas within the City of Greater Geelong. This overlay aims to ensure new dwellings and extensions are compatible with the existing scale and character of adjoining dwellings and aims to ensure that the height and visual bulk of dwellings are acceptable in the neighbourhood setting. A planning permit is required to construct or extend a dwelling over 7.5 metres. This overlay will expire on 30 June 2011 and is currently being reviewed by Council's Strategic Planning Unit
Schedule 20 to the Design and Development Overlay (DDO20) – Industrial 1, 2 and 3 Zones (Clause 43.02)	This overlay applies to all land zoned Industrial 1, 2 and 3 throughout the structure plan area. It seeks to ensure industrial developments are well designed and provide a high level of amenity for workers and visitors to industrial areas.
Schedule 23 to the Design and Development Overlay (DDO23) – Residential Area – Matthews Road, Corio (Clause 43.02)	This overlay applies to Residential 1 zoned land at Matthews Road, Corio between Plantation Road to the north and Purnell Road to the south and the Geelong Ring Road to the west. The overlay seeks to ensure that development is consistent with the low density residential character of the area and responds to the drainage constraints of the area. The overlay places a limit on one dwelling per allotment within a minimum lot size of 1200 square metres.
Public Acquisition Overlay 2 (City of Greater Geelong – Proposed Public Open Space)	This overlay applies to land zoned Residential 1 to the north of the City of Greater Geelong Anakie Road Operations Depot. The land is reserved as open space to accommodate Cowies Creek.
Land Subject to Inundation Overlay (Clause 44.04)	This overlay applies to land identified within the 1 in 100 year flood storage on the northern bank of Cowies Creek.
Special Building Overlay (Clause 44.05)	This overlay applies to land liable to inundation by overland flows from the urban drainage system. The overlay currently applies to a strip of existing allotments in Plantation Road, east of Bacchus Marsh Road, Corio. Amendment C127 proposes to apply the overlay to an extensive area centred around the intersection of Princes Highway and Cox Road identified in recent flood studies.
Public Acquisition Overlay 3 (VicRoads – Proposed Road Category 1) (Clause 45.01)	This overlay identifies land that was acquired by VicRoads for the construction of the Geelong Ring Road. As land as already been acquired and construction of the road has been completed, the overlay is now redundant and should be replaced by the Road Zone.

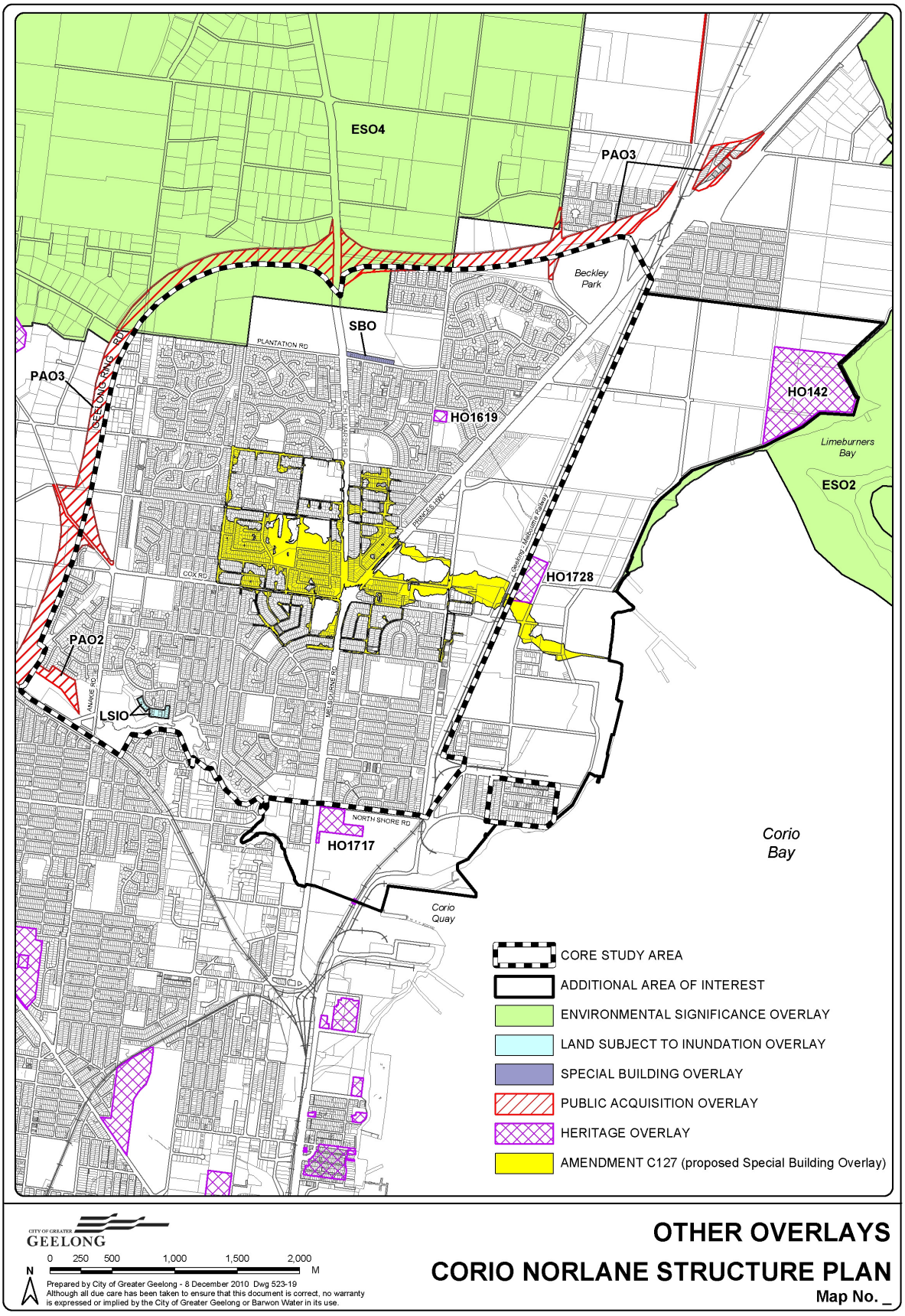
Map 4 - Current Zoning



Map 5 – Design and Development Overlays



Map 6 – Other overlays



2.9 Planning Provisions requiring review

Table 4 summarises planning scheme provisions affecting land in the study area that require review through the structure plan process.

Table 4 – Planning provisions requiring review

Land Planning Provision	Issue
Clause 21.06 Increased Housing Diversity Areas	Review if provision supports the preferred housing density outcome across study area. Clause 21.06 requires structure plans to be prepared for Increased Housing Diversity Areas to inform a more comprehensive set of provisions to realise the policy objectives for these areas.
270-302, 304-308, 310-312 Plantation Road, Corio	Review zone, currently Low Density Residential Zone.
MC Herd Abattoir, 245-255 Bacchus Marsh Road, Corio	Review zone to ensure it best protects the continued operation of abattoir, currently Farming Zone. The primary objective of the review is to support the viability of the business.
Land to the north and east of the City of Greater Geelong Operations Centre, 299 Anakie Road, Lovely Banks	Review zones, currently Farming Zone and Residential 1 Zone.
240 Bacchus Marsh Road & Lot A Nigella Avenue, Corio	Review zone in light of proximity to MC Herd Abattoir, currently Residential 1 Zone.
Land included in Environmental Significance Overlay 4 at north of study area	Review extent of overlay in consultation with DSE.
Design and Development Overlay Schedule 14	Review extent of overlay, scheduled to expire by 30 June 2011.
Design and Development Overlay Schedule 23	Review if overlay is necessary to manage future development density.
Public Acquisition Overlay Schedule 2	Confirm intent of overlay and if it should remain.
Public Acquisition Overlay Schedule 3	Include land developed as Geelong Ring Road in appropriate Road Zone and remove redundant overlay.
38 Hendy Street, Corio Primary School	Currently not mapped on Heritage Overlay maps.
5-19 Princes Highway Norlane	Review zone in light of permission for use and development as Bunnings store, currently zoned Industrial 2.
470-490 Princes Highway, Corio	Review zone in light of development of Geelong Homemaker Centre, currently zoned Industrial 3.
420 Princes Highway, Corio	Review zone in light of existing development (Harvey Norman and others), currently zoned Industrial 1.
4-50 School Road, Corio	Review zone in light of existing development (Bunnings Warehouse), currently zoned Industrial 1.

2.10 Key Influences

Planning policy

- Geelong is a major regional city identified for future growth by a number of key strategies including *Melbourne 2030 – Planning for sustainable growth* and *Ready for Tomorrow – a Blueprint for Regional and Rural Victoria.*
- The *Victorian Integrated Housing Strategy* supports a diverse and affordable supply of housing for all Victorias that is responsive to population growth and demographic change.
- The Greater Geelong *Urban Growth Strategy* provides strong policy for urban consolidation in Corio and Norlane.
- Land surrounding the Corio and Bell Post Shopping Centres is recognised within the Greater Geelong *Housing Diversity Strategy* for more intensive residential development to provide an increased diversity in housing stock. The Greater Geelong Planning Scheme recognises the need to prepare structure plan to guide increased development in these areas.
- There is strong policy support within the State Planning Policy Framework for development of well-connected communities that are provided with sufficient open space where residential densities are proposed to be increased.
- The Geelong Port Structure Plan area overlaps with the Corio Norlane study area. For land common to both plans, the Port Structure Plan requires that land forming part of the Shell refinery (west of the rail line) is maintained as a landscaped buffer area having regard to the sensitive residential land uses west of the Princes Highway and the role of the highway as the main gateway to Geelong.
- Parts of the structure plan area are contained within the Northern Gateway identified in Geelong's Economic Development Blueprint. Proposed neighbourhood renewal, public housing and schools regeneration are key development opportunities within those parts of the study area within the Northern Gateway precinct.
- The Greater Geelong Retail Strategy includes a clearly defined hierarchy for retailing across Greater Geelong. Any growth in the retail sector in Corio and Norlane would need to be consistent with this hierarchy. Corio Shopping Centre is designated as one of three sub-regional centres across Greater Geelong.
- The *Community Infrastructure Analysis for Corio and Norlane* sets out Council's priorities for community services infrastructure in the study area.
- There are gaps in the open space and cycle network across Corio and Norlane according to Council's *Study of Open Space Networks* and *Cycle Strategy.*

3.0 Demographic and Social Profile

3.1 About the demographic data

The following section is based on data contained in the Department of Planning and Community Development's (DPCD's) *Suburbs in Time* (2006) analysis of the Australian Bureau of Statistics (ABS) census data.

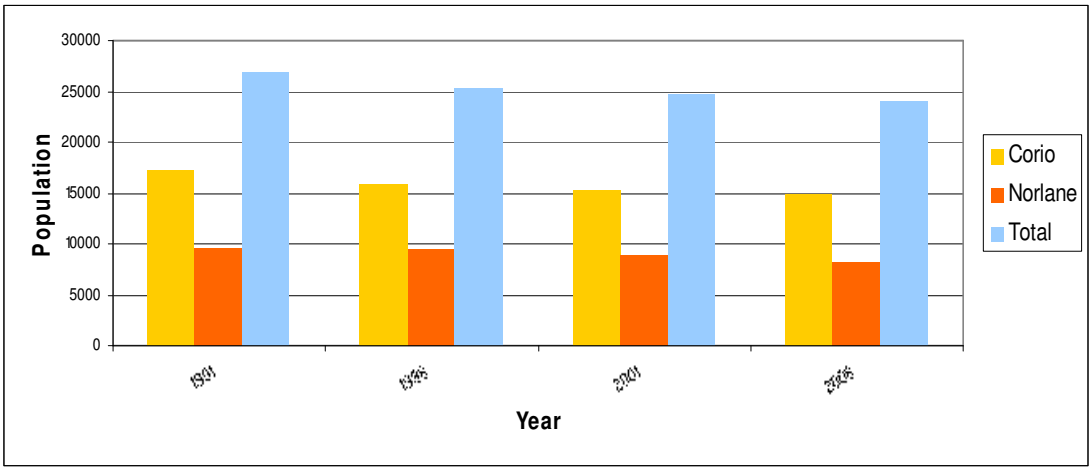
Suburbs in Time is only available for Corio and Norlane areas (including North Shore). It is not available for that part of Lovely Banks included in the Structure Plan area.

Suburbs in Time is based on the ABS's enumerated count, which includes the number of people counted in a particular area on Census night, including visitors.

3.2 Past Population Growth

From 1991 to 2006, the population of Corio and Norlane combined declined from 26,929 persons to 23,072 persons.

Figure 1 – Past Population Growth

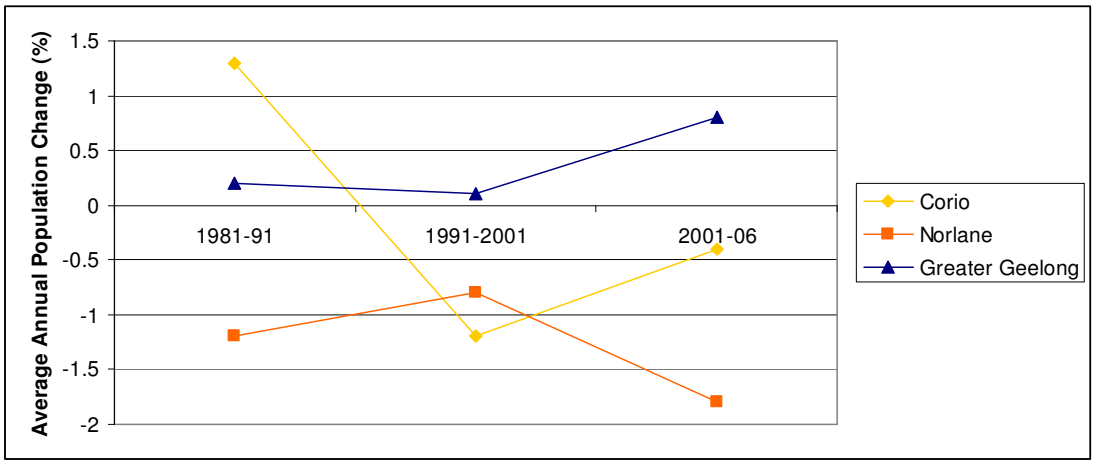


Source: Suburbs in Time, DPCD, 2006

This population loss evident in Corio and Norlane contrasts with the growth trend experienced across Greater Geelong. From 2001-06, the average annual population change in Corio and Norlane was -1.1% compared with the +0.8% change experienced across Greater Geelong.

Over the 2001-06 period, the annual population loss was highest in Norlane, where the population change was -1.8% compared with -0.4% in Corio.

Figure 2 – Average Annual Population Change



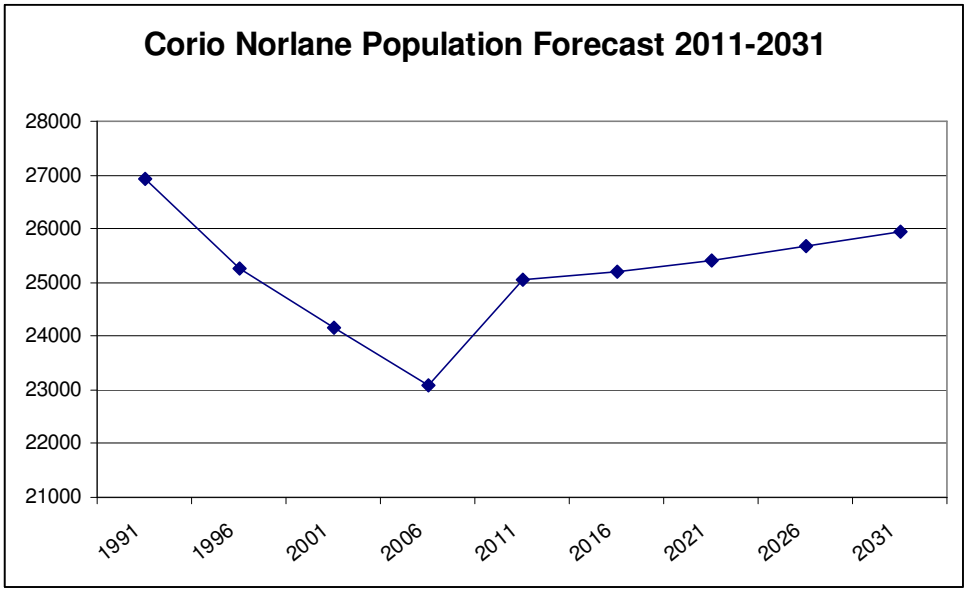
Source: Suburbs in Time, DPCD, 2006

3.3 Projected future population

Population forecasts prepared for the City of Greater Geelong by ID Consultants suggest that population will marginally rise across the Corio and Norlane area over the next twenty years (25,023 to 25,959; +0.2 annually). However, despite the projected increase, the population is not expected to attain population numbers that existed in 1991 (26, 929 persons).

Population growth forecast for Corio and Norlane is within a context of strong growth projected for the City of Greater Geelong which is projected to grow by 64,000 people between 2006 and 2026.

Figure 3 – Forecast Population



Source: Suburbs in Time, DPCD, 2006 & ID Consultants for COGG, 2010

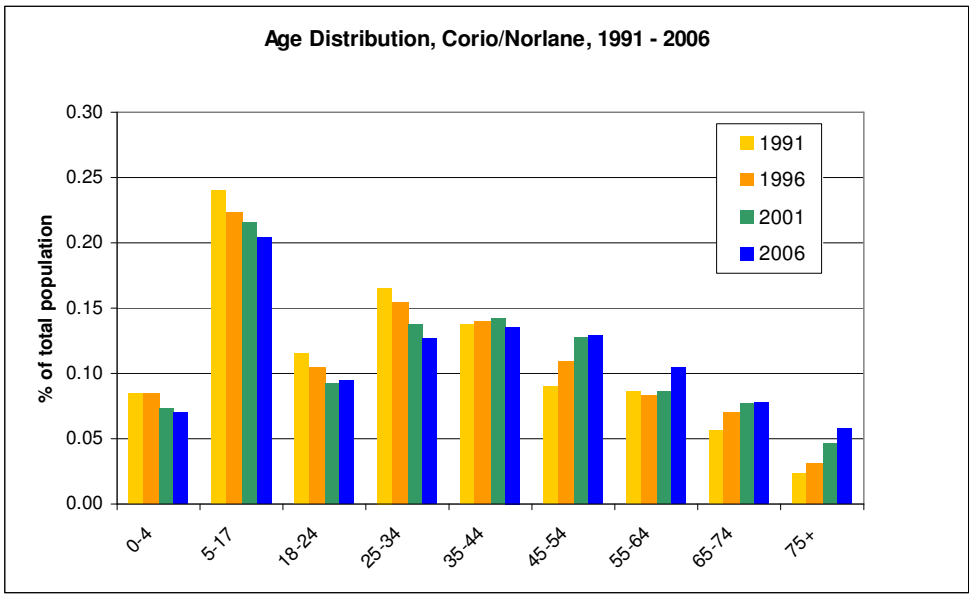
3.4 Age Structure

Suburbs in Time shows that Corio and Norlane combined have an increasingly ageing population profile like most parts of Australia, with the number of persons aged over 65

accounting for 18% of the total population in 2006 in comparison to 15% of the population in 1991.

The proportion of school aged persons (5 to 17 years) has decreased across Corio and Norlane from 1991 (24%) to 2006 (20%), as has the number of young adults aged between 18 and 24 years (12% in 1991 falling to 9% in 2006).

Figure 4 – Age Distribution



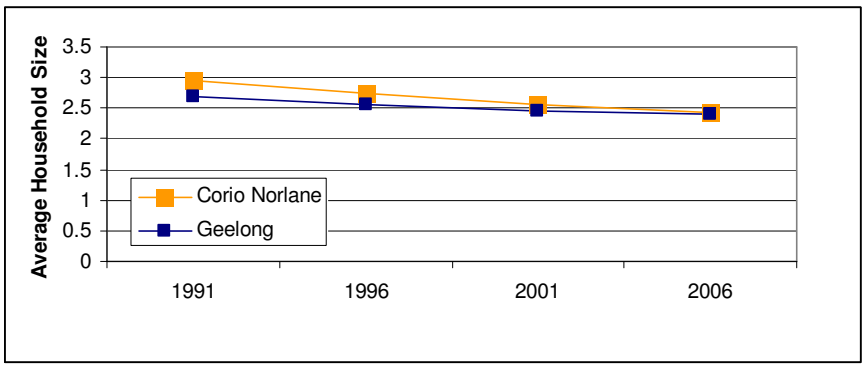
Source: Suburbs in Time, DPCD, 2006

3.5 Dwellings and Household Size

Suburbs in Time shows that Corio and Norlane had a total of 9842 households in 2006 compared with 9220 households in 1991. The overall number of households increased despite the population decline because of the fall in household size experienced across the area. In 1991, household size in Corio and Norlane averaged 2.9 persons per household which fell to 2.4 persons per household by 1996.

The fall in household size in Corio and Norlane follows a similar trend experienced across Greater Geelong over the same period. In 2006, both Corio and Norlane had the same average household size of 2.4 persons per household. This is reflective of a general trend in Victoria where an increase in lone person households and couples without children households has reduced the average household size.

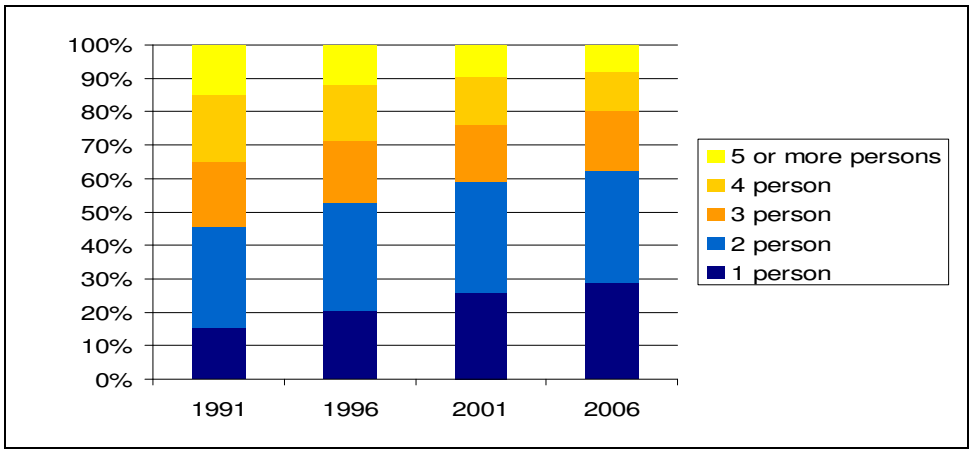
Figure 5 – Average Household size 1991–2006



Source: Suburbs in Time, DPCD, 2006

The increase in lone person households and decrease of households with 4 or more people has contributed to the overall fall in household size across Corio in Norlane. The proportion of single person households almost doubled from 1991 (15.5%) to 2006 (29%), whilst the proportion of households with 4 or more people fell from 35% in 1991 to 20% in 2006. The number of households with 2 and 3 people remained relatively stable over this time period.

Figure 6 – Household Composition, Corio and Norlane 1991 – 2006



Source: Suburbs in Time, DPCD, 2006

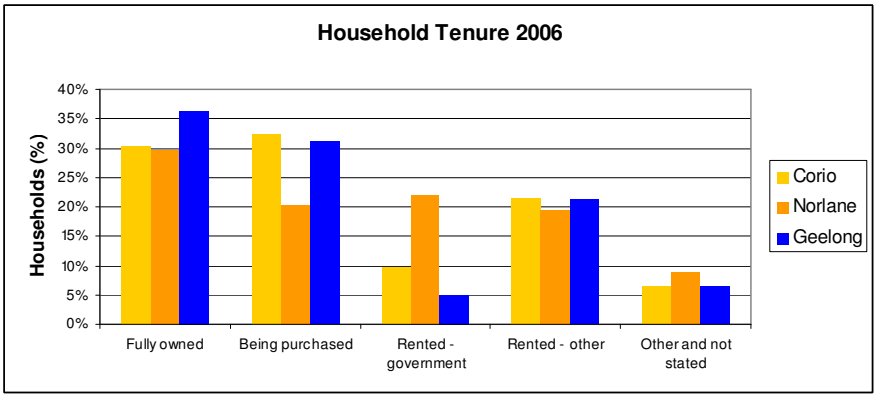
Dwelling occupancy has remained relatively stable across Corio and Norlane from 1991 to 2006. *Suburbs in Time* shows that in 2006, occupied private dwellings accounted for 94% of housing stock in Corio and 92% of housing stock in Norlane. The occupancy of private dwellings across the Greater Geelong area was also 92% in 2006.

Data for household tenure in 2006 shows the greatest proportion of households in Corio either fully own (30%) or are purchasing homes (32%). 10% of Corio households rented government housing stock and 22% rented other housing stock.

In Norlane, whilst fully owned homes was the predominant housing tenure, a lesser proportion of households were purchasing dwellings (20%) and a greater proportion of household were renting government housing stock (22%).

Overall, the proportion of government rented housing stock was greater across Corio and Norlane than in comparison to Greater Geelong where this accounts for only 5% of housing tenure.

Figure 7 – Household Tenure



Source: Suburbs in Time, DPCD, 2006

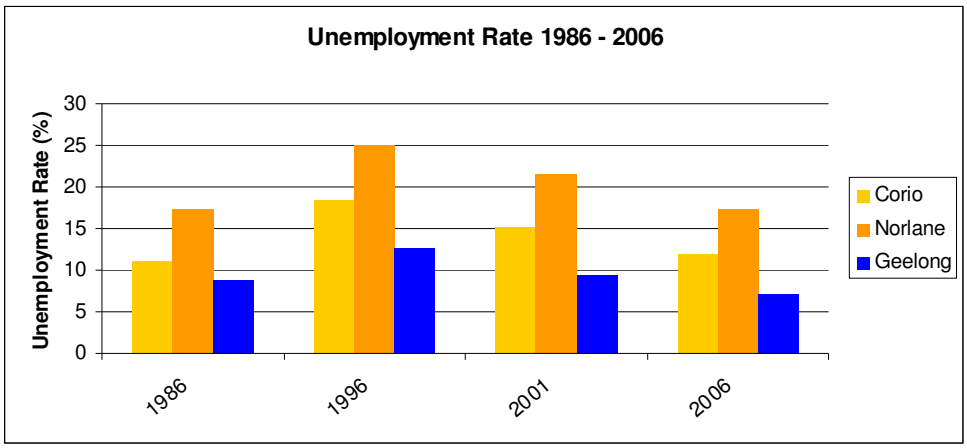
3.6 Labour Force

Suburbs in Time defines "labour force" as persons aged 15 years and over who are employed, or unemployed and actively looking for work. Theoretically, persons not in the labour force include older people that have retired from the workforce.

Corio and Norlane have had a higher unemployment rate in comparison to Greater Geelong, with Norlane having a higher unemployment rate in comparison to Corio.

2006 figures show Corio's unemployment rate at 11.9% and Norlane's unemployment rate at 17.3%. This is significantly higher than Greater Geelong's unemployment rate in 2006 at 7.1%.

Figure 8 - Unemployment Rate

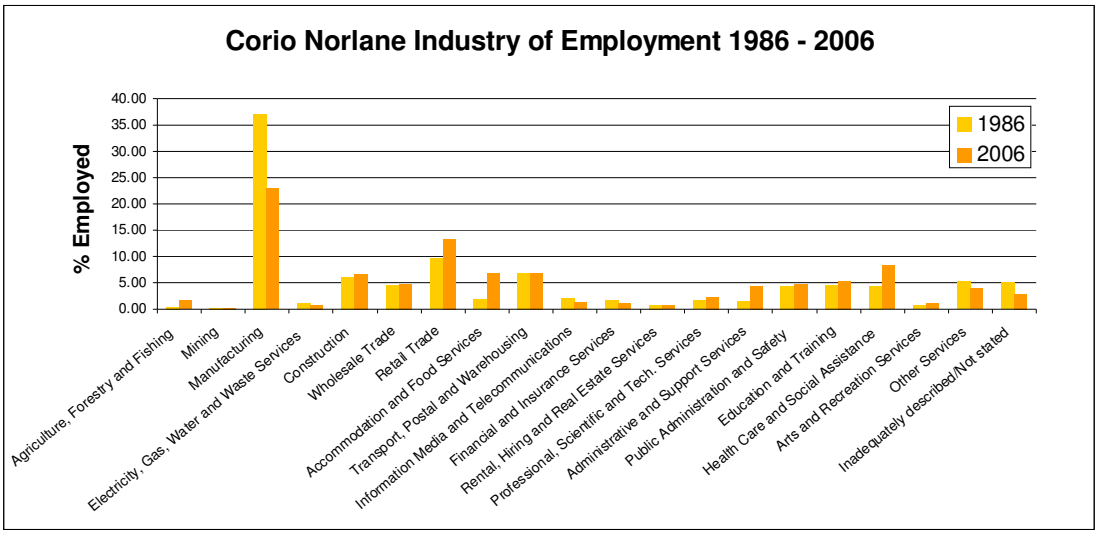


Source: Suburbs in Time, DPCD, 2006

Across Corio and Norlane, participants in the workforce in 2006 were predominantly employed in the manufacturing sector, although the proportion of participants in this sector fall from 37% to 23% from 1986 to 2006. In 2006, after manufacturing, the next highest workforce participation areas were retail trade (13%) followed by health care and social assistance (8%). Participation in these areas both increased from 1986.

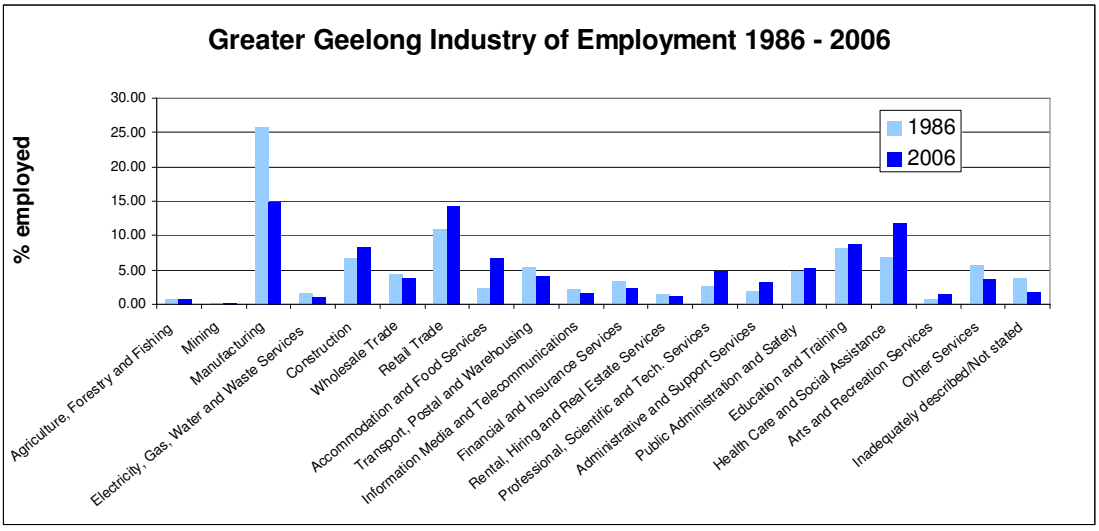
The decline in manufacturing employment follows a similar trend to that experienced across the Greater Geelong area where participation in this sector fell from 26% in 1986 to 15% in 2006. However unlike Corio and Norlane, in 1986 Greater Geelong had broader participation in a number of workforce areas including retail trade (14%), heath and social assistance (12%), education and training (9%) and accommodation and food services (7%).

Figure 9 – Corio and Norlane Industry of Employment



Source: Suburbs in Time, DPCD, 2006

Figure 10 – Greater Geelong Industry of Employment



Source: Suburbs in Time, DPCD, 2006

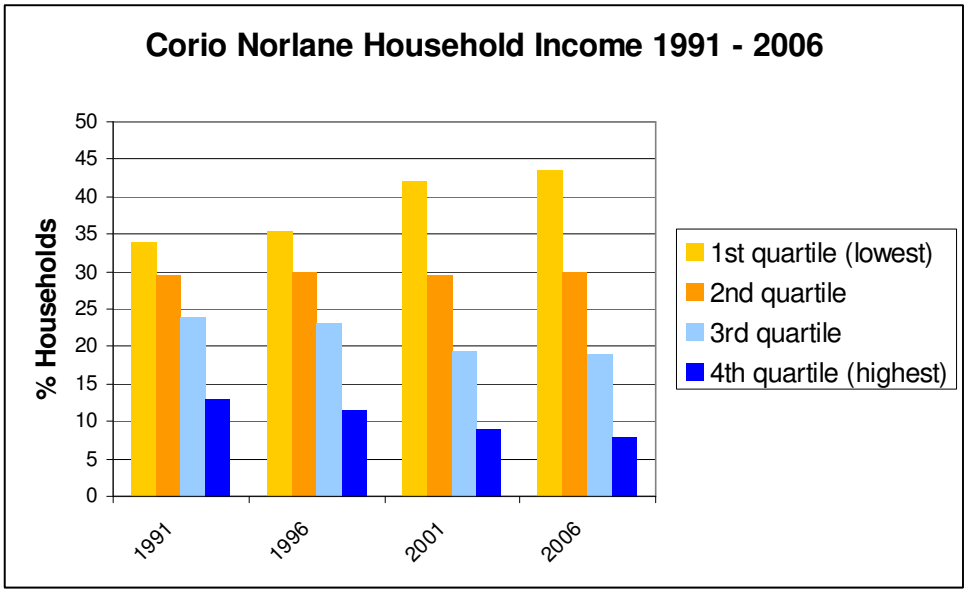
3.7 Income

Across Corio and Norlane, the proportion of households represented in the lowest quartile of income has increased from 34% in 1991 to 43% in 2006. Conversely, the proportion of households in the highest income quartile decreased from 13% in 1986 to 8% in 2006.

The trend evident in Corio and Norlane is not replicated across the Greater Geelong area for the same period where the proportion of households in each income quartiles remained relatively constant from 1991 to 2006. In comparison to Corio and Norlane in 2006, almost 12% less households across Greater Geelong were in the lowest income quartile (31% overall) and 10% more households were in the highest income quartile (18% overall).

Household income is a significant indicator of economic disadvantage in Corio and Norlane as compared to Greater Geelong.

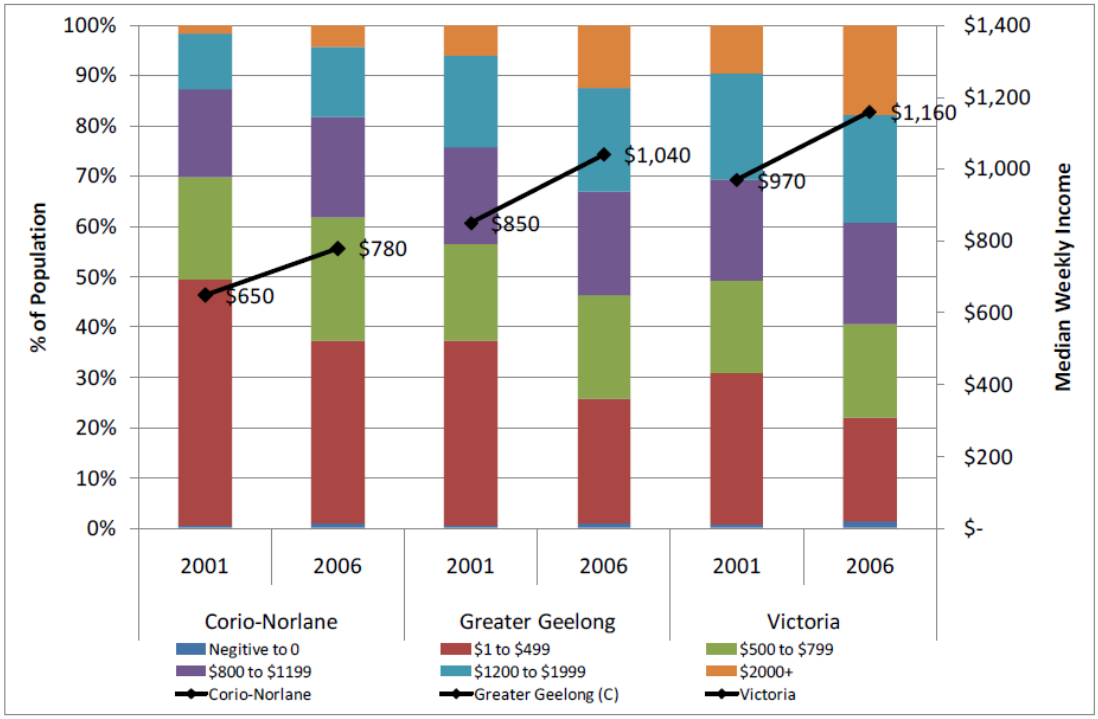
Figure 11 – Household Income



Source: Suburbs in Time, DPCD, 2006

The low income profile of Corio and Norlane's residents is further demonstrated in the household weekly income assessment prepared by SGS Economics and Planning in the report *Corio Norlane Urban Renewal Project - Employment and Economic Development Strategy*. This report found that in 2006, Corio Norlane's median household weekly income was $780, which was 25% less than the municipal average and 33% less than the State average.

Figure 12 - Household Weekly Income, 2001 and 2006



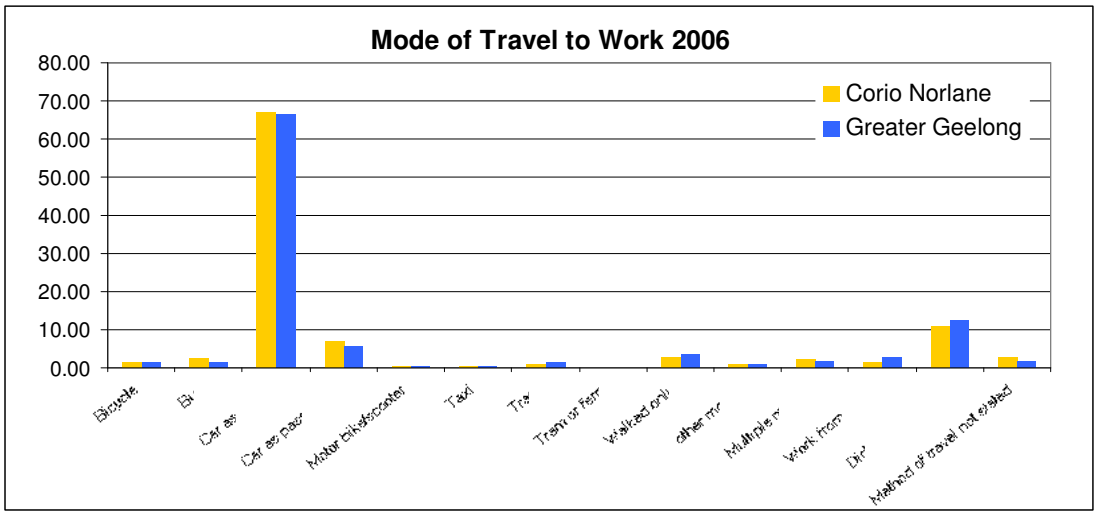
Source: ABS 2001 and 2006 Census – Place of Usual Residence.

Source: Corio Norlane Urban Renewal Project - Employment and Economic Development Strategy, SGS Economics and Planning,2009

3.8 Journey to work

Suburbs in Time shows that private car is the dominant mode of transport for Corio and Norlane residents travelling to work. This modes accounts for 66% of workers travelling to work, which is equal to the proportion of private car use across Greater Geelong. Only 2.8% of people in Corio Norlane walk to work as a single mode of transport which is marginally less than Greater Geelong at 3.5%.

Figure 13 – Mode of Travel to Work

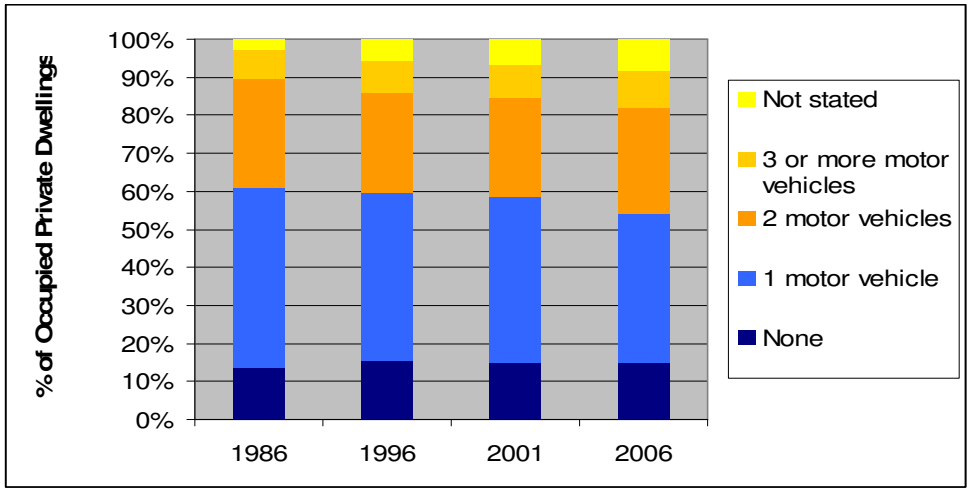


Source: Suburbs in Time, DPCD, 2006

3.9 Car Ownership

In 2006 almost 15% of occupied private dwellings in Corio and Norlane did not have a vehicle which is almost 5% higher than the number of occupied private dwellings across Greater Geelong without a vehicle (9.8%).

Figure 14 – Vehicle Ownership, Corio and Norlane, 1986 – 2006



Source: Suburbs in Time, DPCD, 2006

3.10 Key Influences - Demographics

The key demographic trends that will influence land use and development in Corio and Norlane over the coming years are:

- Corio and Norlane have experienced modest population decline over the last 20 years. Without future intervention, marginal population growth is predicted to occur.
- There is an increasing proportion of lone person households and decreasing proportion of households with 4 or more people in Corio and Norlane. This has contributed to an overall decrease in average household size in the area.
- Despite falling population numbers, the decrease in average household size has contributed to an overall increase in the number of dwellings across Corio and Norlane.
- With the predicted population increase, demand for new households is expected to continue in the area.
- Private dwelling ownership dominates housing tenure across Corio and Norlane, although there is also a high proportion of rented government dwellings in the area particularly in Norlane.
- Household incomes in Corio and Norlane are decreasing while remaining relatively constant across Greater Geelong.
- Corio and Norlane have an ageing population with a growing proportion of people aged over 65 years.
- Both Corio and Norlane have significantly higher proportions of unemployed people compared to the Greater Geelong area. Whilst manufacturing has historically dominated workforce representation, employment is spreading into new labour force areas such as retail trade and health care.
- The median weekly household income in Corio and Norlane is significantly less than the Greater Geelong and Victorian average.
- Private car is the dominant mode of transport to work for residents in Corio and Norlane.
- There are more households without a car in Corio and Norlane compared with households without a car in Greater Geelong.

4.0 Physical Infrastructure

4.1 Water Supply

Barwon Water is the authority for the region and provided the following comments:

The plan provided indicates the Corio Norlane Structure Plan Core Study Area is basically the area inside the Geelong Ring Road boundary to the west and north, the Melbourne Geelong Railway line in the east and North Shore Road/Cowies Creek in the south. A small additional area of interest is identified to the south of North Shore Road including Midway, Fords and the small industrial/commercial area north of Cowies Creek.

Both these areas are serviced with water by gravity from the Lovely Banks Service Basins in Anakie Road Lovely Banks. A small amount of new development is occurring inside the boundary of the Ring Road. The water supply system has adequate capacity to service the existing and future customers in this area. No major new mains are anticipated to be required for the area but some of the older mains may need to be replaced as time goes on.

The Northern Water Plant is being constructed adjacent to the Shell Geelong Refinery and is initially sized to supply recycled water to Shell and for watering of sports grounds at Stead Park. This will significantly reduce the amount of potable water required by the area and will enable some capacity to be freed up in trunk sewerage infrastructure servicing the area.

4.2 Sewer

Barwon Water is the authority for the region and provided the following comments:

Part of the Corio Norlane Structure Plan study area is serviced by gravity sewers draining to the Black Rock Water Reclamation Plant. Other areas are serviced by sewers gravitating to major sewage pumping stations at Maryland Drive, Corio (Corio West sewage pumping station) and Greta Street, North Shore (Oyster Cove sewage pumping station).

Barwon Water's Geelong Sewerage Strategy includes servicing of areas covered in the Corio Norlane Structure Plan study area. Key components of this strategy include:

- *Development of the Northern Water Plant to supply recycled water to Shell's Geelong Refinery and Stead Park. This will reduce flows in the core trunk sewers in this area.*
- *Expand the sewage flow balancing tank (Northern Flow Retarding facility in stages) to enable more efficient use of available capacity in downstream trunk sewers.*

4.3 Stormwater Drainage

4.3.1 Drainage Catchments

The study area is divided into Drainage Catchments C153, C155 and C156. Catchment No. C153 drains to Cowies Creek, Catchment No. C155 drains to Cuthbertson Creek and Catchment No. C156 drains to an unnamed waterway. All waterways discharge to Corio Bay. The catchments and other drainage features are shown in **Map 7**. There are also substantial retarding basins located at the City of Greater Geelong Anakie Road Operations Centre and at Flinders Peak Reserve directly north of Plantation Road.

Drainage is primarily underground, with the stormwater runoff released to Corio Bay via a network of open channels, stormwater pipes and pumps. City of Greater Geelong

Engineering Services Unit generally considers the infrastructure to be in adequate to poor condition and upgrading will be required as the area is redeveloped. There is a need to identify under-performing or out-dated assets for future works, such as in North Shore. Poor water quality entering Corio Bay has been identified by the CSIRO Port Phillip Bay & Geelong Healthy Waterways Program, particularly runoff from businesses along Station Street, North Shore. Runoff from Corio Shopping Centre, including hard rubbish, is not adequately treated at source and a further significant contributor to poor water quality discharge.

There are opportunities to improve water quality entering Corio Bay in conjunction with creating better east-west pedestrian and cycle linkages from the study area, particularly along Cowies Creek and Cuthbertson Creek (eg. Cowies Creek Rehabilitation Plan at Seagull Paddock and improvement to Stead Park). Such linkages also allow for improved green spaces and biodiversity to an area devoid of natural features.

4.3.2 Stormwater Management Plan

The City of Greater Geelong *Stormwater Management Plan* 2003 (SWMP) was commissioned to guide the City in improving the environmental management of stormwater throughout the municipality. It provides a basis for the City to manage stormwater using best practice and protect the community's enjoyment of the region's natural and man made waterways. It provides a framework for integrating stormwater management as part of its existing management and planning activities and as such is intended to provide an ongoing process aimed at protecting and enhancing receiving environmental values and beneficial uses that are currently threatened by stormwater runoff.

One of the key stormwater threats is industrial land runoff; this was noted as a very high stormwater threat in the North Geelong catchment. Runoff from industrial areas generate an array of stormwater pollutants ranging from elevated sediment loads to hydrocarbons that can originate from poor waste management practices (eg tipping oil into the stormwater system). The North Geelong catchment is also subject to the threat of substantial sediment, litter, and hydrocarbon loads generated on major road and transport corridors such as the Princes Highway. These are classified as moderate to high threats.

The demand pressures on the water supply in Geelong are detailed in the Plan and opportunities for stormwater reuse are investigated. Of relevance to the Port of Geelong is the opportunity for the reuse of stormwater in industrial processes. Options include the collection of roof water to be stored in wetlands or urban lakes and then used by industries which can use non-potable water but which presently use large amounts of potable reticulated water. The structural treatment recommended includes two gross pollutant traps at Cowies Creek and one at Moorpanyal Park. One of the Cowies Creek traps has been installed as well as the one at Moorpanyal Park – both are fully operational and removing litter from the local catchment.

The non-structural program for the North Geelong sub catchment focuses mainly on industry awareness of the stormwater issue in combination with site specific environmental management plans, audits and inspections and enforcement infringement measures (in conjunction with the EPA) if required.

4.3.3 Special Building Overlay (Amendment C127)

Council is in the process of implementing into the Greater Geelong Planning Scheme a number of adopted flood / drainage studies undertaken over the past 10 years to identify the nature and extent of flooding in a number of catchments within the City. One of the studies is of the St Georges Road Main Drainage Catchment Augmentation (C155), which affects residential and industrial parts of Corio and Norlane.

Known as Planning Scheme Amendment C127, the Amendment proposes to apply a Special Building Overlay (SBO) to land in the St Georges Road Main Drainage Catchment. The SBO identifies land that may be subject to flooding when heavy rains cause the capacity of the underground drainage system to be exceeded and overflow.

Application of the SBO will ensure that flooding and drainage issues and the potential affects of new development are considered and addressed at an early stage in the development approvals process. The application of the SBO means that a planning permit is required for most new buildings and works (including some fences) in the area covered by the SBO. Circumstances where a planning permit is not required are specified in the Overlay.

4.3.4 Kosciusko Avenue Main Drain Catchment Drainage/Flood Study

Council has prepared a draft report of the Kosciusko Avenue Main Drain Catchment Drainage/Flood Study which identifies flood mitigation options for drainage related or 'stormwater' flooding within the Kosciusko Avenue Main Drain catchment (C156). A final report of the Study is expected to be put to Council for adoption in mid 2011.

This catchment has some of the most serious and frequent stormwater drainage related flooding in the municipality, including affected residential properties on and around Kosciusko Avenue, Hendy Street and Plantation Road. The Study analysed flood behavior and produced flood mapping that needs to be incorporated into the City's floodprone areas information system in accordance with statutory obligations under the Victorian Building Regulations 2006.

A planning scheme amendment (similar to Amendment C127 discussed above) to create flood zones or overlays will follow the designation of flood mapping by Council.

4.3.5 Other drainage considerations

The City of Greater Geelong Engineering Services Unit has identified a number of drainage issues to be considered in any development or redevelopment. These include:

- The existing underground drainage is often remote from the particular sites and opportunities to connect are limited or require significant runs to link up.
- The capacity of the existing pipe network is considered to be well below current design standards.
- No assumptions that building over easements will be automatically approved either just because it has no assets within or there is a small diameter pipe in place.
- Where pipes exist, many of the pipe and pit assets are aged and likely to require replacement before new development should be approved.
- Building 'boundary to boundary' would not be supported where overland flow can be identified as likely (more related to SBO areas where inundation mapping has been carried out).
- Attention should be drawn to the need to adhere to minimum freeboard to natural surface where no minimum floor level is referenced. Setting of floor levels should not be left to ad hoc site decisions by contractors for excavation and slab levels. Relative site levels and floor levels would be an advantage if shown on building plans or planning applications plans.

4.4 Electricity and Gas

SP AusNet is the service provider of electricity to Geelong, carrying electricity via high voltage towers and transmission lines along a 50 metre wide easement (zoned Public

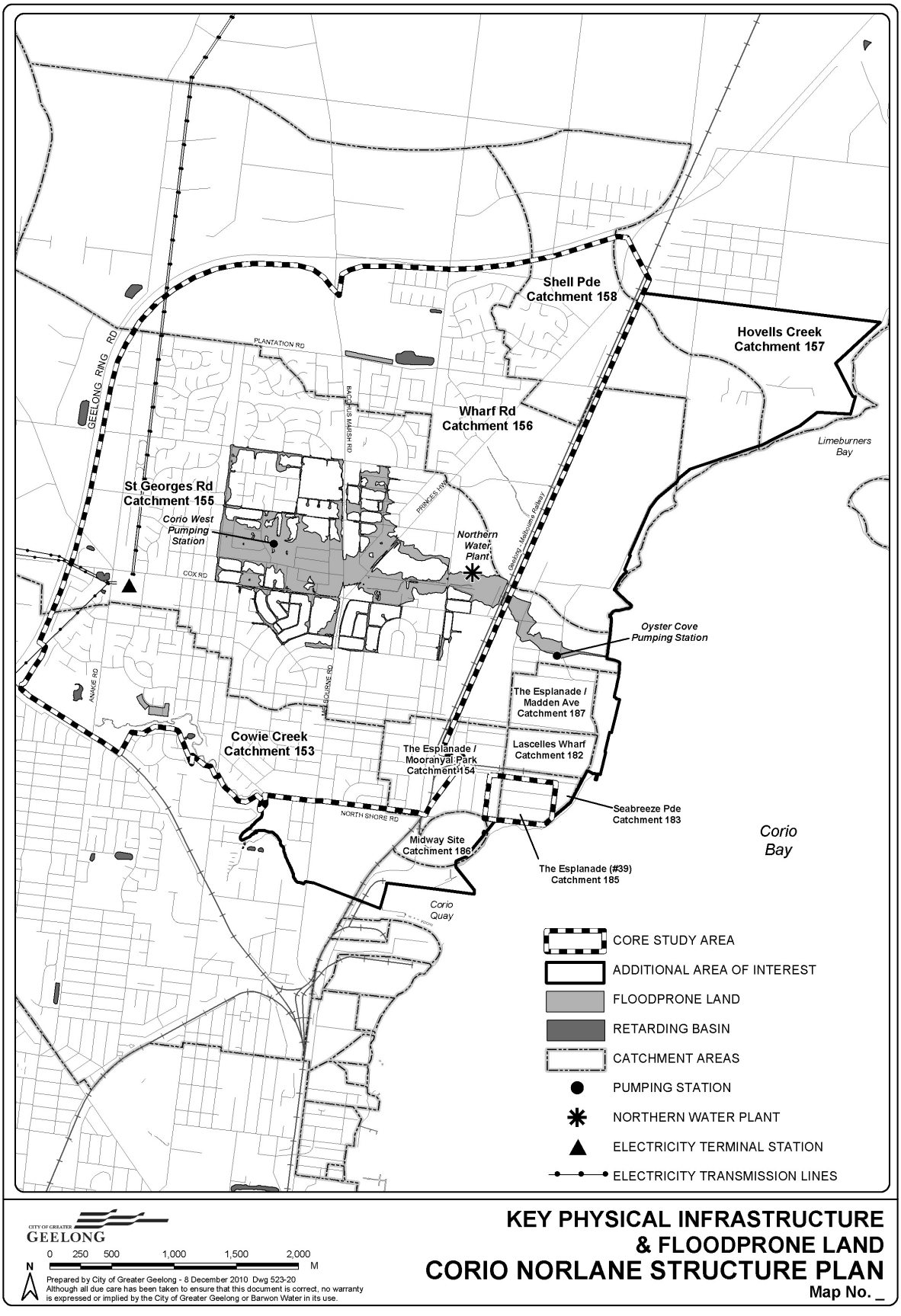
Park and Recreation Zone – PPRZ) parallel to Matthews Road, terminating at the Geelong Regional Terminal Station. The Station is located within the study area at 169-199 Cox Road, Norlane, abutting Norlane High School. This 4.64 hectare site is owned by SP Ausnet and a significant piece of infrastructure of the Geelong region. SP AusNet has not identified any supply constraints to Corio Norlane.

From the Station, electricity is distributed to customers by Powercor Australia. Powercor has recently upgraded the Corio Village substation and propose future works to assets on Cox Road. New substations are planed for the Geelong Ring Road Employment Precinct and industrial land east of the railway line in North Shore. Powercor has not identified any supply constraints and can service new residential estates and redeveloped areas.

The study area is connected to the SP AusNet gas distribution network and advice indicates that there are no identified supply constraints. Connections to larger commercial and industrial operations would be addressed on a case-by-case basis.

Key physical infrastructure and flood prone land is shown on **Map 7.**

Map 7 – Key Physical Infrastructure & Flood Prone Land



4.5 Key Influences – Physical Infrastructure

- There is sufficient capacity in the water, sewer, gas and electricity supply networks to service existing and new customers across Corio and Norlane.
- Stormwater drainage infrastructure is in reasonable to poor condition and upgrading will be required as the area is further developed. Land in the St Georges Road Main Drainage Catchment may be subject to flooding when heavy rains cause the capacity of the underground drainage system to be exceeded and overflow.
- The draft Kosciusko Main Drain Catchment Drainage/Flood Study finds that there is stormwater drainage related flooding to residential properties on and around Kosciusko Avenue, Hendy Street and Plantation Road.
- The nature of the flat terrain in the study area coupled with the inadequacy of the underground piped drainage system suggests caution should be exercised when determining finished floor levels on any development.
- Poor stormwater quality entering Corio Bay is considered to be a serious problem for the area. This could be improved:
    - in conjunction with creating better east-west pedestrian and cycle linkages from the study area, particularly along Cowies Creek and Cuthbertson Creek; and
    - by working with businesses along Station Street, North Shore and Corio Shopping Centre to reduce polluted run-off and litter through best practice stormwater management.

5.0 Built Form

5.1 Residential Character

5.1.1 Residential Character Brochures

Residential character is described in the *City of Greater Geelong Residential Character Study: Character Precinct Brochures* (Planisphere for City of Greater Geelong, September 2001). The aim of the Residential Character Study is to ensure that residential development respects and enhances the preferred future character of the City.

The study analyses the diverse range of character types found in the municipality; from garden suburbs to inner city urban areas to the coastal townships of the Bellarine Peninsula. Taking into account a variety of matters, in particular community views, a statement of preferred future character has been developed for each area. The preferred character is expressed through guidelines and policies for each precinct in the city, which is intended to inform design and assess new residential development in the precinct.

The precincts have been defined mainly on the basis of the distinctive relationship between the dwellings and the landscape, as well as other factors such as era and style of development. The precincts identified in the Northern Region of Geelong are shown in **Map 8** and include Corio Precincts 1, 2 and 3 Norlane Precincts 1 and 2 and the North Shore Precinct. **Table 5** describes the main characteristics and preferred character outcomes for new development in the precincts.

In summary, residential built form across the structure plan area is characterised by low scale dwellings that are predominantly single storey in scale. Buildings date from 1950 onwards and have been constructed with brick or timber and in some instances with fibro. Gardens and fencing are of a low level and side and front setback are at least moderate to generous.

These characteristics all contribute to the open streetscapes observed across the structure plan area which is the preferred characteristics to be maintained by new development according to existing planning policy.

It is timely to review the Corio and Norlane Character Precinct Brochures, in consultation with local communities, to consider emerging planning policy and determine whether other policy tools are more appropriate to manage built form across the study area. This would be consistent with Clause 21.06-6 of the Greater Geelong Planning Scheme which lists the review of the City's *Residential Character Study* as a 'further work' action.

Map 8 – Residential Character and Increased Housing Diversity Areas

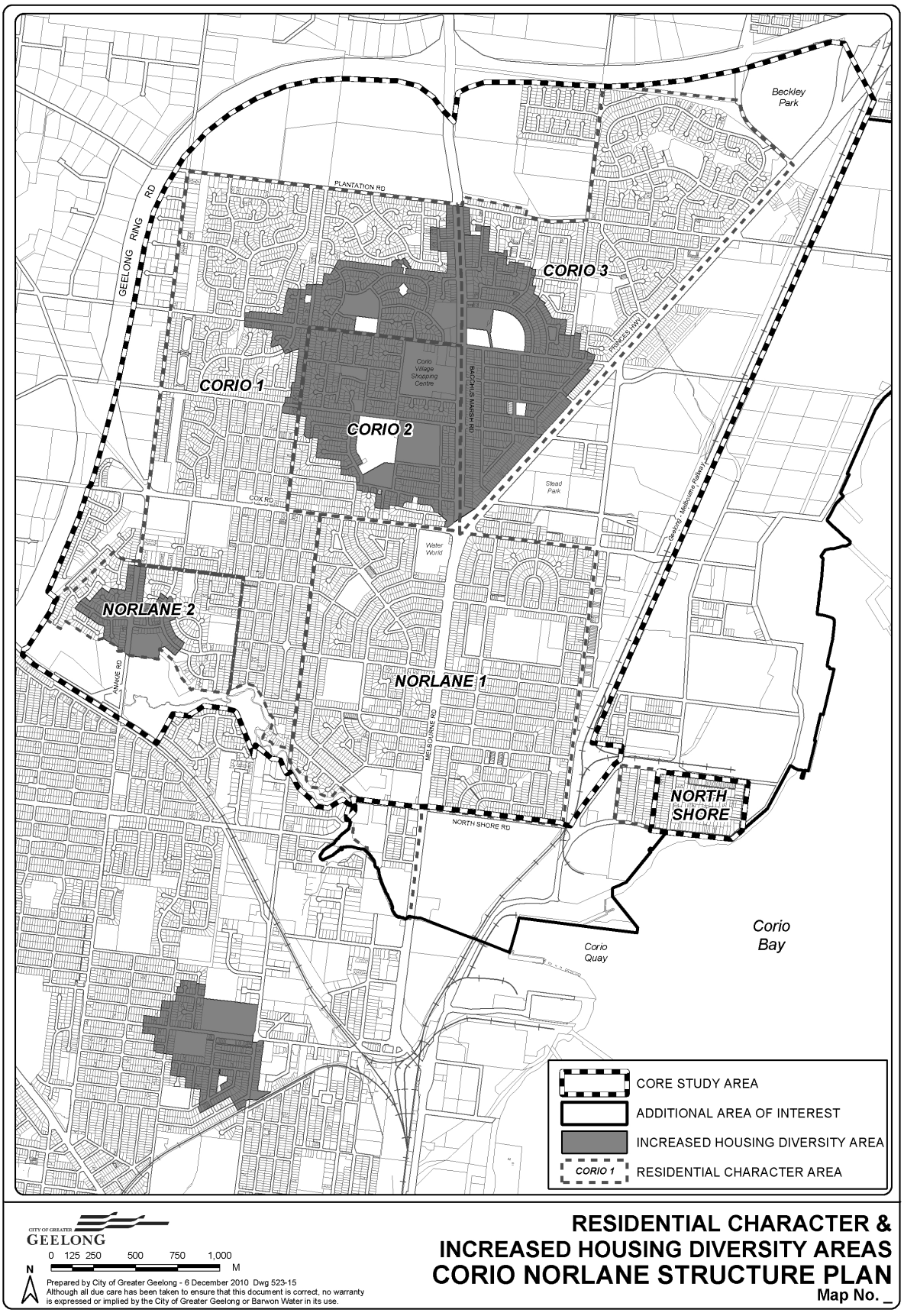


Table 5 – Overview of Corio and Norlane Residential Character Precincts

<table>
<tr><td colspan="2">Corio Precinct 1
Corio Precinct 1 is characterised by low scale dwellings set within generous sized, low level gardens. The architectural styles date predominantly from the 1960s to the 1970s, and are low scale with low pitched dominant roof forms. Building materials and setback sizes remain relatively constant providing the precinct with a degree of visual continuity.</td></tr>
<tr><td>Key Existing Characteristics
Architecture is predominantly 60s – 80s in style.
Single storey dwellings dominate, and there are small areas where double storeys are frequent.
Gardens are predominantly low-level with pockets of established vegetation.
Front and side setbacks are moderate to generous in size.
Building materials are predominantly brick with tiled roofs.
Front fences are predominantly mixed in height and style, however some areas have no front fences.</td><td>Preferred Character
The open feel of the streetscape and the spaciousness of the dwelling settings will be maintained and enhanced by:
• Encouraging dwellings that respect the low scale buildings of the area;
• Ensuring dwellings are set back from the front in accordance with the predominant setback in the street, and are preferably off-set from both side boundaries.
• Encouraging low or open style front fencing.</td></tr>
<tr><td colspan="2">Corio Precinct 2
The streetscapes in Corio Precinct 2 have an openness created by the low scale dwellings, with dominant low pitched roof forms, with low front fencing. The presence of timber and fibro dwellings creates a lightness to the streetscape and setbacks are usually regular, giving the area a cohesive quality.</td></tr>
<tr><td>Key Existing Characteristics
Architecture is predominantly 50s – 60s with small pockets of 60s – 70s.
Most dwellings are single storey.
Gardens consist entirely of low-level vegetation.
Front and side setbacks are moderate in size.
Building materials are often brick, but frequently include timber and fibro dwellings.
Low, mixed style fencing predominates throughout.</td><td>Preferred Character
The openness of the streetscapes will be maintained and strengthened by:
• Ensuring dwellings are set back from the front in accordance with the predominant setback in the street, and are off-set from at least one side boundary.
• Encouraging the use of lighter looking building materials, including timber and other non-masonry cladding.
• Encouraging buildings that respect the low scale of the area.
• Encouraging low front fencing.</td></tr>
<tr><td colspan="2">Corio Precinct 3
Corio Precinct 3 has a distinctive character due to the common, low scale building styles, sometimes including repeated plan forms, set within open streetscapes. The dwellings are regularly spaced, with front setbacks consistent in many streets, and although gardens are not developed, space exists around most dwellings for substantial planting if desired. The open and low fencing styles and the frequent use of lighter building materials are important to retaining the open feel of the streetscapes.</td></tr>
<tr><td>Key Existing Characteristics
Architecture is predominantly 50s – early 70s with a small pocket of modern villa styles.
Most dwellings are single storey.
Gardens consist entirely of low-level vegetation.
Front and side setbacks are moderate to generous in size.
Building materials are predominantly brick with tiled roofs, but include pockets where brick, timber and mixed roofs dominate.
Low-level or open style fencing predominates throughout</td><td>Preferred Character
The open streetscapes and spaciousness of the dwelling settings will be maintained and enhanced by:
• Ensuring dwellings are set back from the front in accordance with the predominant setback in the street, and are off-set from one side boundary;
• Encouraging the use of lighter looking building materials, including timber and other non-masonry cladding;
• Encouraging buildings that respect the low scale of the area; and
• Encouraging low front fencing.</td></tr>
</table>

Norlane Precinct 1	
The streetscapes in this precinct have an openness created by the low scale dwellings, with dominant low pitched roof forms, with low front fencing. The presence of timber and fibro dwellings creates a lightness to the streetscape and setbacks are usually regular, giving the area a cohesive quality.	
Key Existing Characteristics Architectural styles are predominantly 1950's with pockets of interwar style, 50s – 70s urban and 60s – 80s style. Dwellings are predominantly single storey. Gardens consist of low-level vegetation with pockets of established vegetation. Front and side setbacks are both generous in size. Building materials are generally timber with pockets of brick and mixed roofing. Majority of fencing in mixed in style, but pockets of low-level fences exist.	**Preferred Character** The spaciousness of the building settings and the openness of the streetscape will be retained and strengthened by : • Ensuring dwellings are set back from the front in accordance with the predominant setback in the street, and are off-set from at least one side boundary; • Encouraging the use of lighter looking building materials, including timber and other non-masonry cladding; • Encouraging buildings that respect the low scale of the area; and • Encouraging low or open style front fencing.
Norlane Precinct 2	
The Precinct has a well maintained and compact urban form created by average to small front and side setbacks and the predominant use of brick. The frequent lack of front fencing or open style fencing creates an open streetscape that is important to offset the smaller front setbacks in some areas.	
Key Existing Characteristics Architectural styles include sections of 1960s–80s, and more recent grand and modern villa styles. Single storey dwellings predominate, Gardens are predominantly low-level with pockets of new /establishing vegetation and established vegetation. Front and side setbacks are moderate in size with pockets of smaller sized setbacks. Building materials are predominantly brick with tiled roofs. Front fencing is frequently not provided and is otherwise open style.	**Preferred Character** The compact building form and openness of the streetscape will be retained and strengthened by: • Ensuring dwellings are set back from the front in accordance with the predominant setback in the street; • Encouraging buildings that respect the scale of the area; and • Encouraging no front fences.
North Shore	
This small coastal precinct is distinctive for its mixture of architectural styles and its location adjacent to Corio Bay. The buildings are low scale and the streetscapes have an openness created by the frequent use of timber and the low front fences. Buildings are generously spaced and well set back from the front. While the area has not experienced redevelopment, this may be a future possibility due to the potential for views.	
Key Existing Characteristics Architecture is predominantly 50s – 60s with small pockets of 60s – 70s. Most dwellings are single storey. Gardens consist entirely of low-level vegetation. Front and side setbacks are moderate in size. Building materials are often brick, but frequently include timber and fibro dwellings. Low, mixed style fencing predominates throughout.	**Preferred Character** The openness of the streetscapes will be maintained and strengthened by: • Ensuring dwellings are set back from the front in accordance with the predominant setback in the street, and are off-set from at least one side boundary. • Encouraging the use of lighter looking building materials, including timber and other non-masonry cladding. • Encouraging buildings that respect the low scale of the area. • Encouraging low front fencing.

5.1.2 Street Tree Strategy

The City of Greater Geelong has an adopted *Street Tree Strategy* which concludes that trees in an urban environment are critical to the well being of the population and planting trees is a simple way of positively transforming an area. The Strategy finds that there is a tree planting deficit of 93,000 trees in the municipality, of which 15 per cent are required in the Corio Ward. This compares to 7.5 per cent in the Cowie Ward, 4 per cent in the Kildare Ward and 7.4 per cent in the Brownbill Ward.

Table 6 details the existing tree profile, the tree planting requirements and the proposed future direction of tree planting for the study area.

Table 6 – Future Direction of Tree planting

Suburb	Existing Tree Profile	Replacement Planting	Infill Planting
Corio / Lovely Banks	5749 trees. Street trees are sparse in many areas of Corio. Most plantings are native but the area is suitable for all styles of planting.	Corio has many opportunities to develop new streetscapes using native or ornamental trees.	65% of nature strips in Corio / Lovely Banks streets do not have street trees – approx 10,677 trees.
Norlane	2802 trees, mostly natives. Many depleted streetscapes.	Continue native planting theme.	49% of Norlane nature strips require trees – approx 2692 trees.
North Shore	230 trees, mostly natives. Few decent streetscapes.	Continue native planting theme.	55% of North Shore nature strips require planting – approx 281 trees.
Rosewall	212 trees, mostly natives. Poorly planted suburb. Vandalism is a big problem.	Continue native planting theme.	72% of nature strips in Rosewall need replanting – approx 545 trees.

Source: Street Tree Strategy (CoGG 2009) – Appendix 1

This data shows that the study area is significantly deficient in the presence of street trees and priority funding for tree planting programs is required.

5.2 Increased Housing Diversity Areas and Urban Consolidation

The demographic analysis reveals that Corio and Norlane have experienced modest population decline over the last 20 years and without future intervention marginal population growth is predicted to occur. Achieving a greater mix of quality high and medium housing density is critical to urban renewal of the study area.

Land within and surrounding the Corio Village Shopping Centre and the Bell Post Shopping Centre is identified for increased housing diversity in accordance with the Greater Geelong Planning Scheme Incorporated Document: *Key Development and Increased Housing Diversity Areas*, City of Greater Geelong, July 2009. These increased housing diversity areas are shown in **Map 8**.

The policy context regarding increased housing diversity areas was noted earlier in section 2.1.10 and is supported in the local policy section of the Greater Geelong Planning Scheme, particularly at Clause 21.06 Settlement and Housing.

Extensive areas of Corio and Norlane are zoned Residential 1 and sit outside land identified for increased housing diversity. Urban consolidation is supported in these areas however greater consideration must be given to responding to the existing neighbourhood character. There is also an expectation that the development density of new development would be of a lower scale than in areas identified for increased housing diversity.

There is some conflict between policy objectives that encourage a greater mix of high and medium housing density and objectives for respecting neighbourhood character. Clause 21.06-4 outlines strategies to address this tension. Relevant strategies include:

- Ensure that development is responsive to the established character of the area.
- Acknowledge that neighbourhood character in the Increased Housing Diversity Areas … will adapt and evolve over time, particularly within and on the edges of activity centres, where land use and development will intensify.
- Retain existing vegetation wherever possible, particularly vegetation that contributes to the municipality's tree canopy.

In refusing a proposed multi-unit development at 12-20 Fairbairn Drive, Corio (to the rear of the Aldi store), the Victorian Civil and Administrative Tribunal made critical findings with regard to respecting neighbourhood character at paragraphs 31 and 32 (TGM Group v Greater Geelong CC [2010] VCAT 1672 (12 October 2010)):

"I accept that the proposed two storey scale is reasonable, notwithstanding that dwellings in the neighbourhood are all single storey. The Design Guidelines for the Corio 3 precinct acknowledge that it is generally acceptable for new buildings to exceed the predominant building height by one storey.

Given the scale of the proposed development, and its intensity across the site, I believe it is imperative that it makes a contribution to the streetscape or public realm. I consider that the proposal fails in that regard. The orientation of the dwellings, and their overall presentation to the street, is entirely unacceptable. Rather than addressing the street and the public realm, the units at the end of both Blocks A & B present their side (west) elevations to the street, with limited fenestration. In that regard the layout is fundamentally at odds with Clause 55.02-5 (Integration with the street), which calls for development to be oriented to front existing streets".

5.3 Heritage

5.3.1 Heritage Overlay

There are five heritage places of significance in the Study Area and Area of Interest included in the Heritage Overlay (see **Map 6)**. These are:

- Railway Culvert, Cowies Creek (HO197)
- Corio Primary School No 124 (HO1619)
- Former Corio Distillery Complex (Cheetham P/L) including former workers houses (HO1728)
- Geelong Grammar School original 1912-13 building complex (HO142)
- Ford Motor Company Complex (HO1717)

The listed sites are unlikely to have any impact on future land use and planning decisions within the structure plan area.

The following places are subject to a Heritage Overlay under the Greater Geelong Planning Scheme. The source for the details of these places is the online Victorian Heritage Database (www.vhd.heritage.vic.gov.au).

Railway Culvert Cowies Creek (HO197)

Location: Cowies Creek -Corio Quay Rd North Geelong
Statement of Significance: C Listed - Local Significance
The Fisherman's Gully Railway/Culvert was erected in 1862-3 as part of the development of the Geelong Melbourne Railway Line. The contractor for the bridge construction was W Porter and the structure was designed and documented by the Victorian Railway's Department in 1862. The basalt structure is an interesting relic of the original Geelong-Melbourne railway line although the original segmental arch spans have been replaced.

Corio Primary School No 124 (HO1619)

Location: 38 Hendy Street Corio
Statement of Significance: C Listed - Local Significance
The building is aesthetically significant on a local level. It demonstrates important design qualities of the Victorian Vernacular style including original external wall material and chimney, though the integrity of the site is fair. The schoolhouse is historically significant on a regional level. It is associated with the early history of education in the region, particularly the northern part of Geelong, and the attempts by various local figures and communities to establish a school. It is socially significant on a local level. It is highly valued by the community for its educational associates. Overall, it is culturally significant at a local level.

Advice from Council's Heritage Advisor is that the correct address for HO1619 is 40-46 Hendy Street and the heritage overlay should be limited to the Victorian Vernacular bluestone building and a 1 metre curtilage around the building, located on the Hendy Street frontage.

Former Corio Distillery Complex (Cheetham P/L) including former workers houses (HO1728)

Location: 23 Lowe Street Corio
Statement of Significance: A Listed - State Significance
The Cheetham Salt complex (former Corio Distillery) at 23A-35 Lowe Street is aesthetically significant at a REGIONAL level. The Cheetham Salt complex (formerly the

Corio Distillery) at 23A-35 Lowe Street is historically significant at a STATE level. It is associated with the development of a distillery works for the Distillers' Corporation Pty Ltd, as a major contributor to employment and economic development in Geelong and more broadly, to Victoria. The complex has associations with Messrs Hare and Hare, consulting architects for its design and construction. Overall, the Cheetham Salt complex (formerly the Corio Distillery) at 23A-35 Lowe Street is of STATE significance.

Geelong Grammar School original 1912-13 building complex (HO142)

Location: 50 Biddlecombe Road, Corio
Statement of Significance: B Listed - Regional Significance
The original buildings of Geelong Grammar School were constructed in 1912-13 following an architectural competition in which the premiated entry was submitted by Gerard Wight and Philip Hudson, acting as architects in association. The Corio site was chosen following extensive debate and controversy over removal from the Maude Street Geelong building established in 1855. The present Grammar School, appropriately designed in a Medieval Revival style is dominated by a squat clock tower and cloistered facade. The chapel, dining room, classrooms and dormitory are built of red brick with contrasting render. The school is the most distinguished private school in Victoria.

Ford Motor Company Complex (HO1717)

Location: 455 Melbourne Road, North Geelong
Statement of Significance: A Listed – State Significance
The significant parts of the Ford Motor Company complex at North Geelong are the 1920s sections only, including the Melbourne Road facade and landscaping. The Ford Motor Company complex is aesthetically significant at a national level. It demonstrates in an outstanding way original design qualities of the interwar stripped Classical style. The Ford Motor Company complex is historically significant at a national level. It is associated with the development of the Ford Motor Company in Australia, as a major contributor of employment and economic development on a national scale. The complex has associations with the American architect, Albert Kahn, who designed many of the Ford industrial plants in the U.S.A. It is also associated with the development of the first fully Australian motor vehicle, the Falcon, in the 1960s. The Ford Motor Company complex is scientifically significant at a state level. The Ford Motor Company complex is socially significant at a state level. It his recognised and valued by the wider community as a major employer in Victoria and as a substantial industrial manufacturer. Overall, the Ford Motor Company complex is of national significance.

5.3.2 Outer Areas Heritage Study

The City of Greater Geelong Outer *Areas Heritage Study Stage 2, The Report Volume 2* (Rowe & Huddle 1998-2000) identified a number of heritage precincts and recommended their inclusion in the Greater Geelong Planning Scheme. One of the precincts is located in Norlane.

Called the Norman Lane Precinct, the area is bounded by North Shore Road, Station Street, Forster Road and the Princes Highway. The precinct is historically, aesthetically and socially significant at a local level for its distinctive Victorian Housing Commission residential character, developed from an attempt by the Government to solve the post WWII housing shortage using timber or cement sheet prefabricated systems from Europe, and the concrete prefabricated system developed at Holmesglen in Victoria.

The proposed heritage precinct has not been implemented into the Greater Geelong Planning Scheme. Advice from Council's Planning Strategy Unit is that implementation is unlikely to proceed as it may restrict development and regeneration opportunities, which are considered to provide overriding benefits to the local community.

5.4 Key Residential Development Sites

5.4.1 Development Opportunities

Much of the land within the structure plan area has been fully subdivided and consequently there are few sites that present significant opportunity for new residential development.

Discrete pockets of developable land are available as follows (refer **Map 9** for locations):

- near to the western boundary of the structure plan area, between Matthews, Purnell and Anakie Roads, shown as Area 1;
- in the north west corner of the structure plan area on land zoned Low Density Residential at 270-302 Plantation Road, Corio (Area 2). This land was previously authorised by the Minister for Planning to be rezoned to Residential 1 Zone (Amendment C155); and
- in the north east corner of the structure plan area, immediately behind the Aldi supermarket, shown as Area 3.

In addition, two large parcels of Residential 1 zoned land located at 240 Bacchus Marsh Road and Lot A Nigella Avenue, Corio are currently undeveloped. However, the parcels are within the buffer of the MC Herd Abattoir located west of these properties. The Environment Protection Authority (EPA) recommends that a 500 metre 'buffer' separate an abattoir and land used for residential purposes. The Nigella Avenue site and much of 240 Bacchus Marsh Road are unusable for residential purposes due to the abattoir buffer requirements.

The MC Herd Abattoir is one of Australia's largest meat processors providing approximately 200 local jobs. Its continued operation in its current location is strongly supported by Council and the Department of Business Innovation.

Council determined on 8 February 2011 to not support a planning permit application proposing to subdivide part of 240 Bacchus Marsh Road into 83 residential allotments. The council cited the potential negative impact the proposed subdivision would have on the "ongoing viability of the regionally important MC Herd Abattoir" as one of the reasons for its decision.

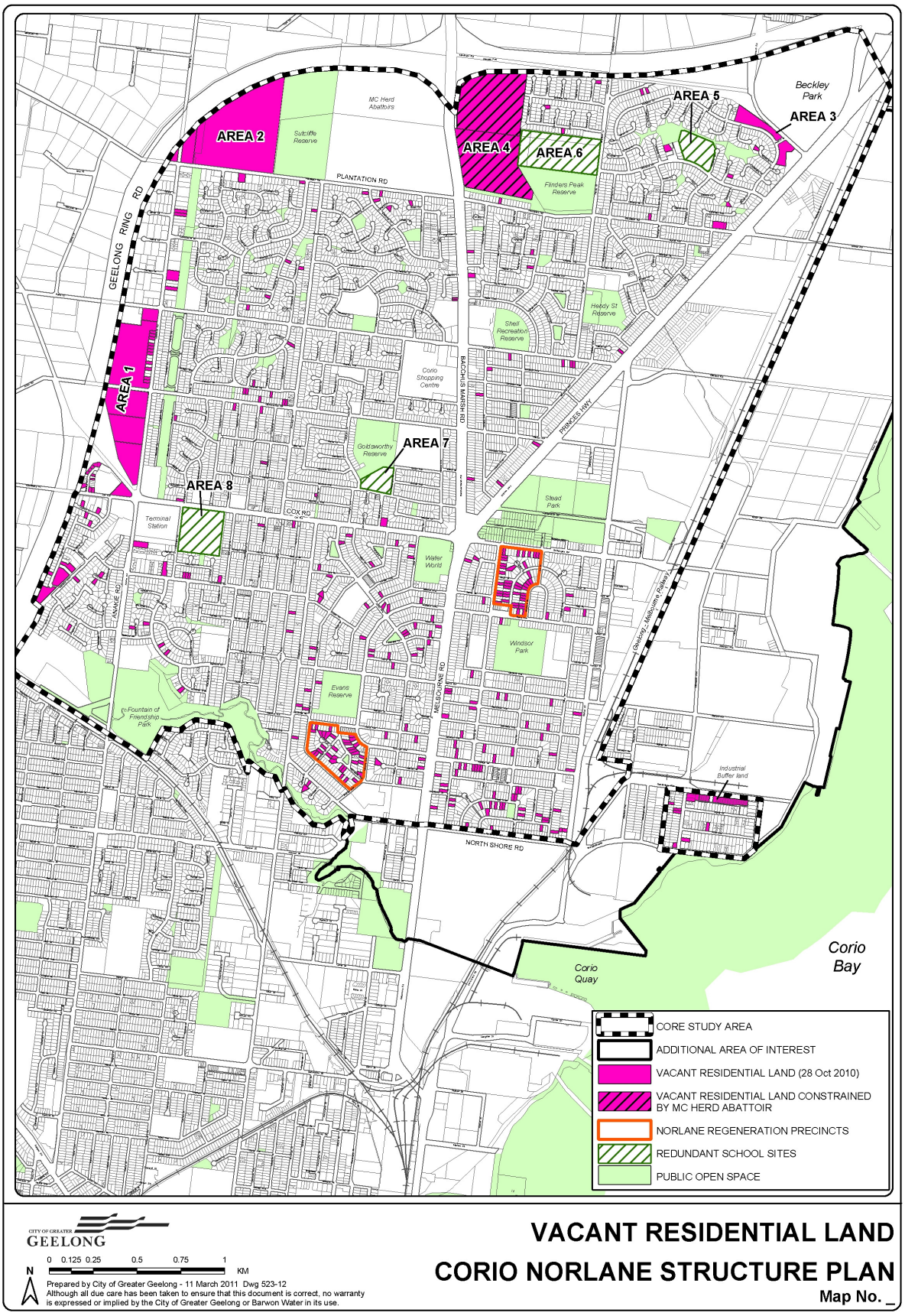
A final decision on the application will now be made by the Victorian Civil and Administrative Tribunal. A decision is expected by mid 2011. This decision will assist in determining the future development opportunities for land in proximity to the abattoir.



Photo 3 - Vacant land around MC Herd Abattoir

Source: Oblique Aerial Photo taken 2009 – City of Greater Geelong

Map 9 – Vacant Residential Land



5.4.2 Vacant existing lots

There are approximately 280 vacant residential lots in established subdivisions across the study area.

Development of these lots presents a significant opportunity to increase the residential population across Corio and Norlane. Development of these lots could:

- Assist in realising urban consolidation objectives through medium density development of appropriate lots; and
- Meet the need for diversified housing stock across the study area,particularly for smaller households, including aged persons.

In 2009 the Office of Housing (OOH) sought approval from the Minister for Planning to implement Stage 2 of the Norlane Regeneration (Housing) Project which proposes the construction of 160 new homes across two 'superlots' with a high proportion of OOH ownership (see 'Norlane Redevelopment Precincts **Map 9**). Council wrote to the former Minister for Planning to convey its conditional support for the project. The newly appointed Minister under the new Government elected in 2010 is yet to decide if permission should be granted for the project. If approved, the project is estimated to double density across the OOH lots in the regeneration areas.

5.4.3 Redundant School Sites

The implementation of the Corio Norlane Education Regeneration Project over coming years will result in a number of former school sites becoming available for new development opportunities.

Rosewall Primary School

The Rosewall Primary School (Area 5 **Map 9**) site has been prepared for sale by the Department of Education and Early Childhood Development (DEECD). This site has an area of 3 hectares, is zoned Residential 1, and is immediately suitable for residential development.

Flinders Peak Secondary College

The Flinders Peak Secondary College (Area 6 **Map 9**) will be permanently closed from December 2010. However, the facility will continue to be used as an education facility by SCOPE and Nelson Park School in the short term future.

In its Ordinary Meeting Minutes of 14 December 2010, Council notes that it has seen the development of similar facilities in the region, such as Barwon Valley School, struggle to meet the high needs of the students. The erosion of open space and development has had a negative impact on the educational quality to these disadvantaged students. Council resolved at this meeting that it:

- support the continued use of the former Flinders Peak Secondary College site as an educational facility; and
- impress upon DEECD the need to retain the site as a long term educational facility for students with intellectual and physical disabilities.

The DEECD is yet to determine its future need to retain all or part of this site, which will in turn inform whether any of it will be available for future development.

Corio South Primary School

The Corio South Primary School located at 38-56 Vermont Avenue, Corio (Area 7 **Map 9**) will close at the end of 2012. Subject to resolution of appropriate funding, the site has

been earmarked to house the Corio Community Heath Centre, which is proposed to relocate from its current site at the Corio Shopping Centre.

Whilst the site represent a good opportunity for future residential development, it is unlikely to be available for this purpose.

Norlane High School

The Norlane High School (Area 8 **Map 9**) is earmarked for closure at the end of 2011. The site is located on the southern side of Cox Road, adjoining a power station managed by SP Ausnet. The site has an area of approximately 5.8 hectares and is zoned Residential 1. The presence of the power station is understood to not encumber development on surrounding land.

This site provides a positive opportunity for infill development in an established residential area.

5.4.4 Quality of rental housing stock

There is anecdotal evidence that suggests some landlords – who are responsible for the upkeep and maintenance of private rental properties – are negligent in their duties. Poorly maintained private residences detrimentally impact on the appearance of neighborhoods and act to discourage investment in surrounding housing stock.

A housing market assessment by Landlink (*Housing Market Assessment, June 2009*) concludes that the OOH owns a substantial amount of housing stock in the study area which is mostly in excess of 40 years old, and whilst functional, does not present well and requires modernisation to meet the needs of occupants. The Landlink study considers this to be a significant barrier to private investment in housing in the area.

Relevant recommendations of the Landlink study include:

- The OOH, as a substantial landlord in the area, can "lead the way" by progressively upgrading its housing stock.
- Partnerships with private developers or Housing Associations should be explored to redevelop the OOH ageing housing stock.
- That the OOH sells a proportion of the land to the private sector in a manner that provides control over the quality and style of the end product.
- As an investor, the land would be acquired with a number of pre-designed dwelling options that could be owner-occupied or as an investment with OOH tenants.
- The OOH would receive $80,000 - $90,000 per block from the land sale that would be contributed to construction of new dwellings on the remaining OOH vacant land and the replacement of sub-standard dwellings.
- Identify areas in Norlane that can easily be consolidated to allow for a larger scale modern urban development.
- A combination of private investment and government funded urban renewal will provide a two-pronged attack for self-sustaining urban renewal.

5.5 Estimated Lot Supply

A summary of the potential lot yield in the study area is shown in **Table 7**. This is based on **Table 8** which shows possible developments sites across the area, taking into account known development constraints. These sites are shown in **Map 9**.

Future development in the Structure Plan area is estimated to yield between 1086 and 1378 lots (refer to **Table 6**).

Full development of these lots at an estimated 2.4 persons per dwelling, could provide housing for between 2606 and 3307 people.

Table 7 – Summary of Lot Supply

Scenario	Land included (refer Map 9)	Potential Lot Yield
1 – moderate yield (15 dwellings/hectare)	1, 2, 3, 5, 8 & vacant lots (214 + 294 + 34 + 37 + 87 + 420)	1086
2 – high yield (20 dwellings/hectare)	1, 2, 3, 5, 8 & vacant lots (214 + 392 +46 + 50 + 116 + 560)	1378

The estimated lot supply calculation has not included potential lots that could result from the development of Area 4 (land east of MC Herd Abattoir), the Flinders Peak Secondary College Site or the Corio South Primary School Site.

Both the Flinders Peak Secondary College site and the Corio South Primary School site are earmarked for non residential future uses. The Department of Education and Early Childhood Development is still considering the alternatives for these sites.

Table 8 – Summary of Residential Development Opportunities within Structure Plan Area

Site	Area	Constraints/Comments	Potential lot yield	
			Moderate Infill 15 lots/ha	**High Infill 15 lots/ha**
Area 1 207-239 Purnell Road and 445-475 Anakie Road, Lovely Banks	16 ha	• Current subdivision permit 1123/2004/A permits 204 lots, with additional areas available for further subdivision at medium and conventional density.	204 lots permitted. Potential for 10 lots on subdivided land.	204 lots permitted. Potential for 10 lots on subdivided land.
Area 2 270-302 Plantation Road, Corio	20.8 ha	• Proximity to MC Herd Abattoir. • Overhead transmission lines. (19.6 ha net developable area) • Site covered by Environmental Significance Overlay Schedule 4. • Previously received Ministerial authorisation to rezone from LDRZ to R1, however authorisation lapsed. New request submitted for authorisation based on a 229 lot residential subdivision of part of the land.	19.6 * 15 = 294	19.6 * 20 = 392
Area 3 12-20 and 22-44 Fairbairn Drive, Corio	2.3 ha	• Emissions from Aldi development.	2.3 * 15 = 34	2.3 * 20 = 46
Area 4 240 Bacchus Marsh Road & Bisnella land		• Proximity to MC Herd Abattoir requires 500 metre separation to residential use. • Current planning permit application to subdivide 240 Bacchus Marsh Road into 83 lots, including 500 metre separation to abattoir. Council yet to determine application. Application to be determined by VCAT by mid 2011.	83	83
Area 5 Rosewall Primary School, 26-34 Sharland Road, Corio	3 ha	• Part of Rosewall Neighbourhood House located on land. • Additional land may be required for expansion of Rosewall Neighbourhood House.	2.5 ha * 15 = 37	2.5 ha * 20 = 50
Area 6 Flinders Peak Secondary College, 95 Hendy Street, Corio	9.2 ha	• Potentially will be retained for education purposes	9.2 ha * 15 = 142	9.2 ha * 20 = 184
Area 7 Corio South Primary School, 38-56 Vermont Avenue, Corio	1.9 ha	• Potentially will be used by Barwon Health	1.9 ha * 15 = 28.5	1.9 ha * 20 = 38
Area 8 Norlane High School	5.8 ha	• Proximity to power station	5.8 ha * 15 = 87	5.8 ha * 20 = 116
Vacant allotments in existing subdivisions	280	• Opportunity to increase density of appropriate vacant lots.	280 * 1.5 = 420	280 * 2 = 560

5.6 Key Influences – Built Form

Built Form

- Corio and Norlane are generally characterised by open streetscapes with low scale housing.
- There is need to review built form policy to ensure that it is not unnecessarily restricting urban consolidation.
- Poorly maintained private residences and Office of Housing stock detrimentally impact on the appearance of neighborhoods and discourage investment.
- The study area is significantly deficient in the presence of street trees.

Development Opportunities

- Existing housing stock and lot configuration provide potential for redevelopment with new housing stock including medium density housing, particularly close to service nodes.
- The structure plan area contains some brownfield sites that offer new opportunities for relatively substantial residential development.
- Redevelopment of redundant school sites offers strong opportunities to increase lot supply across the structure plan area. In some instances, all or parts of these sites will need to be retained for community uses and will not be available for residential development.
- In total, there is estimated to be approximately 45 hectares of land in large landholdings available for development across the structure plan area.
- There is estimated to be an additional 280 vacant lots available for new development.
- Moderate development (15 dwellings per hectare) of vacant land across the structure plan area is estimated to yield 1086 lots. More intensive development (20 dwellings per hectare) of vacant land is estimated to yield 1378 lots.
- Full development of the vacant land across the structure plan area could provide housing for between approximately 2600 and 3300 people.

6.0 Movement and Transport

6.1 Demographic Analysis

ARUP Consultants on behalf of Major Projects Victoria analysed demographic data in comparison with other selected geographic areas and identified trends that will impact upon the movement network. The ARUP data indicates that there is potentially strong demand for public transport in Norlane and Corio for the following reasons:

- There are a high proportion of residents aged between 0-14 and 65+ who typically have no or low access to private vehicles and a propensity to use public transport.
- There is a high proportion of households that do not have a vehicle; and
- There are a high proportion of households that have access to one vehicle and that that vehicle is used as the sole mode of the journey to work or in combination with either train or bus.

In terms of rail services, the data indicates that there is:

- A high proportion of residents driving to rail stations and a very low proportion of residents using the bus service to access trains.
- Melbourne is a popular destination for people using rail services as evidenced by the high proportion of journey to work trips utilising a combination of heavy rail and light rail as dual modes.

In terms of bus services, the data indicates limited service coverage as evidenced by the high proportion of journey to work trips utilising a combination of bus and car as passenger as dual modes.

6.2 Rail

There are two components to the rail service bounding the study area; freight rail and passenger rail. The primary function of freight rail in Geelong is to facilitate the movement of bulk and break bulk goods to and from the Port. Rail freight services operate on the Geelong-Ballarat and Geelong-Melbourne lines. The freight sidings are located immediately east of North Shore station. Opportunity exists to develop the existing line north of Heales Road/Forest Road South to access the Geelong Ring Road Employment Precinct (GREP).

VLine operate an existing passenger rail service to Norlane and Corio, which stops at Corio and North Shore stations. This is a regional service as opposed to a metropolitan service, therefore Norlane and Corio residents generally do not use rail services to access the Geelong Central Activities Area. The VLine service operates between Marshall and Southern Cross Station, Melbourne with some services continuing on to Warrnambool. The North Shore Station is also where passengers embark and disembark from the Overland Train which runs between Melbourne and Adelaide. This service runs 3 times per week in both directions.

The frequency of rail services on this line is detailed in **Table 9.** ARUP 2009 notes that there are greater services on this line than depicted, however approximately 42% of services bypass Corio and North Shore stations. Therefore, the frequency of rail services that are easily accessed by residents in the study area is relatively limited and rail services at these stations predominately operate on a 2 hourly basis. The limited frequency of service has a negative impact on the accessibility of rail based public transport for local residents.

Table 9 – Frequency of VLine Services on Geelong Line

		Monday to Friday		Saturday		Sunday	
Route	**AM/PM**	**North Shore**	**Corio**	**North Shore**	**Corio**	**North Shore**	**Corio**
Geelong to Melbourne	**AM**	05:01 05:37 06:07 06:25 07:03 07:33 08:00 09:40 10:38	05:04 05:40 06:10 06:28 07:06 07:36 08:37 09:43 10:51	05:33 06:35 07:40 08:40 09:44 10:40 11:44	05:36 06:38 07:43 08:43 10:43	07:00 08:20 10:40 11:44	07:03 08:23 10:43
	PM	12:38 14:38 15:37 16:30 17:41 18:34 20:26 21:28 22:28	12:41 14:41 16:33 17:44 18:37 20:29 21:31 22:31	12:40 14:40 15:44 16:40 17:40 18:40 20:35 21:35 22:35	12:43 14:43 16:43 17:43 18:43 20:38 21:38 22:38	12:40 13:44 14:40 15:44 16:40 17:40 18:40 21:05 22:35	12:43 14:43 16:43 17:43 18:43 21:08 22:38
Melbourne to Geelong	**AM**	00:48* 00:55 06:40 07:52 08:38 09:48 10:46	00:46* 00:52 06:36 07:48 09:46 10:44	01:55 07:48 09:46 10:46 11:41	01:52 07:44 09:44 10:44	00:48 01:48 09:10 10:46 11:41	00:46 01:46 09:08 10:44
	PM	12:46 14:02 14:54 15:47 16:27 17:06 17:44 18:40 19:50 20:56 21:55 22:51** 23:01*** 23:51	12:44 14:50 16:23 17:03 17:49 18:44 19:46 20:53 21:52 22:49** 22:57*** 23:49	12:46 14:46 15:41 16:46 17:48 18:46 19:46 20:48 21:48 22:48 23:48	12:44 14:44 16:44 17:44 18:44 19:44 20:46 21:46 22:46 23:46	12:46 13:41 14:46 15:41 16:46 17:46 18:54 21:18 22:48	12:44 14:44 16:44 17:44 18:50 21:16 22:46

Monday morning only	*
Monday to Thursday only	**
Friday only	***

Corio station facilities include a station building (currently unoccupied and shuttered), bicycle racks, platform lighting and a park and ride facility. There is no direct bus connection to Corio station.

North Shore station facilities include two passenger shelters, bicycle racks, interchange facility (including VLine bus service), platform lighting and park and ride facilities. Pedestrian and private car access to the station is via Station Street while bus route number 11 provides public transport access. The Department of Transport and the Transport and Community Infrastructure Working Group are investigating options to redevelop North Shore Station.



Photo 4 – Interstate Platform, North Shore Station

Source: http://en.wikipedia.org/wiki/North_Shore_railway_station,_Victoria

During observation (ARUP 2009: *Transport Analysis*) at each station made on Friday 24 and Thursday 30 July 2009 mid-afternoon, no cars were parked in the park and ride facility at North Shore and only 5 were parked at Corio station. There were no bicycles secured at either station. Both stations appear to be significantly underutilised. The factors which contribute to underutilisation include (ARUP 2009):

- Limited frequency of service at each station.
- Limited residential access to each station within the walkable catchment for each station (i.e. areas from which the station can be walked to in 10 minutes or less). The walkable catchment for Corio station does not include the surrounding residential areas of Corio or Rosewall. The lack of cycling/pedestrian accessibility to this station is compounded by the obstructing effect of the Princes Highway, which further dislocates residential areas from Corio station. East Norlane lies within the walkable catchment of North Shore station, however Station Road has an obstruction effect on residential access to the station as it is used by heavy vehicles as a freight route between locations within the Port. This obstructing effect is compounded by a lack of pedestrian or signalised crossings on Station Road in proximity to the rail station.
- Perceived lack of safety. Neither station is located within an active precinct, which reduces the opportunity for passive surveillance and the general perception of safety. Corio station is located in an industrial buffer zone with no other uses in proximity. Although North Shore station is in close proximity to East Norlane and the residential neighbourhood of North Shore, the station is oriented towards the freight yards and the port, thereby limiting the opportunity for passive surveillance.
- Poor linkages to activity centres. Corio station and Corio Shopping Centre are not linked by public transport. Although North Shore station has bus interchange facilities, the frequency of linking services is limited and the outdated interchange infrastructure does not promote network legibility.

6.3 Bus

The existing bus network effective October 2010 is depicted in **Figure 15**. The bus network generally operates along the north/south spines of Corio and Norlane.

The bus network in the study area performs a metropolitan function, connecting residents of Corio and Norlane to the employment opportunities and the services and facilities that are available in the Geelong Central Area and other activity centres in Geelong. The connectivity of the network to the Corio Shopping Centre is strong, while the integration of the bus network with rail services is generally weak – with no link to Corio station and a weak link to North Shore station. The bus network has limited connectivity to neighbourhood activity centres, strip shopping and bulky retailing and supermarkets.

The frequency of bus service is indicated in **Table 10** which shows that the Monday to Friday peak services range from 20 minutes to 60 minutes. Services are reduced on the weekend with many services operating every 60 minutes. Monday to Friday services generally begin at 6 am to 6.36 am and finish in the late evening.

Table 10 – Bus Service Frequency

			Mon-Fri AM Peak			Sat	Sun
Mode	**Description**	**Route No**	**Frequency**	**First service**	**Last Service**	**Frequency**	**Frequency**
Bus	Rosewall via Corio SC to Geelong City	10	20 mins	06:05	21:45	30 mins	60 mins
Bus	Corio via Corio SC via North Shore Station to Geelong City	11	60 mins	05:51	19:57	60 mins	60 mins
Bus	Lara to Corio via Corio SC to Norlane to Geelong City	12	20 mins	06:36	20:36	30 mins	60 mins
Bus	Corio via Corio SC to Norlane to Geelong City	30	20 mins	06:36	20:36	30 mins	60 mins
Bus	Corio SC via Geelong City to St Albans Park	45	30 to 60 mins	09:02	20:38	30 to 60 mins	60 mins

According to ARUP 2009 the condition of infrastructure supporting the bus network is such that while shelters are provided at some bus stops, the majority of stops are serviced by a typical pole and sign. Very few (if any) of the stops provide any route mapping or timetabling information which impedes network legibility for bus patrons. Furthermore, the absence of a dedicated bus lane along the Princes Highway or Bacchus Marsh Road results in buses regularly merging from service roads into highway traffic, creating longer travel times.

The Department of Transport has recently completed redevelopment of the bus interchange at Corio Village Shopping Centre, including designated bus access and parking bays, shelters and timetabling information.

Accessibility to bus services in residential areas, as benchmarked by a 5 minute (400 metre) walkable catchment for each stop was undertaken by ARUP 2009.

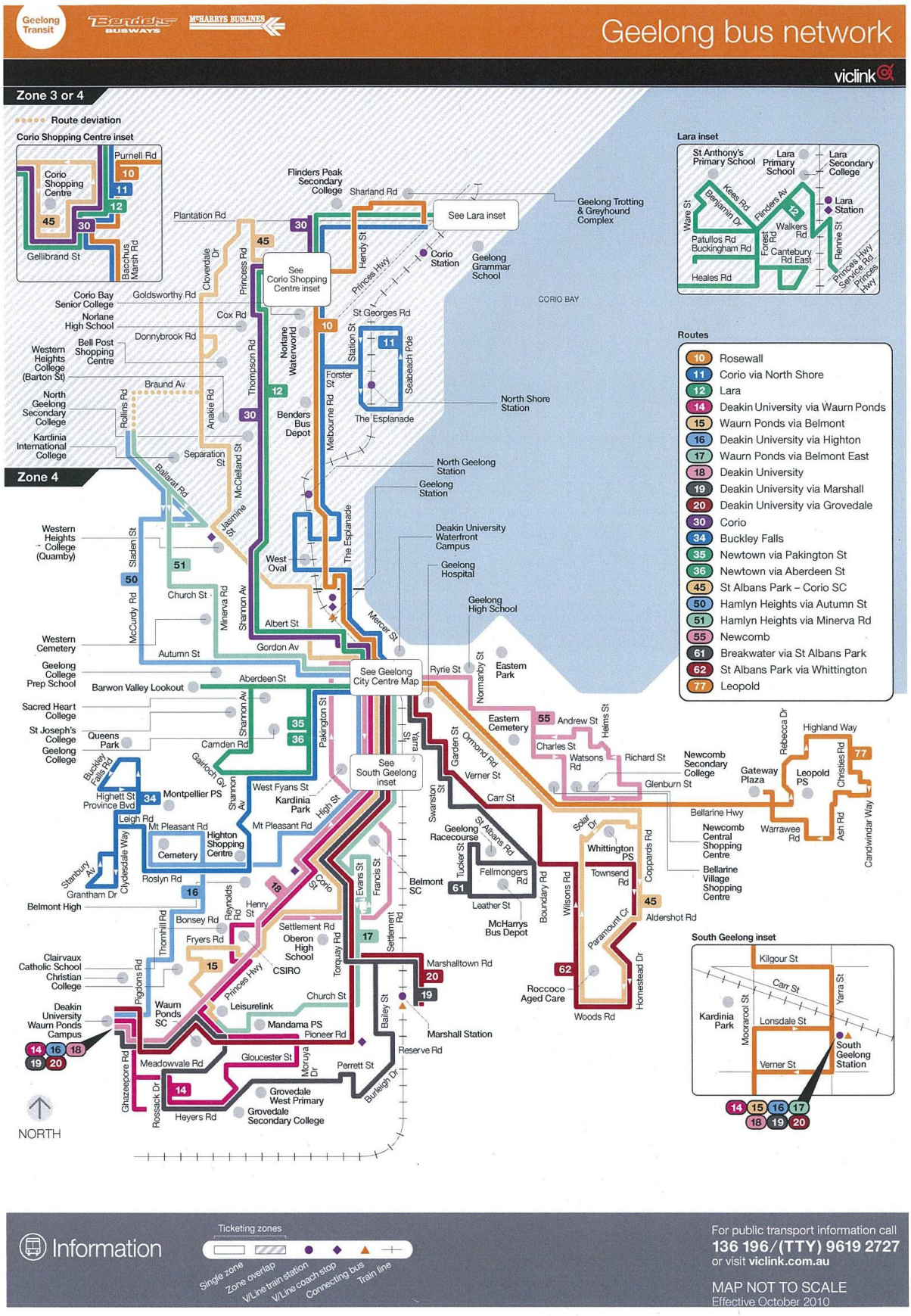
The study indicated that large portions of residential areas in the study area do not have reasonable accessibility to bus services during different travel periods and on different routes, based on a threshold level of service provision of:

- Monday to Friday – service frequency 1 hour or better between 7 am to 10 pm.
- Saturday – service frequency 1 hour or better between 8 am and 9 pm.
- Sunday – service frequency 1 hour or better between 8 am to 7pm.

The study showed that although the north/south routes are designed to foster access to the Geelong Central Area and the Corio Shopping Centre, accessibility is hindered by infrequent services, poor network legibility, limited infrastructure for patrons, limited connectivity with other modes of transport and limited access to bus stops for many residences. The lack of accessibility in Corio and Norlane to the major metropolitan transport network is a significant impediment to resident's ability to access employment opportunities and services and facilities, both within Greater Geelong and beyond. This is compounded by low levels of household car ownership.

The ARUP study was undertaken prior to the new Geelong Bus Network becoming operational in October 2010. The October 2010 network introduced new routes (though still using established north/south main roads), removed route no. 12 and generally increased the frequency of services, including earlier first and later last services. Analysis of these changes and their effects on bus patronage and accessibility for local residents is required.

Figure 15 - Existing Bus Network



6.4 Road and Freight

The transport network in the Corio and Norlane area is focused on road based movements, with a significant emphasis on the heavily trafficked north/south routes.

The Geelong Ring Road alleviates some of the traffic issues faced in Corio and Norlane. A large proportion of the through traffic – including vehicles with a non-Geelong destination such as freight and tourist and landowner traffic generated by the Great Ocean Road and coastal and hinterland south west of Geelong – is diverted away from the study area.

At present, VicRoads' assessment is that all arterial roads in the study area are operating within capacity and can effectively service the volume of freight and road traffic. VicRoads has scheduled two projects in the short term; duplication of Bacchus Marsh Road between Teleta Cr and Heales Road, and signalisation of Cox Road at its intersection with Princess Road and at school sites.

6.4.1 VicRoads Geelong Freight Linkages Study

Bacchus Marsh Road and Shell Parade have been identified as the key freight routes to the Port of Geelong for future planning (VicRoads Geelong Freight Linkages Study 2008). There is good direct access between the Port of Geelong and Melbourne, utilising either the Princes Freeway and Princes Highway, Station Street and St Georges Road, or the Princes Freeway and Shell Parade. Freight from south western Victoria is expected to use the Geelong Ring Road to access the Port.

Extensive stakeholder consultation indicates that trucks are expected to use either Cox Road or Bacchus Marsh Road, both of which are arterial roads. The VicRoads study identified that Bacchus Marsh Road be recognised as the main route from the Geelong Ring Road to the Port. While Cox Road will provide a support function to Bacchus Marsh Road for access to the Port, this route is less attractive to heavy vehicles due to the geometry of the Princes Highway/ Bacchus Marsh Road/Cox Road intersection.

Generally there are no restrictions imposed on vehicles on arterial roads and freight traffic can travel via any arterial route in Corio and Norlane. The preferred routes nominated by VicRoads are based on observed travel time savings. The traffic management procedures that are currently in place restrict the diversion of heavy vehicles off St Georges Road after 6 pm.



Photo 5 – Truck movements to Port

Source: VicRoads Geelong Freight Linkages Study

The VicRoads Geelong Freight Linkages Study proposes the following actions which are also shown in **Figure 16**:

- Improve the Cox Road/ Bacchus Marsh Road intersection to allow for safer, more efficient movement of freight;
- Signalise the school crossings in Cox Road;
- Improve signal linking in Cox Road, Bacchus Marsh Road and Ballarat Road;
- Encourage freight traffic accessing the Port of Geelong to use Bacchus Marsh Road and Shell Parade by signage and industry consultation;
- Review traffic signal operation at the intersection of Princes Highway/Cox Road/ Bacchus Marsh Road following opening of the Geelong Ring Road to give more capacity to Cox Road and Bacchus Marsh Road;
- Road and land use planning to recognise Bacchus Marsh Road and Shell Parade as key freight routes to the Port of Geelong;
- Extend duplication on Bacchus Marsh Road in the short/medium term as warranted by traffic volumes and state wide priorities;
- Monitor growth in traffic demand and development of the GREP with a view to evaluating the need for Melbourne oriented on-off ramps on the Geelong Ring Road at Broderick Road;
- Monitor growth in traffic demand between the Port of Geelong and the Geelong Ring Road with a view to evaluating the need for a transport corridor linking the Geelong Ring Road and Shell Parade.

The Geelong Port and adjacent industrial areas generate a large volume of heavy vehicle traffic, much of which passes through Corio and Norlane along either Bacchus Marsh Road or the Princes Highway. This through traffic has a substantial impact on the amenity of local residents and discourages pedestrians and cyclists.

Continued efficient freight access to the Port via road is critical to the future operation and expansion of the Port. This needs to be balanced against the impacts on residential amenity.

The principal road and rail routes to and through Corio and Norlane are shown on **Map 10**.

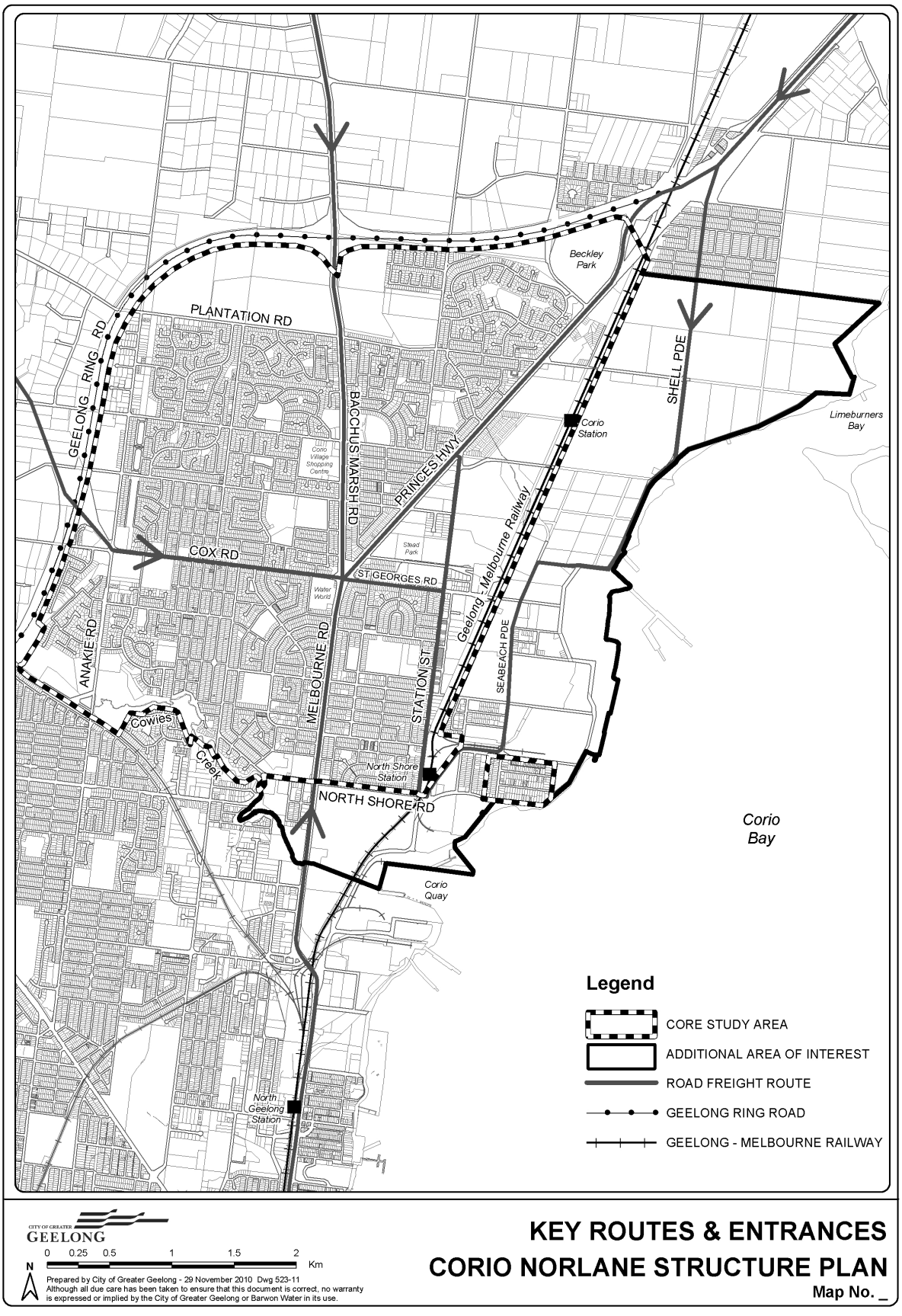
The *Port of Geelong – Port Land Use Strategy 2009* supports the *Geelong Freight Linkages Study, in* particular the following initiatives:

- The designation of preferred road freight routes linking the port to the Geelong Ring Road, the GREP and other major roads.
- Ensuring that the role of key port freight routes is recognised through road and land use planning.
- Improving pedestrian safety, particularly in the vicinity of schools.
- Improving the safety and efficiency of identified intersections.
- Monitoring traffic demand of the GREP and the demand between the Geelong Ring Road and the Port, with a view to providing new connections where warranted.

Figure 16 – Geelong Port Linkages Study – Proposed Actions



Map 10 – Key Routes and Entrances



6.5 Active Transport

Active transport is transport that relies entirely or significantly on physical activity to get a person from A to B. It includes travel by foot, bicycle and other non-motorised vehicles as well as journeys to public transport. The existing bicycle and pedestrian paths generally serve a recreational function as opposed to a transport function, for example the shared path following Cowies Creek in Norlane.

The City of Greater Geelong recently engaged David Lock Associates (DLA) to prepare an Active Transport Plan. The draft plan: *An Active Transport Plan for Corio and Norlane*, June 2010, identified the following relevant issues (these are also shown in **Figure 17)**:

- Corio and Norlane area reasonably well served in relation to public transport facilities. In addition to two railway stations the area is served by five bus routes with a number of bus shelters and stops. However, there is a lack of direct east west connections linking residences with the railway station and the Bay. Service frequency is also variable particularly at evening time and weekends.
- Corio and Norlane are generally well provided for in relation to pedestrian footpaths. Pedestrian movement is focused around the main roads such as Cox Road, Bacchus Marsh Road and Purnell Road where key destinations are generally located.
- There is a general lack of cycle paths within the Corio and Norlane area. On and off road cycle paths are the two favoured facilities that would encourage more people to cycle more often in Geelong. Safe and secure cycle parking is another factor that encourages people to cycle. The *Greater Geelong Cycle Strategy* (March 2008) makes a series of recommendations regarding the provision of cycle lanes along major roads within Corio. **Figure 18** shows the North Geelong Cycling Routes.
- East-west pedestrian and cycle movement to the eastern portion of the study area is restricted by the Princes Highway which acts as a major physical barrier to movement.
- Pedestrian accessibility to the railway stations is undermined by the lack of surveilled (overlooked) footpaths through large industrial areas which may cause perceived safety concerns.
- Spatial analysis highlighted that there is a relatively large quantity of public open space. The majority of residences are within a 400 metre walkable catchment of at least one neighbourhood space. However, there are some pockets of land that are not within a 400 metre walkable catchment to public open space.
- There are a number of locations throughout the study area where the community felt unsafe. These included both railway stations that were considered disconnected and isolated from the surrounding residential neighbourhood.
- There are a number of Council community buildings within Corio and Norlane defined as community meeting places. These locations are distributed throughout the study area and focused around the major road network. These locational attributes help in relation to pedestrian and cycle accessibility as well as being located close to public transport routes. The spaces also tend to be co-located with other facilities including major pieces of open space.

Figure 17 – Active Transport Current Issues Plan

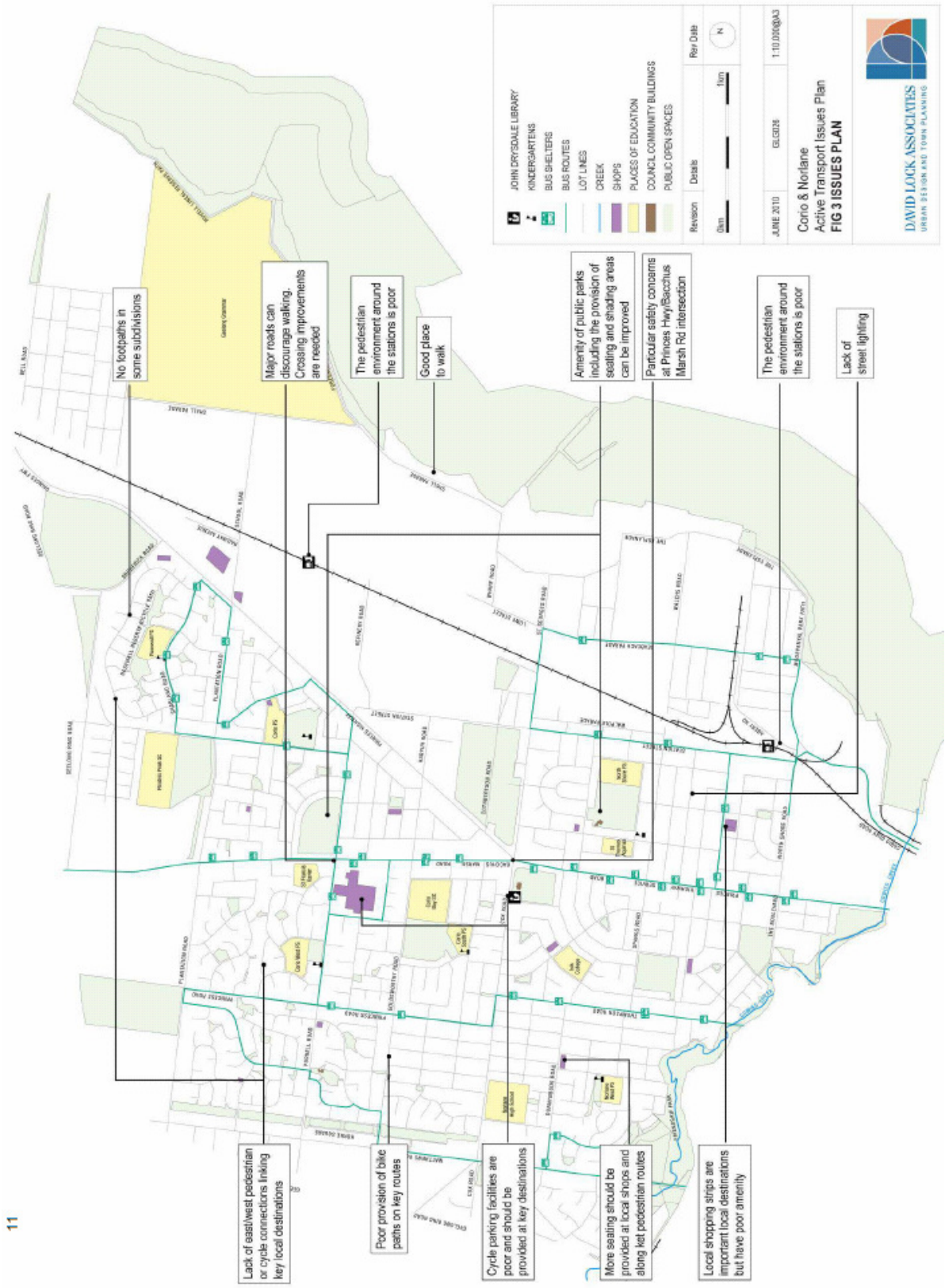


Figure 18 - North Geelong Cycling Routes



Source: Greater Geelong Cycle Strategy – Volume 1 (March 2008)

The *Active Transport Plan* goes on to find that although the area is reasonably well served with public transport and pedestrian infrastructure, there are a number of features that deterred the community from walking or cycling. These include:

- Footpaths – where footpaths are provided some are unsafe, uneven and poorly maintained. There are a number of areas where there are no footpaths at all.
- Major Arterial Roads – the major roads including Princes Highway, Bacchus Marsh Road and Cox Road were considered difficult to cross.
- Train Station – whilst the benefit of having two stations was recognised, the community also raised concerns regarding the safety of the train station environment. Particular issues included the poor quality of the lighting and lack of safe and convenient pedestrian access.
- Local Shopping Strips – many of the community felt that shopping strips were unattractive and unwelcoming.
- Green Space – whilst residents appreciate having open space available there were a number of concerns regarding the safety and amenity of some of the parks.

6.6 Geelong Transport Strategy

The *Geelong Transport Strategy* (CoGG 2003) was initiated to provide a framework for the future development of the transportation network for the entire municipality over the next decade. The strategy provides direction for Geelong to remain an efficient and sustainable national and international regional passenger and freight hub.

The strategy identifies factors which influence travel demand in the region and this includes:

- *Population growth.*
- *Industrial employment growth focused in the North Geelong industrial area.*
- *Improved accessibility between Melbourne and the Geelong region as a result of improvements to the Princes Freeway and the inter-city rail link.*
- *Continuing growth in freight movements as the role of the port and consumption of goods and services increases.*
- *Longer working hours, increased participation of women in the workforce, higher disposable incomes, increases in the number of activities involving children and growth in part time and casual jobs and flexible working hours will maintain the need for quick and convenient forms of transport.*
- *Geelong's urban form – i.e. its distribution of land uses and population density, its transport system, its social and demographic factors, its people's lifestyles and its geographical constraints will maintain the car as the predominant mode of travel.*
- *The appropriate integration of transport and land-use planning will be an important part of reducing private vehicle use and associated vehicle emissions.*
- *An aging population leading to an increased demand for walking, community transport and public transport services.*

Strategic directions and actions are addressed under the themes of: managing travel demand; public transport; freight; roads; land-use; bicycles; pedestrians; and traffic management in neighbourhoods and urban activity centres.

Directions and actions from the *Geelong Transport Strategy* specific to the study area include:

- Consider a bus service operating between Corio Station and Corio Village Shopping Centre.
- The Corio Village Shopping Centre is well located to continue its bus interchange role.
- The future of Corio and North Shore Stations will be reviewed in the light of future upgraded local bus services to northern Geelong and Lara.
- Identification of North Shore Station as a potential location for an integrated bus/rail service.
- Review the need for a transit-way corridor suitable for priority bus services from Geelong to Corio Shopping Centre via Thompson Road.
- Review the need for standard-gauge access to the Port of Geelong to link regional markets.
- As additional industries locate to the Heales Road industrial area (Geelong Ring Road Employment Precinct), increasing freight movements, an improved connection to the Geelong Port may be required. Alternatives to road based options may also be considered.

6.7 Key Influences – Movement and Transport

Road and Freight

- The road network in Norlane and Corio is generally operating within capacity.
- VicRoads is planning for the future duplication of Bacchus Marsh Road.
- Freight transport should be encouraged to use one east west route and one north south route in order to minimise impacts on amenity, accessibility and mobility. The construction of access ramps at the intersection of Broderick Road and the Geelong Ring Road could divert a large proportion of the eastwest bound freight traffic from sensitive residential areas and assist in facilitating expansion of the Port of Geelong.
- Increased freight movement by rail could also alleviate road freight impacts on residential areas.

Public Transport

- There is a high proportion of younger and older residents who typically have no or low access to private vehicles and a propensity to use public transport.
- Significant rail assets in North Shore and Corio Stations, which should provide comparative transport advantages to other residential areas of Geelong, are poorly utilised, connected and valued by the community.
- North Shore Station suffers from poor amenity and a lack of complementary uses that would serve to activate the station.
- The bus interchange at the Corio Shopping Centre has been redeveloped and changes to the Geelong Bus Network, effective October 2010, have increased service frequency.
- There is inadequate bus timetabling and route information readily available to patrons.
- Service lanes on Melbourne Road and Bacchus Marsh Road are not connected resulting in poor passenger safety for bus users, traffic congestion and inefficient travel times.

Pedestrian and Cycling

- Perceived safety concerns is a major deterrent to the community walking or cycling.
- The population of the study area is aging, leading to an increased demand for walking, community transport and public transport services.
- Pedestrian and cycling routes are not linked with key destinations and public transport nodes. East-west movement in particular is restricted by the Princes Highway which acts as a major barrier.

7.0 Economic Development

The sub regional role of northern Geelong is currently as the industrial hub of the region. In the context of the Geelong region, Corio and Norlane have the attributes to be high demand locations. The area is located centrally to Geelong, Avalon Airport, the Geelong Port and rail linkages to Melbourne. However these positive locational advantages have not translated into positive economic trends for the Corio and Norlane population, contrary to the strong resident and jobs growth experienced by the Geelong region.

The following chapter provides an overview of the key industry sectors affecting economic prosperity across Corio Norlane. These sectors are housing, retail and industry. The chapter also provides an overview of Corio and Norlane's labour force trends as well as global to regional economic trends that need to be taken into consideration through the structure planning process.

7.1 Labour Force

In the report *Corio Norlane Urban Renewal Project – Employment and Economic Development Strategy*, SGS Economics and Planning found the Corio and Norlane local economy is characterised by the following:

- In 2006, about 45% of people (aged over 15) were counted as being 'not in the labour force', reflecting the areas high dependency on non labour force (eg disability) welfare as the primary income source.
- In 2006, 13.3% of people were unemployed, compared with 6.3% of people in Geelong and 5.4% of people in Victoria.
- Corio and Norlane have a high unemployment rate across all age cohorts to 65 years to age. The most significant unemployment rates are in the leaving school age cohort of 15-19 and the 20=-24 year cohort.
- Labour force participation rates are about 10% lower across all age cohorts in Corio and Norlane compares with Greater Geelong and Victoria.
- Corio and Norlane have a low pool of highly educated workers with only 4% of the population holding a bachelor degree of higher compared with 13% of the population of Greater Geelong and 18% of the population of Victoria.
- The local area certificate level qualification rate is similar to the municipal and State averages.
- Most of the local population (78% in 2006) holds no qualification or the qualification was not stated.
- The skills and labour force profile in Corio and Norlane translates into a lower income population. In 2006, the median household weekly income was $780, which is 25% lower than the Greater Geelong average and 33% less than the Victorian average.
- In 2006, the Corio and Norlane workforce held 7,539 jobs, 16 jobs less than in 2001. This static jobs rate contrasts with the significant workforce growth (+2%) across Greater Geelong and Victoria.
- About 45% of Corio Norlane jobs are in manufacturing, compared to 16% for Greater Geelong and 13% for Victoria.
- About 53% of Corio Norlane jobs are in the three major industrial land sectors (that is, manufacturing, transport & storage and wholesale trade), compared to 23% for both Greater Geelong and Victoria.

- Corio and Norlane have an under-representation of service sectors jobs, in particular finance and insurance, property and business services and health and community services which combined comprise 7% of the local economy compared to 24% and 26% for Greater Geelong and Victoria.
- Workforce origin and destination data is reported at the Statistical Local Area (SLA) level. The workforce of Corio Inner SLA (which is broader than the Corio Norlane structure plan area) accessed most of its jobs in the Greater Geelong region. In 2006, approximately 86% of jobs were located in the G21 region and about 14% in other areas, primarily Melbourne.

7.2 Global to Regional Economic Trends

The SGS report *Corio Norlane Urban Renewal Project – Employment and Economic Development Strategy (2009)* identifies the major economic trends that might impact on future economic and industrial development in Corio and Norlane. These are:

- Investment in domestic manufacturing is challenged by global pressures. New investment it is likely to be focused in high end processes that are tending to generate demand for higher skilled as opposed to lower skilled workers. Therefore, future jobs growth in manufacturing is likely to move away from a traditional blue collar base to some extent.
- The global financial crisis has placed further pressure on Australian manufacturers including multi-nationals that are clustered in and around northern Geelong. There is potential for significant continuing jobs losses in the region based on the current economic climate.
- Investment in logistics is expected to continue over time. Logistics is generally a low job density sector based on the amount of floorspace and land consumed per job. Investment in the sector is tending to focus on large scale and hi tech operations which also shifts the skill need towards higher skills as opposed to lower skills. Whilst this sector is relevant to the existing Corio Norlane population, it should not be seen as the only element of an employment strategy for it.
- The ageing of the population may result in a tighter labour market over time in which access to skills becomes an even more important business location decision criteria. Skills is a key driver of business development, especially in sectors like advanced businesses services which are clustered in areas that have access to the best possible skills base. Corio Norlane is currently disadvantaged as a business location in part because of the local skills offer and this may become a bigger issue to non logistics sectors over time.
- On balance, the global to national economic climate and trends presents more downside risk to Corio Norlane than upside.

7.3 Housing Market Analysis

SGS Economics and Planning found in its 2009 report that the boom in general house prices since the mid 1990s has increased house prices in Corio and Norlane over the period 1997 to 2007. However, Corio and Norlane remain relatively affordable in relation to the other areas.

The gap in absolute median house prices between the two suburbs and the Greater Geelong and Victorian average increased between 1997 and 2007. This in part relates to the fact that stock in the study area suburbs has not undergone significant renewal and thus presents to market as low quality accommodation. A similar pattern (to house prices) was observed in unit / apartment price data.

Data on the number and value of building approvals provides an indicator of investment interest and activity. The SGS review of residential building approval figures showed that the northern Geelong region is not winning its share of new housing investment. This is a reflection of the fact that most new housing development areas are in south-western Geelong.

The Corio Inner SLA represents about 23.6% of the Greater Geelong economy and accommodates about 28.0% of the municipal population. It is capturing about 17% of building approvals and about 14% of the value of approvals.

Table 11 - Corio Inner-SLA's Share of Municipal Building Approvals and Value (Dwellings)

Number of Building Approvals - % of Greater Geelong							
	2001	2002	2003	2004	2005	2006	2007
Corio - Inner							
New houses	18.6%	16.3%	16.7%	16.5%	17.2%	21.3%	17.1%
New other residential building	9.5%	20.2%	7.5%	6.6%	12.8%	8.1%	18.2%
Total dwellings	17.8%	16.0%	15.4%	15.5%	16.6%	20.0%	17.2%
Value of Building Approvals - % of Greater Geelong							
	2001	2002	2003	2004	2005	2006	2007
Corio - Inner							
New houses	17.0%	14.9%	15.5%	15.2%	14.9%	18.6%	13.7%
New other residential building	7.2%	15.9%	5.7%	4.3%	9.5%	2.8%	11.5%
Alterations	13.0%	13.0%	16.4%	17.6%	9.0%	12.3%	15.4%
Total residential building	15.9%	14.7%	14.5%	14.3%	13.5%	15.6%	13.5%
Non-residential building	45.3%	27.9%	46.6%	44.2%	29.4%	16.4%	14.5%
Total	21.6%	18.3%	25.0%	25.2%	19.6%	16.0%	13.9%

Source: ABS – Building Approvals (Cat. 8731.0)

Of housing developments that do take place in Corio Inner SLA the average value of work is lower than in Greater Geelong and Victoria.

Table 12 - Average Value of building Approvals (Dwellings)

Average Value of Building Approvals							
	2001	2002	2003	2004	2005	2006	2007
Corio - Inner							
New houses	$132,702	$157,906	$166,992	$179,432	$169,261	$184,174	$172,129
New other residential building	$90,722	$108,450	$111,713	$110,756	$119,507	$131,800	$167,235
Greater Geelong							
New houses	$145,384	$172,353	$179,740	$194,523	$195,523	$211,669	$213,729
New other residential building	$120,497	$137,990	$148,054	$167,931	$161,997	$376,609	$264,448
Victoria							
New houses	$154,454	$170,008	$186,056	$199,234	$210,694	$222,401	$237,358
New other residential building	$168,038	$198,255	$188,988	$179,832	$181,317	$216,376	$216,526

Source: ABS – Building Approvals (Cat. 8731.0)

The residential structure of the study area is defined by detached dwellings in a traditional suburban format. Lots are generally sized around 600 m^2 and housing density is in the order of 10 dwellings per hectare.

This type of urban form is problematic for redevelopment because of the difficulty in amalgamating sites to enable large scale redevelopment.

Large developers that deliver master planned estates and bring new product on mass to the housing market are generally unlikely to be interested to a significant extent in the area at this time. Image and property value issues compound the site availability situation.

On this basis, most private housing development is likely to be driven by small developers or owner-occupiers or the State Government. The smaller developers are

unlikely to change the urban form of the area significantly and focus on delivering multi-unit villas, townhouses and dual occupancies over time.

An analysis of the Corio and Norlane housing market by Landlink (*Housing Market Assessment, June 2009*) found that overall, private investment in housing through new dwellings or refurbishment appears to lag in comparison to other areas of Greater Geelong. This finding is consistent with the SGS Economics work discussed above. The Landlink study also shows that from a profitability perspective, developments within the study area, whilst generally of a low end value, are showing comparable returns to other areas of Geelong. Therefore the lack of profitability or adequate returns is not considered to be a major influence on private investment decisions.

The Landlink study concludes that confidence to invest in the area needs to be encouraged. In accordance with established housing policy, particularly relating to urban consolidation and increased housing diversity areas, there is an opportunity for the City of Greater Geelong to actively engage developers and provide specialised advice and assistance. This could take the form of pre-application information, prioritising planning permit applications and coordinating discussions with other interested parties such as the Office of Housing where there are common redevelopment opportunities.

7.4 Retail Analysis

In 2009, Essential Economics was commissioned by Major Projects Victoria to assess and report on existing and potential retail provision in Corio and Norlane and to identify opportunities to maximise business and employment growth. The following overviews the findings of the resulting report *Corio Norlane Urban Renewal Project Retail and Activity Centre Assessment*, August 2009.



Photo 6 – Corio Shopping Centre Aerial View

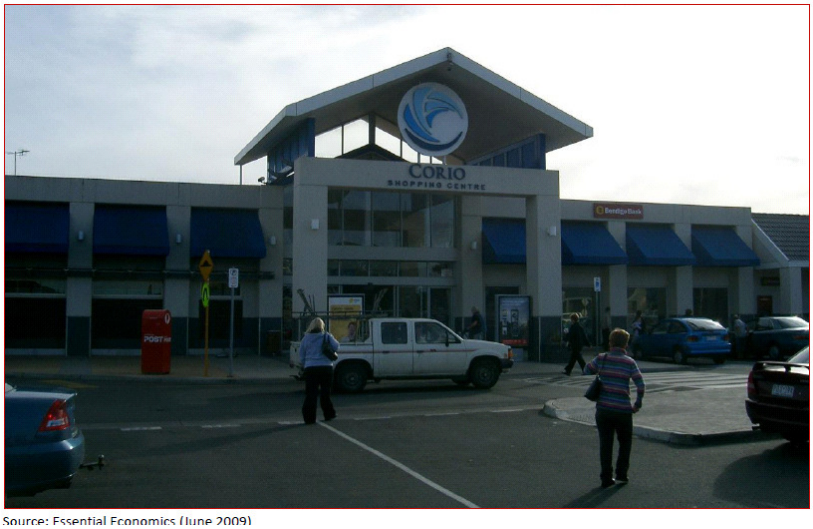
Source: Oblique Aerial Photo taken 2009– City of Greater Geelong

Corio and Norlane includes a network of 19 centres which include the Corio Shopping Centre, Bell Post Hill Shopping Centre and a variety of local centres and convenience stores. In addition, highway based retailing is located along sections of the Princes Highway, including the recently constructed Geelong Homemaker Precinct. These

centres are shown in **Map 11** and described in **Table 13** – Summary of Retail Centres in Corio and Norlane.

The low social-economic profile of the study area and its relatively stable population level represent challenges for retailers and the activity centre hierarchy serving the study area. Overall, Essential Economics found:

- Corio and Norlane are well-catered for in regard to the quantum of retail floorspace provided located in the study area.
- The Corio Shopping Centre dominates the retail market in the study area, accounting for approximately half of the retail turnover generated by study area retailers.
- The study area represents a relatively captive market, whereby escape expenditure is relatively modest for a suburban area. However, escape spending in non-food retail is relatively high, especially in comparison goods
- Having regard for the Geelong Gateway Homemaker Centre and the impact it will have on reducing escape expenditure in the non-food sector, only limited potential exists to further reduce escape expenditure levels.
- Growth in the study area's level of retail spending will generate the potential for retail development in the non-food sectors; only limited potential for development exists in the food, liquor and groceries (FLG), food catering and retail service sectors.
- The dominance of Corio Shopping Centre and its location central to study area residents, indicates there is only very limited potential for the development of further neighbourhood shopping facilities. The emphasis should be placed on upgrading existing small shopping centres, or finding new uses such as other non-retail commercial development, or higher-density residential development.
- The assessment of the development potential in the non-food sector indicates that an opportunity exists for some additional non-food retail floorspace in the study area. This may consist of an expansion of the Corio Shopping Centre to include, for example, a second Discount Department Store, or additional homemaker retail floorspace.



Source: Essential Economics (June 2009)

Photo 7 – Corio Shopping Centre Entrance

Map 11 – Retail and Activity Centres

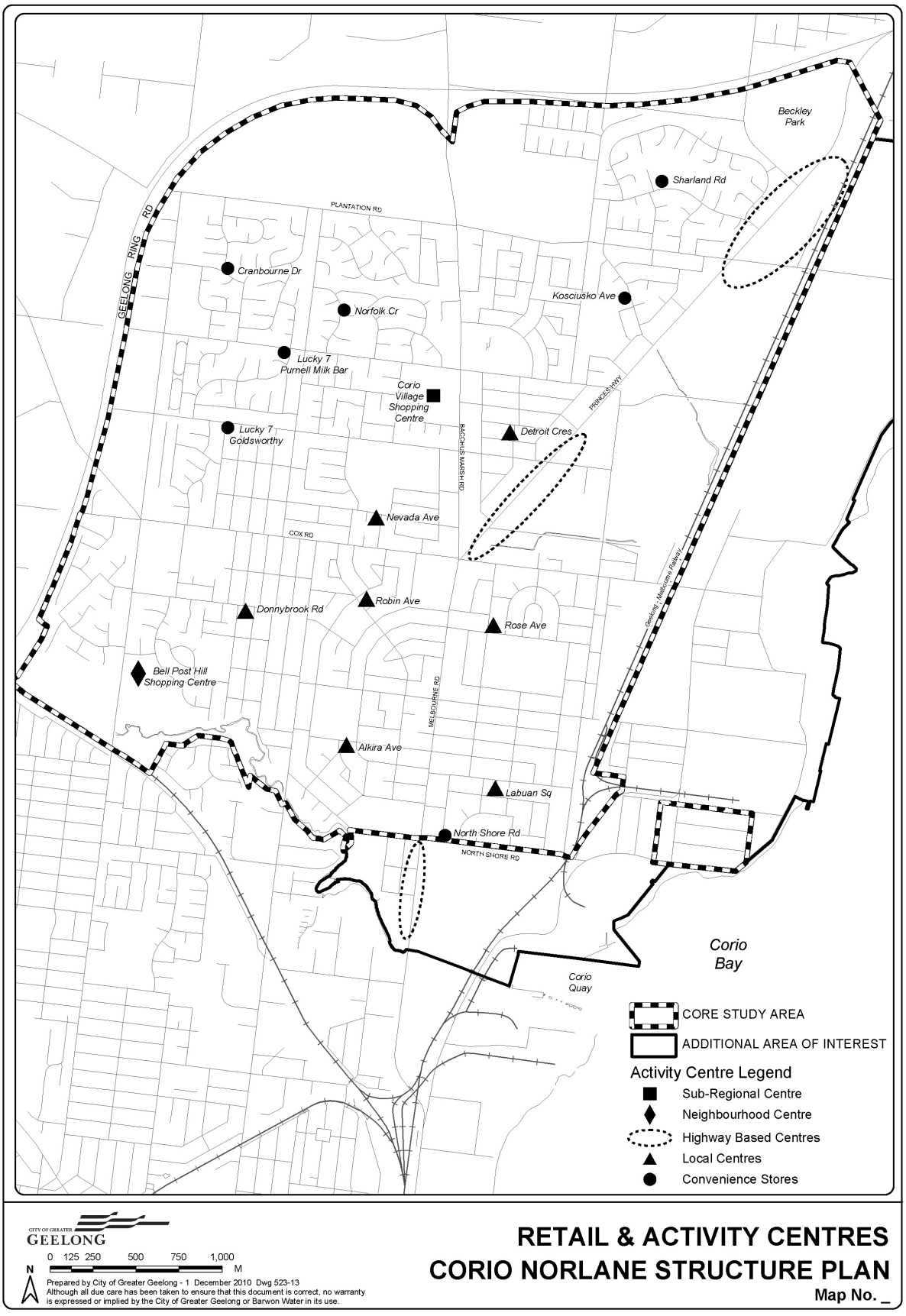


Table 13 - Summary of Retail Centres in Corio and Norlane

Centre	Role	Location	Type of retail & commercial floorspace	Floorspace (m^2)	Issues and Opportunities
Corio Shopping Centre Major retail and community facility in the structure plan area and serves a catchment extending to the north of urban Geelong, including the township of Lara and to the southern structure plan boundary. Centre is trading relatively strongly and benefits from being the only major retail destination located in northern Geelong.	Sub-regional	Good – centre is central to catchment, has a high level of exposure via Bacchus Marsh Road and provides sufficient car parking.	Food Non-Food Services Non-retail **Total**	10,100 15,090 1,160 1,160 **27,510**	Issues • Low socio-economic profile of catchment • Lack of integration with any other commercial use • Limited opportunity to expand • Crime/security Opportunities • Improve integration with community functions • Consolidate sub-regional role • Developing a sense of place "town centre" • Crating a place to attract private investment
Bell Post Shopping Centre Has a history of being a poorly performing centre, however has recently undergone a significant refurbishment and now appears to be trading adequately.	Neighbourhood	Moderate – has physical barriers to catchment (Cowies Creek to south and Geelong Ring Road to west). Provides sufficient car parking.	Food Non-Food Services Non-retail Vacant **Total**	4,050 1,440 470 80 - **5,960**	Issues • Physical barriers to catchment (Cowies Creek to south and Geelong Ring Road to west) • Low socio-economic profile of catchment • Limited population in immediately surrounding area Opportunities • Attraction of tenants that would raise profile of the centre
Princes Highway, Northern Precinct Mix of commercial activities on both sides of Princes Highway, including Aldi, homemaker retailers (Harvey Norman and Bunnings Warehouse) and convenience restaurants (Subway and Hungry Jacks). Includes the recently completed Geelong Homemaker centre. NOTE: On 2 March 2011 the owner of	Highway Precinct	Good – has a high level of exposure to Princes Highway	Food Non-Food Services Non-retail Vacant	5,840 32,790 - 3,200 5,800	Issues • Integration of uses along eastern side of Princes Highway between Geelong Gateway Homemaker Centre and Bunnings Warehouse. Opportunities • Possible redevelopment of recently sold building containing vacant commercial office floorspace (formerly VicRoads), Harvey Norman, Subway and Ultra Tune. • Possible redevelopment of Bunnings Warehouse site,

12-20 Fairbairn Drive, Corio (vacant land to the rear of Aldi) lodged an application with Council to rezone the land from R1Z to B1Z and develop a retail centre on the site.			**Total* (for all highway precincts)**	47,630	with Bunnings planned relocation to north west corner of The Boulevard and Princes Highway.
Princes Highway Central Precinct Relatively scattered mix of commercial uses including Gateway Hotel, Dan Murphy's Liquor Store, McDonalds and KFC convenience restaurants.	Highway Precinct	Good –has a high level of exposure to Princes Highway			Issues • Lack of pedestrian access from west and south. Opportunities • Investigate opportunities to consolidate uses.
Princes Highway Southern Precinct Comprises a range of convenience restaurants including McDonalds, KFC, Subway, Red Rooster and Hungry Jacks. Comprises Adairs, Godfreys and Sydneys homewares/furniture stores.	Highway Precinct	Good –has a high level of exposure to Princes Highway			Issues • Disjointed arrangement of sites. • Poor visual presentation to Princess Highway. Opportunities • Better integration of uses.
Nevada Avenue Corio Benefits from location opposite a school. Currently appears to be trading successfully and performing its role as a provider of day-to-day convenience retailing. Comprises of 5 tenancies.			Vacant Total	 500	Issues • Planned closure of Corio South Primary School in 2012 is likely to negatively impact existing traders. Opportunities • Support continued operation. May require some redevelopment after school closure.
Detroit Crescent Corio Located opposite a small park which includes children's play equipment and a public toilet. Comprises of 12 tenancies.			Food Non-food Services Vacant Total	560 170 200 320 1,250	Issues • Catchment constrained by the Princes Highway, Bacchus Marsh Road and Purnell Road and by Corio Shopping Centre located 300 metres to the west. • Limited opportunity for any new major residential development to increase catchment numbers. • Unlikelty that centre could support its current provision of retail floorspace in the future. Opportunities • Needs redevelopment, possibly including some limited commercial floorspace, high-density housing or community uses.

Robin Avenue, Norlane Fully tenanted strip-based centre with ten tenancies including a Foodworks supermarket, Bottlemart liquor store, milk bar, butcher, fruit and vegetable store and two takeaway outlets.	Local Centre	Moderate – centre is central to catchment, has a moderate level of exposure via Robin Avenue and nearby school. Sufficient car parking.	Food Non-food Services Vacant Total	1,220 230 90 - 1540	Issues • None, providing the centre can maintain its tenancy mix. Opportunities • Support continued operation.
Labuan Square, Norlane Poorly performing centre suffering from a limited catchment of 1,500 residents. Comprises 20 tenancies including a small independent supermarket and a pharmacy.	Local Centre	Poor – located on a quiet street with limited exposure. Significant constraints to the catchment (Princes Highway, railway line and industrial areas).	Food Non-food Services Non-retail Vacant Total	970 770 220 200 470 2630	Issues • High vacancy rate, low quality of tenants. • Catchment limited by Princes Highway, railway line and Rose Avenue local centre to the north. • Design no longer meets modern retail standards. • Population base insufficient to support the exiting levels of floorspace. Opportunities • Rationalise amount of leasable floor space. • Redevelop to comprise a small number of convenience shops with balance of site sue for other uses, possibly higher density residential or community uses; or • Redevelop this centre and Rose Avenue and establish new local centre in a location that is central to the catchment (eg Sparks Road).
Rose Avenue, Norlane Strip based centre comprising seven tenancies. Located opposite Norlane RSL Club and Windsor Park.	Local Centre	Poor – located on a quiet street with limited exposure.	Food Services Vacant Total	390 100 290 780	Issues • Suffers from a limited catchment and having limited exposure to passing trade. • Vacancies likely to continue in current role and format. Opportunities • Rationalise amount of leasable floor space. • Redevelop to comprise a small number of convenience shops with balance of site sue for other uses, possibly higher density residential or community uses; or • Redevelop this centre and Labuan Square and establish new local centre in a location that is central to the catchment (eg Sparks Road).

Donnybrook Road, Norlane Strip based centre comprising ten tenancies including milk bar, bottle shop, butcher, fruit and vegetable store and three takeway food shops. Captures trade from passing traffic along Donnybrook Road.	Local Centre	Good – centre is central to catchment, has a high level of exposure via Donnybrook Road and provides sufficient car parking.	Food Services Vacant Total	1130 210 310 1650	Issues • Should be given opportunity to continue to serve the role it is currently serving. • Would benefit from anchor tenant, such as a mini-supermarket. Opportunities • Would benefit from anchor tenant, such as a mini-supermarket. • Maybe a possible location for community uses.
Alkira Avenue, Norlane Local strip centre comprising 11 tenancies.	Local Centre	Poor – located on a quiet street with limited exposure.	Food Non food Vacant Total	560 220 710 1470	Issues • Struggling to maintain commercial viability • Limited catchment due to location on a quiet street. • Excessive floorspace area relative to centre's function role. • Limited potential for retail business to successfully trade from this location. Opportunities • Needs redevelopment, possibly for residential use.
Various Convenience Stores Sharland Road, Corio Norfolk Crescent, Corio Cranbourne Drive, Corio Lucky 7 Purnell Road, Corio Lucky 7 Goldsworthy , Corio Kosciusko Avenue, Corio	Convenience Stores				Issues • None, the network of Corio convenience stores appears to be working well at presents in terms of meeting the convenience oriented needs of local residents. Opportunities • Support continued operation.

7.4.1 Key Issues for Retail Sector

Essential Economics identified the following key issues for the retail sector:

Poor performance and presentation of local centres: The study area comprises seven local centres which, with the exception of the Donnybrook Road, Robin Avenue and Nevada Avenue centres, present poorly and are not trading successfully. Reasons for this include:

- Location - Local activity centres rarely perform well when located on local streets with limited access and exposure to passing traffic.
- Limited catchment sizes - The catchments for many of these centres are constrained by physical barriers including major roads and railway lines, and the close proximity of other centres serving a similar function.
- Limited investment - Only modest investment has been made in these centres in recent times. Many tenancies in these centres are understood to be unencumbered by finance, and therefore owners become "passive investors" and have little incentive to improve the appearance of their tenancies.
- Poor appearance - The centres are generally characterised by vacant tenancies, graffiti and low levels of amenity. This contributes to a negative perception of the Corio Norlane area to non residents and inhibits the ability of the area to attract private investment.

Fragmentation of ownership among local centres: Ownership of most centres is highly fragmented. Thus, a coordinated approach among owners to improve these centres is likely to be difficult to achieve.

Limited hierarchy of centre types: The study area has a poorly developed hierarchy of centres. The Corio Shopping Centre is the dominant retail centre serving the study area, while the Bell Post Shopping Centre is the only alternative location which provides comprehensive supermarket shopping facilities and some limited fresh food specialty shops. The stand alone Corio Aldi provides a limited range of discount groceries, while the balance of the centre hierarchy is dominated by the range of small local centres and stand along convenience stores and the highway based retail on the Princes Highway.

The consequence of this poorly developed centre hierarchy is that study area residents have limited choice for weekly grocery and other shopping needs other than standard day-to-day convenience items. This limits both choice and competition for shoppers living in the study area, as well as reducing the convenience and accessibility to relatively basic grocery and other slightly higher-order shopping needs (such as fresh food specialty shops, low end apparel shops, etc…).

Typically, neighbourhood centres (incorporating a major supermarket as the anchor tenant and supporting specialty shops) are an important part of any centre hierarchy in suburban areas of Australia. Bell Post is the only neighbourhood centre in the study area, yet this centre's location means that it does not serve a large proportion of study area residents. In addition, the centre trades at modest levels and only provides a relatively limited range of specialty shops and other non-retail facilities for a centre of its type.

Security: Security of customers and stock is understood to be a major issue impacting the performance and perception of activity centres in the study area.

Residential densities: In general, the residential densities in the study area are not at a level which would support the number of local centres which currently exist. In principle, together with location attributes (such as exposure and access to passing traffic), a catchment of at least 1,000 residents within 400 metres is required to generate a critical

mass of customers to support a successful local shopping strip. The residential densities surrounding a number of local centres in the study area are well below this benchmark.

Lack of community focus for the study area: The study area lacks a community hub, a place where residents undertake a variety of activities including shopping, banking, visiting health practitioners, undertake other commercial activities, participate in leisure and recreational activities, and visiting community facilities and services. To a limited extent, the Corio Shopping Centre and the surrounding streets currently perform this role. However, the integration between these activities is not strong, and the precinct does not create a sense of identify for the Corio Norlane community.

7.4.2 Key opportunities identified for the retail sector

Essential Economic identified the following opportunities to uplift the retail sector in Corio and Norlane:

Improve integration of Corio Shopping Centre with community functions

Potential may exist for improved integration of Corio Shopping Centre with a range of community and other non-retail functions on land to the west and south of the centre. Barwon Heath occupies a pad site on the south-eastern potion of the centre car park and is understood to be planning to relocate to a new site. Potential exists to redevelop this site in a manner that integrates with the Corio Shopping Centre.

Consolidate sub-regional role of Corio Shopping Centre

Together with improved community integration, opportunities for Corio Shopping Centre to consolidate its sub-regional role may exist with the development of leisure/recreational facilities and additional retail stores. However, the centre is subject to physical constraints which may make this expansion difficult. (This opportunity was also identified for the centre by Essential Economics in the *City of Greater Geelong Retail Strategy 2006*.)

Support commercial activities by increasing residential densities

An opportunity exists to support activity centres in the study area by encouraging higher density residential development in the surrounding areas, particularly in those areas which are located in close proximity to activity centres. Any proposed increase of residential densities around activity centres would be dependent on the ability for new development to meet other objectives relating to the function of neighbourhood (eg. safety, connectivity, walkability, open space, etc…).

Redevelopment of under performing centres in poor locations

A number of local centres are under-performing and are unlikely to experience any significant improvement in the future unless there is direct intervention. Due to the increasingly competitive market for convenience retailing, it is important that local centres have a critical mass of residents in close proximity, and that their location and design meet an appropriate set of criteria.

Encourage multi-use visits to local centres and convenience stores

Providing for multi-use visits to local centres and convenience stores assists in improving the attraction of a centre. For example, a local centre becomes a more attractive destination if a person can undertake a variety of activities in the one location such as buying bread and milk, take-out money from the ATM, post mail before picking the kids up from school, child-care, dance ballet classes, etc.

This may involve locating community uses adjacent to centres (or centres adjacent to community centres) and/or providing ancillary uses such as a mail box, ATM (internal to a shop) and Tattslotto agent in the centre.

Creation of a Corio Norlane Traders Association

The creation of an association(s) of traders in the Norlane and Corio area would provide business operators/owners with a forum in which they can address issues associated with doing businesses in the area. For example, addressing crime and security issues, centre appearance and amenity, marketing, and so on. This initiative may involve the creation of a single organisation for the whole area, or separate organisations representing the interests of individual centres (subject to the interest of traders and property owners).

7.4.3 Supportable Retail Floorspace in the Study Area

Essential Economics undertook a broad-based assessment of the potential for retail floorspace development in the study area until 2019. The assessment recommends the amount of additional retail floorspace which could be supported in the study area subject to appropriate development of an efficient and accessible retail hierarchy which meets market demand. The retail floorspace forecast does not reflect a prescriptive development target, but is intended as a guide to activity centre policy in the study area.

Factors which have been considered in this assessment include:

- Existing retailers in the study area will continue to achieve a similar market share of resident retail spending to that which they are currently achieving, that is, approximately 70%.
- The average trading levels of existing retailers will increase by approximately 1% pa for food catering, non-food and service retailers. Due to limited population growth in the study area and limited forecast growth in per capita FLG spending, the average trading level of existing FLG retailers in the study area has been assumed to remain constant.
- The development of approximately 19,050m^2 of homemaker retail floorspace at the Geelong Gateway Homemaker Centre (recently completed) will increase the overall level of market share (and reduce the level of escape spending) achieved by study area retailers. An assessment of the potential turnover, market share and impact on average overall trading levels has been incorporated into the analysis.
- As a result of the above factors, the share of retail spending escaping the trade area is forecast to decline from 30% in 2009 to 24% in 2019.

Based on the above factors, potential exists for the development of approximately an additional 7,000m^2 (rounded) of retail floorspace in the study area, over and above the existing and planned level of floorspace. This figure represents the amount of additional retail floorspace which could potentially be supported in the study area, subject to the provision of appropriate retail development, and does not reflect a development target which must be achieved.

The majority of development potential is in the non-food retail category, where potential exists for approximately an additional 6,000m^2 of floorspace by 2019 (rounded total). Only limited potential exists for the development of FLG, food catering and retail services floorspace, reflecting the sufficient amount of floorspace currently provided in the study area. However, the quality of some of this existing food and services-related floorspace is not of an acceptable standard in terms of contemporary retailing.

7.4.4 Future of Corio Town Centre

The *Community Infrastructure Analysis for Corio and Norlane* undertaken by Collaborations, David Lock and Associates and PER Architects (2009) identifies Corio Shopping Centre as a central hub for commercial activities and public transport within Corio and Norlane. However, the report notes that there is a limited number of community and civic functions integrated into the precinct.

During the consultation phase of the project, considerable support was established for redevelopment of the shopping centre as a 'heart' for the wider community, embracing a broader range of community and civic functions, including the recently developed trade training centre and planned public transport upgrades.

The project recommended that a structure plan be prepared for the centre based on the following preferred characteristics and design objectives.

Preferred Character

- The preferred character for Corio Town Centre precinct is for a diverse, mixed use, street based and vibrant neighbourhood activity centre that is multi-faceted rather than mono-faceted.
- High quality new development that supports a high quality pedestrian environment and is well integrated with the community it serves.

Design Objectives

- Enhance the mixed character of the precinct through encouraging the co-location of facilities.
- Promote the location of a broad range of land uses, including community, health and medical and employment generating uses within the centre.
- Ensure an appropriate public private interface where development relates positively to adjacent streets and public spaces and protects the amenity of the streets.
- Ensure the design of car parking facilities and access areas is safe, practical, attractive and does not dominate the public realm.
- Orientate development towards public transport and active transport access.
- Create a permeable and legible internal street network that promotes non-vehicular based transport.

The project identified a number of functional priorities for the study area including:

- Improved library access and facilities.
- Youth programs and opportunities.
- Post compulsory education and lifelong learning.
- Cultural activity and expression.
- Space for service delivery, particularly primary health.

The project involved preparation of concept plans to show how the Corio Shopping Centre could be linked to the Water World site. These sites and intervening land would effectively operate as a broad 'town centre'.

The core design elements of the concept plans include:

- A new town square fronting Bacchus Marsh Road;
- Orientation of buildings to streets;
- Enhanced landscaping;
- New community infrastructure functions including potential relocation of the library and service delivery functions.

The concepts plans provide a starting point for detailed structure planning for the broad area surrounding the shopping centre.

7.5 Industrial Analysis

7.5.1 Industrial land in the structure plan area

Industrial land use dominates the eastern part of the structure plan area. This includes the Industrial 1 zoned land between the Princes Highway and the Geelong-Melbourne railway line and the Industrial 3 zoned land between the highway and the railway occupied by the Geelong Homemaker Centre (see **Map 4**). The Industrial 1 land is the area common to the Corio Norlane Structure Plan area and the Geelong Port Structure Plan.

An additional area of industrial zoned land (Industrial 2) is located on the southern edge of the structure plan area. Planning permission was granted for this land to be developed as a Bunnings Warehouse store in 2010. If developed for the purpose, an alternative zone should be considered for this site that is better matched to its bulky goods retailing use. Application of a Business 4 Zone would be consistent with other land contained in this highway based retail precinct.

Whilst not in an industrial zone, the other established 'industrial' land within the study area is the MC Herd Abattoir located on the west side of Bacchus Marsh Road, north of Plantation Road. This site is currently zoned "Farming". The MC Herd Abattoir is one of Australia's largest meat processors providing approximately 200 local jobs. Its continued operation in its current location is strongly supported by Council and the Department of Business Innovation.

Future planning for industrial land in the structure plan area needs to be cognisant of constraints imposed by interfacing residential land. This has already been taken into consideration in the planning principles established for industrial interface land in the Geelong Port Structure Plan.

The structure plan area has limited opportunities to modify or intensify use of industrial land to generate new employment for residents in Corio and Norlane. However, the area is located in close proximity to a number of significant areas of industrial land and could take advantage of employment opportunities generate by the planned development of the Geelong Ring Road Employment Precinct (GREP), Avalon Airport and the Lara Intermodal Freight Activity Centre.

7.5.2 Geelong Ring Road Employment Precinct (GREP)

The GREP is the largest industrial precinct in the Geelong Region having a land area of approximately 500 hectares. It is the region's primary location for large, value adding manufacturing operations, particularly businesses that produce goods for export and those that have a strategic relationship with the Geelong Port.

The estate is considered by Council and the State Government to be of genuine state significance. It offers direct accessibility to the Geelong Ring Road, Princes Freeway, major rail lines, Avalon Airport and the Geelong Port.

Council owns approximately 130 hectares of land in the GREP, with these holdings in relatively large agglomerations. The remainder of the estate is in private ownership. Approximately one third of the estate is currently developed.

Further development of GREP is anticipated to provide significant job opportunities with up to 10,000 jobs. This is significant given the proximity of Corio and Norlane to the area and the levels of unemployment within the Corio and Norlane community.

7.5.3 Avalon Airport

The Avalon Airport leasehold was purchased from the Commonwealth Government by Linfox in 1997. The land is still owned by the Commonwealth. At present, around 1,300 people are employed full-time at the airport with hundreds more in downstream industries supporting Avalon's operations.

Avalon is a Qantas location for the maintenance and servicing of B747 aircraft. In conjunction with these aircraft maintenance activities, Avalon is seeking to expand its domestic operations and to include international passenger operations. Avalon is also the site of a biannual international airport, most recently held in March 2011.

The following government commitments are relevant to the future of Avalon:

- State Government will continue to support Avalon Airport as the host of the Australian International Airshow until 2015.
- Federal Government will support Avalon Airport's plan to establish International passenger operations at Avalon Airport.
- State Government has committed $50 million for the design, planning, land acquisition and preliminary construction works of a rail link to Avalon Airport (total estimated cost at $250 million).
- The State Government has committed $3 million for new aviation fuel pipeline from Avalon Airport to Shell Geelong.
- Avalon Airport is bidding against Tullamarine and Essendon Airports to establish Victoria's premier aviation training academy.

Like the GREP and the Port of Geelong, Avalon Airport is a nearby source of employment for residents of Corio and Norlane.

7.5.4 Port of Geelong

The Port of Geelong is the second largest port in Victoria and in the year to 30 June 2010, the port handled a total of 8.4 million tonnes of cargo. Geelong Port provides a key resource in the regional economy of Geelong and its hinterland, servicing primary and secondary producers in and around Geelong as well as parts of western Metropolitan Melbourne. The port provides discreet functions according to the facilities provided including berthing of vessels for:

- liquid bulk at Refinery Pier;
- dry bulk focus at Lascelles Wharf (with some liquid dangerous goods piped to Incitec- Pivot site);
- dry bulk and break bulk at Corio Quay; and
- grain and other dry bulk at Graincorp Pier.

The Department of Transport is to conduct a feasibility study into relocating the export and import of cars to the Port of Geelong. The study will commence in March 2011 and is expected to be completed by December 2011.

The Industrial 1 zoned land bounded by Station Street, Harper Road, Princes Highway, School Road and the railway line south to North Shore Station is common to the Corio Norlane Structure Plan and the Geelong Port Structure Plan 2007.

The *Geelong Port Structure Plan* directions relevant to the port land within the study area include:

- Maintain land forming part of the Shell refinery (west of the rail line) as a landscaped buffer area having regard to the sensitive residential land uses west of the Princes Highway and the role of the highway as the main gateway to Geelong.
- Consider rezoning the 'industrial interface land' south of St Georges Road between Station Street and the railway line to Industrial 3 to better protect residents abutting this area without limiting the core activities of the Port.
- Consider rezoning the industrial interface land not used for port related uses west of Seabreeze Parade from Industrial 2 Zone to Industrial 3 Zone to better protect residents abutting this area without limiting the core activities of the Port.
- Investigate options to improve safety and function of the intersection of North Shore Road and Station Street.

The *Geelong Port Structure Plan* was prepared by Council in parallel with a wider Victorian Government strategic framework for the future development and operation of the state's transport system. This framework includes the *Victorian Transport Plan* (VTP) and *Freight Futures – Victorian Freight Network Strategy*, as well as port related policies and strategies in Port Futures.

In this context, GeelongPort and the Department of Transport have prepared *the Port of Geelong – Port Land Use Strategy 2009* which is complimentary with the *Geelong Port Structure Plan* and also includes land common to the study area.

Figure 19 shows the strategic land use plan from the *Port of Geelong – Port Land Use Strategy (PLUS) 2009.*

7.5.5 Lara Intermodal Freight Activity Centre

A 774 ha property between Lara and Little River opposite Avalon airport has been identified as a potential site for an intermodal freight interchange.

A report by Meyricks-GHD (2007) identifies the need for an intermodal freight terminal in the Geelong region and confirms the Lara site as the preferred location.

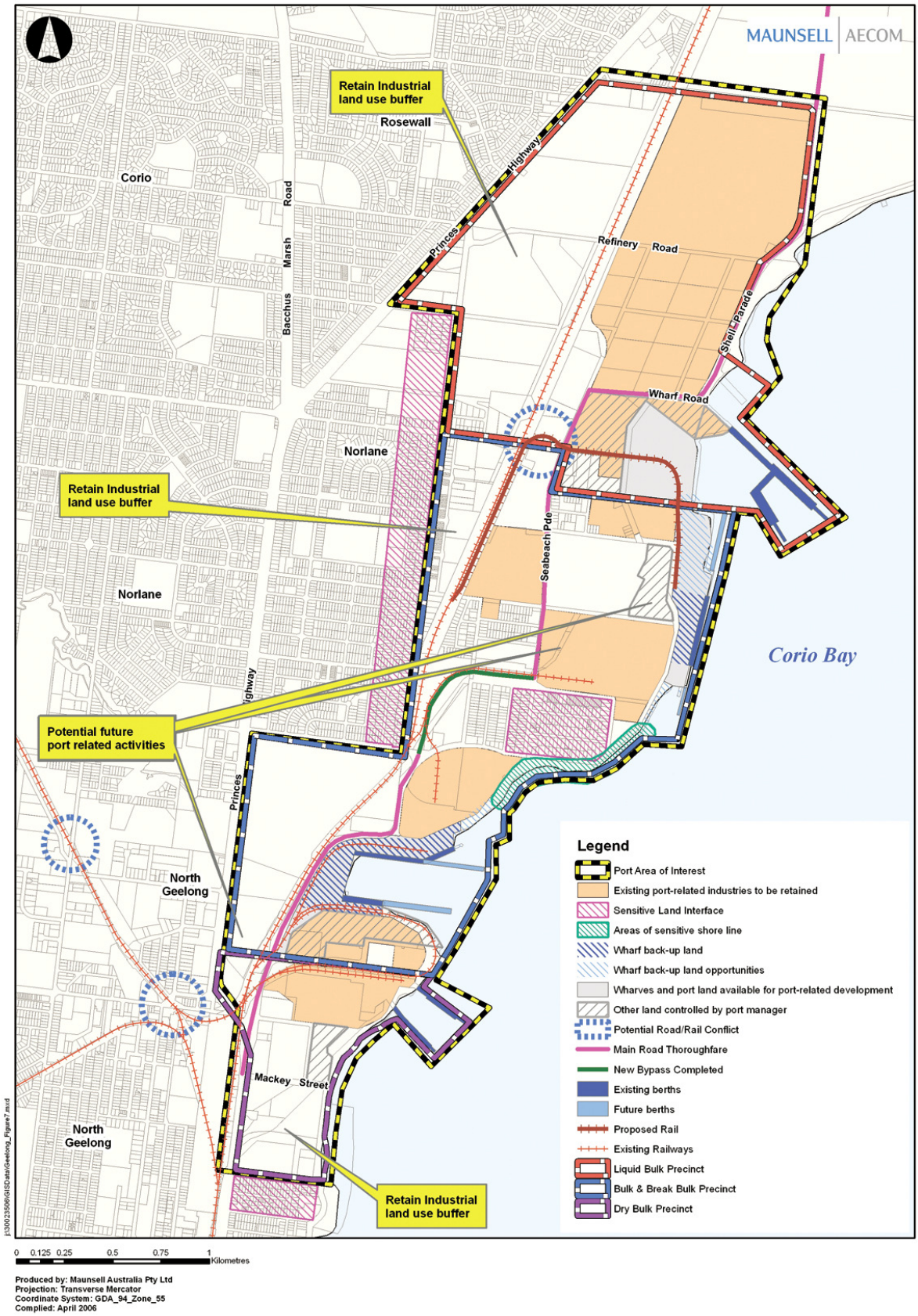
The site is in a strategic location with the Princes Freeway and Avalon Airport directly to the south; the Port of Geelong 10 km away by road and rail and the Port of Melbourne 41 km away by rail. The site has an interface with the existing rail lines between Melbourne and Geelong and road frontage to Old Melbourne Road.

The long term vision is for the combination of an intermodal freight terminal, freight and logistics hub support services and industrial uses.

The facility would allow the modal interchange of freight. This interchange could occur between rail users of different rail gauges; rail users to road users and vice versa; and between road users of different types, for example, the transfer of freight from large B-doubles or road trains originating from regional or interstate destinations to smaller trucks with final destinations in metropolitan Melbourne or Geelong.

A planning scheme amendment (C175) proposes to rezone the site from the Farming Zone to a Special Use Zone.

Figure 19 – Port Strategic Land Use Plan – Port of Geelong: PLUS



7.6 Key Influences – Economic Development

Workforce

- Corio and Norlane are not participating in the strong population and jobs growth currently experienced across the Geelong region.
- Corio and Norlane have a low skills and income profile in comparison to the Greater Geelong and Victorian populations.
- Ongoing economic restructuring affecting manufacturing is likely to continue to disproportionately hurt the Corio and Norlane community.
- The jobs base of the wider economy is in part moving away from the skills profile of the Corio Norlane community.

Housing

- Corio and Norlane remain relatively affordable residential locations in relation to the other areas of the Geelong region however the area is not winning its share of new housing investment.

Retail

- The prosperity of retail centres across Corio and Norlane varies markedly, with some centres thriving while others have high vacancy rates.
- Potential may exist for improved integration of Corio Shopping Centre with a range of community and other non-retail functions on land to the west and south of the centre.
- Opportunities may also exist for Corio Shopping Centre to consolidate its sub-regional role through the development of leisure/recreational facilities and additional retail stores, subject to resolution of physical constraints.
- A number of under-performing local centres are unlikely to experience any significant improvement without intervention to address their presentation and function.
- Encouraging higher density residential development in proximity to activity centres could support improved performance of these centres.

Industrial

- Planning for use of the industrial land within the study area was undertaken as part of the *Geelong Port Structure Plan*.
- Industrial land surrounding the structure plan area is identified as a key precinct that will provide a foundation for Geelong's economic development. This precinct includes a national transport and logistics hub comprising Avalon Airport, the Geelong Port, major interstate road and rail connections and a proposed inter-modal freight terminal. Employment opportunities available in the precinct may benefit residents in Corio and Norlane.

8.0 Social Infrastructure

8.1 Local Community Services and Facilities

8.1.1 City of Greater Geelong Facilities

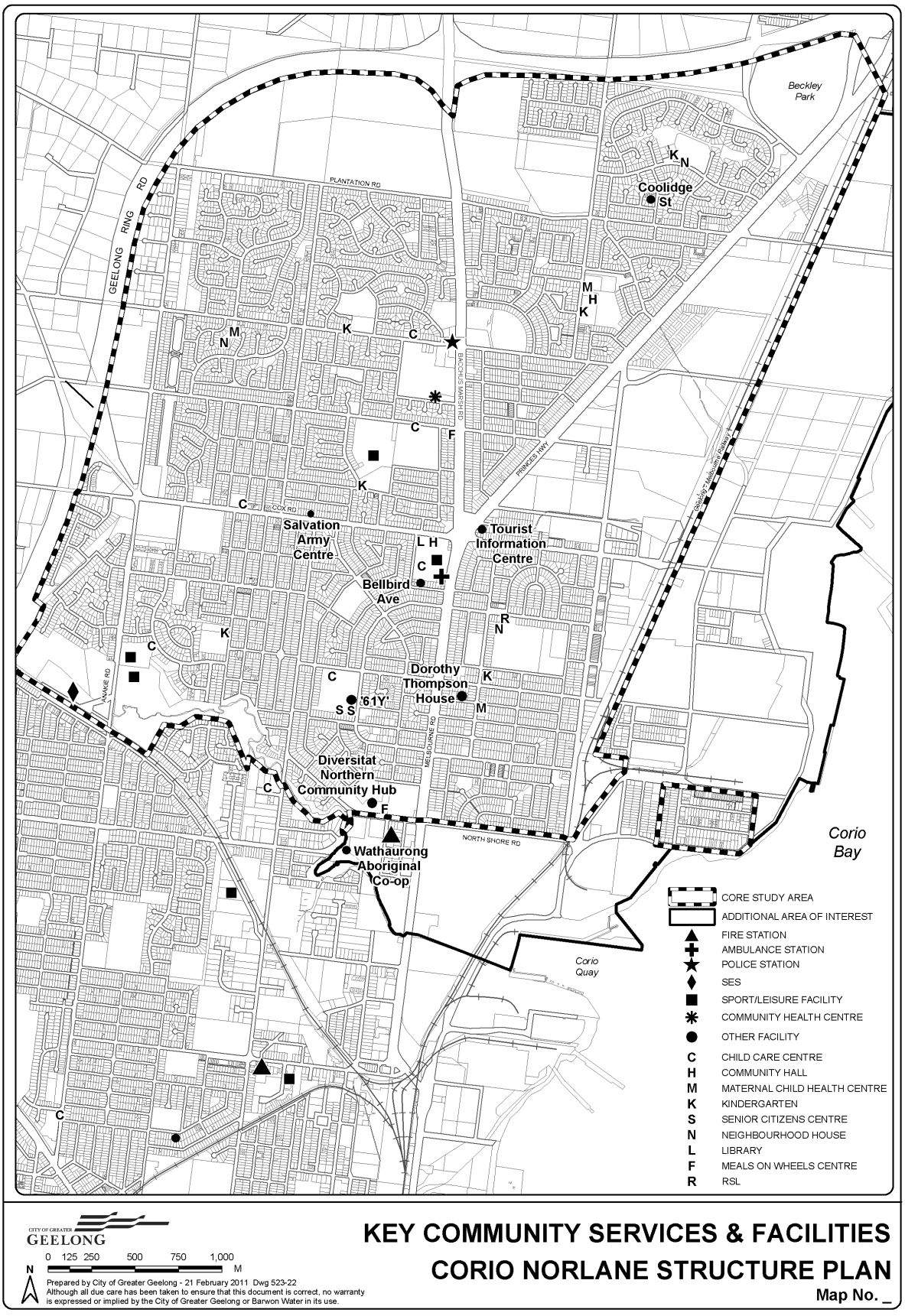
Corio and Norlane contain a range of Council community service infrastructure including childcare, preschools, libraries, neighbourhood houses, youth facilities and community halls. These facilities are described in **Table 14** below and shown in **Map 12** on the following page.

According to the City of Greater Geelong Community Services Department many of these facilities are now ageing and under-achieving in meeting community and service needs.

Table 14 – City of Greater Geelong Community Facilities

Facility	Address	Suburb	Services
Cloverdale Community Centre	167-169 Purnell Rd	Corio	Neighbourhood Houses
Coolidge St Community Space	5 Coolidge St	Corio	Other (some leased to groups)
Corio Child Care	116-120 Purnell Rd	Corio	Child Care Centres
Corio PreSchool	152 Purnell Rd	Corio	Kindergartens / Preschools
Corio	22-34 Hendy St	Corio	Maternal & Child Health Care Centres
Corio Meals on Wheels	59 Bacchus Marsh Rd	Corio	Meals on Wheels
Corio West MCH	167 Purnell Rd	Corio	Maternal & Child Health Care Centres
Hendy St Hall	Hendy Street	Corio	Minor Halls
Rosewall Kindergarten (destroyed by fire)	Sharland Rd	Corio	Kindergartens / Preschools
William Hovel PreSchool	28 Hendy Street	Corio	Kindergartens / Preschools
Rosewall Neighbourhood Centre	36 Sharland Rd	Corio	Neighbourhood Houses
The fOrT	Stead Park (old Info Centre building)	Corio	Youth drop-in Centre
Centenary Hall	Corner Cox & Melbourne Roads	Norlane	Halls
Corio Library(John Drysdale)	Cox Rd (cnr Moa St)	Norlane	Libraries
Norlane MCH	32 Plume St	Norlane	Maternal & Child Health Care Centres
Norlane Community Centre	Rose Ave	Norlane	Neighbourhood Houses
Norlane RSL	29-31 Rose Ave	Norlane	RSL Buildings
Norlane West MCH	9-41Sparks Rd	Norlane	Maternal & Child Health Care Centres
Trudy Moritz Early Learning and Care, Norlane	9-41 Sparks Rd	Norlane	Child Care Centres
Yooringa Seniors and Community Centre	Yooringa Ave	Norlane	Senior Citizens
Norlane West	39 Peacock Ave	Norlane West	Kindergartens / Preschools
Norlane / North Shore Kndergarten	11 Gerbera Ave	North Shore	Kindergartens / Preschools

Map 12 – Key Community Services and Facilities



There has been significant investment in community services infrastructure over the past 10 years including:

- Refurbishment of the Norlane Community Centre.
- Refurbishment of the Corio Library.
- Rebuilding of the Hendy Street Hall.
- Upgrades and improvements to childcare and preschool facilities.
- The upgrade of Centenary Hall.
- Funding the DW Hope Northern Community Hub development.

The City of Greater Geelong engaged Collaborations in partnership with David Lock and Associates and Per Architects to research and develop a strategic direction for future community services infrastructure provision in Corio and Norlane. The study specifically examined the role and capacity of family and children's services (childcare, kindergarten, maternal and child health (MCH) and family support programs), community and adult education / neighbourhood houses, library services, local open space, local mobility including walking and cycle paths, community programs and services including older adults and young people, arts and cultural expression, recreational opportunities, community safety and social interaction.

The resulting report titled *Future Dreaming: Community Infrastructure Analysis for Corio and Norlane* (CoGG: 2009) is to be used as a key reference and informing document for Council's priorities, actions and engagement with State and Federal Governments and local communities. The report was adopted by the Geelong Council on 9 November 2010.

Recommendations of the report for the future development of community infrastructure in the study area include:

- Ensuring an ongoing place management approach and community development.
- Revitalisation of local shopping strips including Rose Avenue, Robin Avenue, Detroit Crescent, Labuan Square and Alkira Avenue.
- Development of five key community precincts / hubs to include a mix of family, children, community, health and learning environments at:
    - Norlane West / Evans Reserve – Upgrade family services facilities and consider future location of pre-school, improve senior citizens facility including flexible meeting spaces and links to wider community programs.
    - Corio West / Purnell Road, Cloverdale – Redevelopment of the Cloverdale Community Centre. Future relocation of family services hub to site adjacent to Corio West Primary School including MCH.
    - Corio North / Hendy Street, Rosewall – Redevelopment of the Rosewall Neighbourhood House. Redevelopment of Rosewall Pre-school and Children's Services. Consolidation of services including MCH, pre-school, hall at Hendy Street.
    - Norlane / North Shore – Development of North Shore Children's Hub including pre-school and other family services on Windsor Park Reserve.
- Centrally located facilities at Corio Shopping Centre.
- Improve open space.

- Strategic footpath development.
- Development of a Structure Plan for Corio Norlane.
- Development of the Corio Shopping Centre precinct as 'Town Centre'.
- Improve community transport and active transport linkages.
- Create opportunities for young people through provision of facilities at a regional level.
- Facilitate, support and develop local community services and health services.

The recommendations of the Corio Norlane Community Services Infrastructure Plan aim to provide the City of Greater Geelong with a clear direction in terms of potential expenditure in regards to Community Services Infrastructure in the local area. The Plan takes a longer term view of 10 – 15 years and informs long term resource planning. The Plan will also enable the consolidation of facilities in precincts and the development of flexible multi-functional hubs.

Implementation of the Plan will need to be done taking into consideration other priorities across the municipality and will be subject to ongoing budgetary and strategic review. Funding for Community Services Infrastructure will be focused on seven key pieces of infrastructure:

- Cloverdale Community Centre (Note: a draft *Concept Plan for Cloverdale Community Centre 2010* has been prepared by DLA for the City of Greater Geelong).
- Rosewall Neighbourhood House.
- Family hubs at North Shore, Corio West, Hendy Street and Evans Reserve.
- Future development of central community infrastructure such as the library in conjunction with development of the town centre in Corio.

Table 15 below provides a summary of the *Future Provision of Community Services Infrastructure in Norlane / Corio – Project Overview and Implementation Plan* recommendations.

Table 15 - Community Services Infrastructure Plan Recommendations

At the Local Level

	Theme/Issue	Summary Recommendations	Time Frame
1	**Place Management and Community Capacity Building**	• It is recommended that state and local government identify an allocation of Place Management and Community Development Resources to support an integrated approach to community planning and on-going community involvement in the urban renewal process.	0–2 years
2	**Revitalisation of local shopping strips**	• It is recommended that funding is allocated for the revitalisation of local strip shopping centres utilising the opportunities and guidelines developed during this study to inform local revitalisation initiatives.	0–10 years

	Theme/Issue	Summary Recommendations	Time Frame
3.	**Capacity of Neighbourhood Infrastructure**	• This study has sought to establish a baseline level of community infrastructure in each of the four neighbourhoods defined within the study area. The model for this baseline infrastructure includes space for community programs and activities, space for the delivery of session services (particularly Maternal and Child Health), kindergarten provision and space for informal social interaction. An assessment of each of the neighbourhoods[1] and the current levels of provision leads to the following recommendations:	0–10 years
		Norlane West / Evans Reserve	
		• The relocation and enhancement of long-day care, kindergarten and Maternal and Child Health Services be investigated, with a potential clustering of these services in a Family and Children's Hub either at the Trudy Moritz site or Norlane West Primary School.	Priority 2
		• Upgrading of the Senior Citizen's Centre to include improved meeting space, classrooms, open space and amenities.	
		• Allocation of funding for the refurbished Senior Citizen's Centre to operate a wider range of community programs and lifelong learning opportunities.	
		Corio West / Purnell Road / Cloverdale	
		• Redevelopment of Cloverdale Community Centre to meet neighbourhood infrastructure guidelines, including improved capacity of lifelong learning, technology access, open space and play facilities.	Priority 3
		• The relocation of current long daycare on Purnell Road and the kindergarten (potentially to include occasional care) and the MCH service to consolidated facility and children's hub on Council land adjacent to Corio West Primary School.	
		• Ensure open space access is upgraded for NW Corio.	
		Corio / Hendy Street / Rosewall	
	Capacity of Neighbourhood Infrastructure (cont)	• Upgrading of facilities hall in association with the Primary School redevelopment including minimum neighbourhood infrastructure guidelines (including improved capacity of lifelong learning, technology access, program space, open space and play facilities), investigate the expansion of existing kindergarten and potential inclusion of long-day care in this location.	Priority 4
		• Investigation of a redevelopment of the neighbourhood house functions at Rosewall to a multi campus approach linking with a new community hub at Hendy Street (see spatial guidelines).	
		• Consultations with residents of Rosewall to identify opportunities for redevelopment of local community infrastructure and community enterprise opportunities on the existing site to build on local strengths and needs (e.g. community gardens, men's shed/workshop space, tool hire, and internet café / community kitchen).	
		• Ensure open space provision and amenity is improved through urban renewal program to cater for all ages and	

[1] This assessment is based on the information made available at the time of writing, the allocation of funding for future facility and service provision will need to remain responsive to the dynamic planning environment, including the work of other government and non-government agencies

	Theme/Issue	Summary Recommendations	Time Frame
		needs. • Retain Rosewall Kindergarten in a redeveloped local hub. **Norlane/North Shore** • Proceed with development of North Shore Children's Hub to include complementary spaces as outlined in neighbourhood spatial guidelines for service delivery, kindergarten and community programs. In additional that potential to incorporate long day care facilities be investigated to facilitate equitable access across Corio and Norlane (eg partnership with local industry). The location for this Hub should optimise the relationship with the Primary School, local open space and neighbourhood house. • Upgrade local open space to improve community safety and use by a range of ages and needs. • It is recommended that access to community infrastructure be monitored during the urban renewal process to ensure neighbourhood access is not compromised and to involve communities in determining the re-use of public use sites.	Priority 1
4	**Local Open Space**	• Guidelines have been developed to optimise the use and value of open space. It is recommended that these guidelines be adopted for the redevelopment of existing and the development of new open space within the study area.	0–10 years
5	**Mobility and Access**	• That the City of Greater Geelong undertake a DDA audit of pedestrian and cycling routes/paths/connections. • That any new or relocated facilities are placed along key pedestrian, cycling and public transport routes.	0–10 years

At the Study Area Level

	Recommendation	Revised Recommendations	Time Frame
1	**Role of Corio Town Centre** **Role of Corio Town Centre (cont)**	It s recommended that Council investigate opportunities to integrate community functions in the Corio Town Centre. A number of functional priorities have been identified for the study area, these include: • Improved library access and facilities; • Youth programs and opportunities; • Post-compulsory education and lifelong learning; • Cultural activity and expression; • Space for service delivery, particularly primary health. Notional spatial allocations have been prepared for each of these functional priorities, with the opportunity to integrate all, or some of these functions in a re-developed town centre to optimise community access and use/profile. • It is recommended that the design objectives developed for Corio Town Centre during the course of this project be adopted; • It is recommended that a Structure Plan be developed for Corio Town Centre integrating the commercial and community functions of the precinct and outlining future land-use priorities.	0–2 years

	Recommendation	Revised Recommendations	Time Frame
2	**Library, learning and community enterprise.**	• Improved access to library and educational opportunities have been identified as priorities in the course of this study it is recommended that upgraded library facilities be given priority, including opportunities for lifelong and post-compulsory education in partnership with education providers. The opportunity exists to integrate business enterprise and business support facilities such as low-cost offices and resources. Spatial guidelines have been developed based on an integrated approach to these functions. • It is recommended that opportunities be investigated for the joint funding and development of such facilities, and a service model be developed which facilitates and integrated approach to literacy, learning and employment.	0–10 years
3	**Community Transport and Linkages**	• It is recommended that the viability of a community transport service be investigated linking key local destinations. • Improvements to activate transport be addressed through the Active Transport Strategy currently being undertaken by CoGG. • That Council continue to advocate for improved access to and amenity of public transport. • Develop Bacchus Marsh Road, between the Princess Highway and Corio Town Centre as a pedestrian and cycling linkage.	0–2 years
4	**Opportunities for Young People**	• It is recommended that facilities be provided to meet the needs of young people at the district level. Consideration should be given to co-locating these facilities with other community, commercial and public transport access to optimise their use and profile. Spatial guidelines have been prepared for service delivery and program space to meet the needs of young people.	0–years
5	**Service Delivery Capacity**	• Support improved capacity for the delivery of local services including community health and primary health care either as part of an integrated service delivery component at Corio Town Centre or through the upgrading of existing community health facilities. Spatial guidelines have been prepared for upgrading service delivery capacity for the study area.	0–5 years

8.1.2 Children and Family Services

There are many developments that are directly associated with the Corio Norlane area for the future provision of children's and family services and infrastructure development. Part of these developments are being driven by broader government policy along with local needs. In particular, Corio-Norlane is the focus for major regeneration of local education facilities which will influence a wide range of future service and infrastructure developments in this area. Significant changes to local kindergarten and child care provision are also likely and will impact on where and how services and infrastructure will be developed.

The City of Greater Geelong is currently preparing two plans; the *Municipal Early Childhood Infrastructure Plan* and the *Municipal Early Years Plan* as required by State Government policy. Council's Family Services Unit has, however, untaken considerable work to review the capacity of local kindergarten services to respond to new government

policy initiatives, which includes recent demographic data on the outcomes for young children in Geelong. The comparative indicators for children in the Corio and Norlane area are quite poor.

The recent destruction of the Rosewall Kindergarten and closure of other local schools and kindergarten services in the study area will significantly impact on local service development priorities and development needs in the short term.

8.1.3 Corio Library

In September 2009 the City of Greater Geelong adopted the *City of Greater Geelong Public Library Buildings Development Strategy.* The Strategy identifies the Corio library (John Drysdale Library) as a sub-regional branch supporting mobile libraries and the new Lara library. A review of the facility is recommended in 15+ years. The Strategy provides information about the Corio library on page 23:

The library was originally built in 1972 and recently refurbished in 2005. The building and land is owned by Council. The library is open for 45 hours per week. Current membership is 11,262 and in 2007/08 loaned 209,555 collection items and experienced 146,885 visits. At 1,295m2 the library is the biggest in the network, serves a large catchment area in the northern part of the municipality and is in very good physical condition.

The level of socioeconomic disadvantage in the local catchment served is high. As the only library serving the northern area the physical space standards suggest the library should be expanded by 500m2. This would enable, for example, expansion of community access Internet computers, which is a much needed improvement, given the relatively low rate of Internet access at home in the northern suburbs. Attention could be paid to updating the meeting room spaces to enable access to training equipment and multimedia. This would provide greater level of service to community members and groups and open usage up to a broader range of community activities including training and development.

The library is adjacent to the Waterworld Aquatic Centre, gym and Centenary Hall, maximising the opportunity to provide a community destination incorporating health and wellness with library services. Access for residents with disabilities and prams is adequate with good entrances to the library. Off street parking is available and adequate. Public toilet amenities are also provided. The location away from main street and retail precinct is a disadvantage.

Advice from Council's Community Development Unit is that the long term ambition is to relocate the library to Corio Village Shopping Centre.



Photo 8 – Corio Library

Source: City of Greater Geelong Public Library Buildings Development Strategy 2009

8.1.4 Non-Government Organisations

In addition to the City of Greater Geelong, a number of organisations operate services and facilities in Corio Norlane. These include the *Diversitat* Northern Community Hub (former DW Hope site), KADA Children's Centre, Bellnore Drive Early Learning Centre and the Salvation Army Northside Geelong Community Centre. A diverse range of places of worship and ethnic clubs are also present.

8.1.5 Emergency Services

Emergency services facilities in the study area include the Corio Police Station on Bacchus Marsh Road, Ambulance Victoria on the Princes Highway Norlane and the CFA on Birdwood Avenue Norlane (located in the area of additional interest south of The Boulevard).

8.2 Education Facilities

There is a mix of private and government schools in the study area servicing both primary and secondary students. The schools are shown in **Map 13** on the next page**.**

8.2.1 Government Schools

A significant restructure of the government school system, referred to as the *Corio Norlane Regeneration Project*, is currently being progressed by the Department of Education and Early Childhood Development (DEECD). The existing schools will join together to form a new multi-campus school. The new school will comprise:

Three Prep – Year 8 Campuses

- East Campus (Corio Primary School site)
- North Campus (Corio West Primary School site)
- West Campus (Norlane West Primary School site).

The project also includes the construction of new Library Learning Centres at these campuses.

One Prep – Year 6 Campus

- South Campus (North Shore Primary School site)

One Year 9 – 12 Senior Campus

- Senior Campus (Northern Bay Senior College site). The Senior Campus will include a $10 million Trade Training Centre comprising industry standard building and construction, automotive, engineering, electro technology, hospitality and hairdressing training facilities.

Preliminary master plans for the new multi-campus school are shown on **Figure 20.**

Rosewall Primary School has closed and all buildings have been demolished and removed from the site. Following discussions with DEECD Barwon-South West Region, it is expected that the former school site will be offered for sale in 2011 to the private sector for redevelopment. The City of Greater Geelong own land abutting the site, which includes the Rosewall Neighbourhood House, and have expressed an interest in buying the land on which the Neighbourhood House extension was built. The former school site is strategically located to improve access, surveillance and interface with the surrounding residential, community and open space (particularly Connections Park) areas. A concept plan is to be prepared as part of the Corio Norlane Structure Plan process in the immediate term.

Map 13 – School Facilities

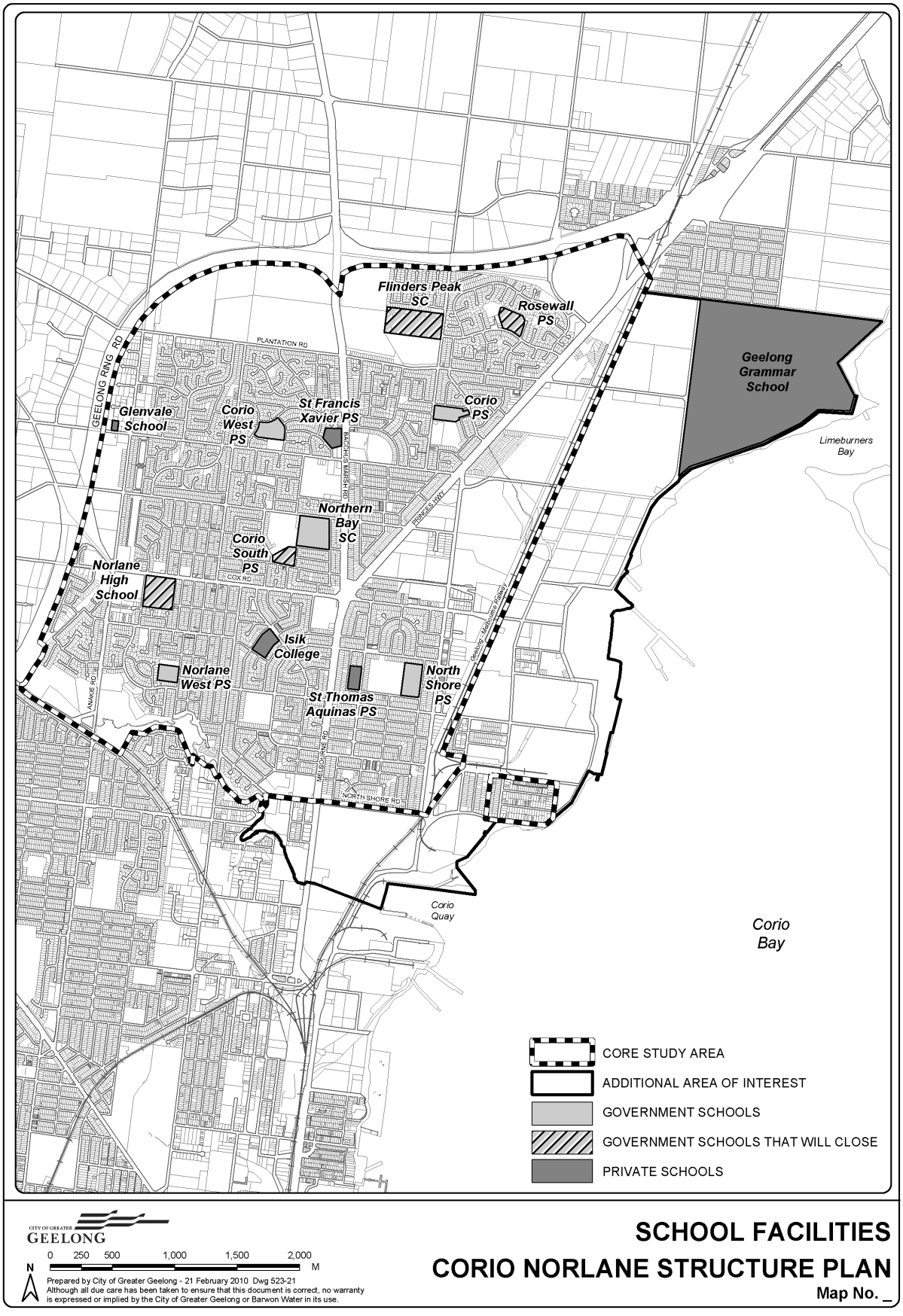
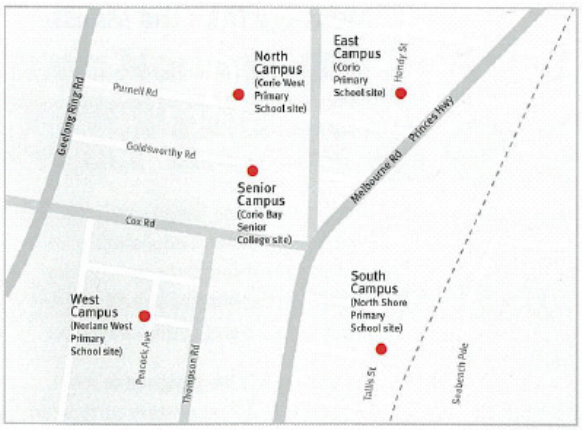


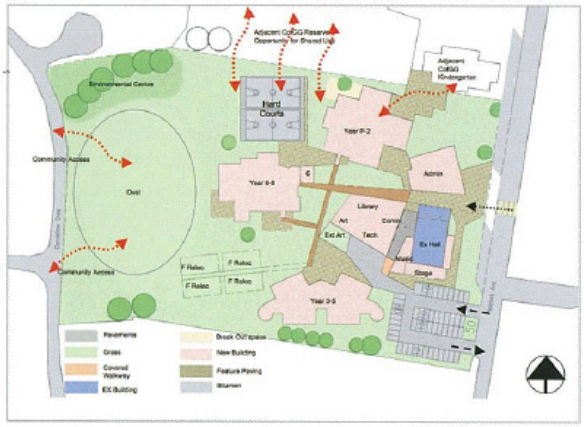
Figure 20 – Preliminary Master Plans for Multi-Campus School

Preliminary Master Plans





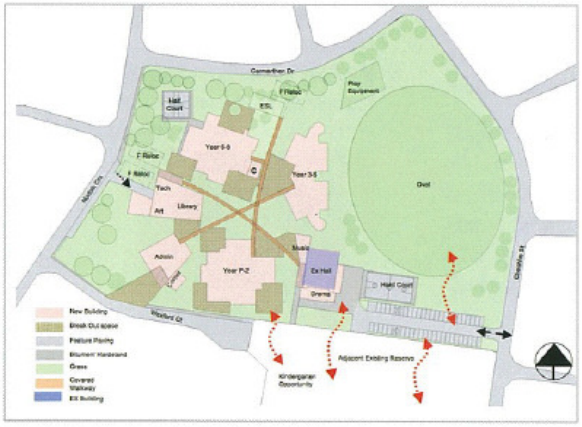
Senior Campus (Corio Bay Senior College Site)
Preliminary Master Plan



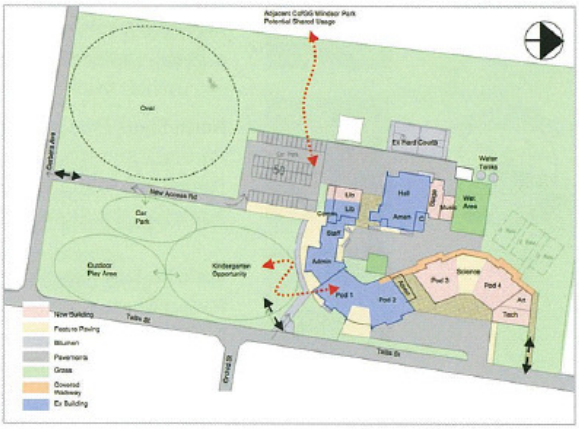
West Campus (Norlane West Primary School Site)
Preliminary Master Plan



East Campus (Corio Primary School Site)
Preliminary Master Plan



North Campus (Corio West Primary School Site)
Preliminary Master Plan



South Campus (North Shore Primary School Site)
Preliminary Master Plan

Flinders Peak Secondary College is to be closed at the end of 2010. The site may not be declared surplus by the Regional DEECD and Barwon Valley Special School are intending to lease the facility for 12 months whilst they undertake restoration works at their other site in Newtown. The Regional DEECD will then consider whether to establish a more permanent special school facility in the northern suburbs, which, via a Notice of Motion at the 14 December 2010 meeting is Council's preferred use. The City of Greater Geelong has expressed interest in purchasing the oval and associated pavilion for a Regional Rugby facility.

Norlane High School is scheduled for closure at the end of 2011. The 6 hectare school site fronts Cox Road and abuts the Geelong Regional Terminal Station to its west and dwellings to its south and east. The land is zoned Residential 1 Zone with buildings located on the front portion and sports ovals located to the rear.

Corio South Primary School is scheduled to close at the end of 2012. The school is popular with high enrolment numbers. The 2 hectare site abuts Goldsworthy Reserve and Northern Bay Senior College to its north and dwellings to its south, east and west boundaries. The site also fronts the Nevada Avenue retail strip which is fully tenanted and trading successfully. According to the Regional DEECD, Barwon Health has expressed a tentative interest in the site though this has not been formalised.

As part of the Corio Norlane Structure Plan charter, concept plans are to be prepared for the Rosewall Primary School, Flinders Peak Secondary College, Norlane High School and Corio South Primary School sites.

8.2.2 Private Schools

There are a number of private schools operating in the study area. These include:

- St. Thomas Aquinas Catholic Primary School, Norlane.
- St. Francis Xavier Catholic Primary School, Corio.
- Glenvale School, Lovely Banks.
- Isik College Geelong Campus, Norlane.
- Geelong Grammar School, Corio (located in the additional area of interest).

8.2.3 Traffic Impact Assessment of School Sites

The Transport and Community Infrastructure Working Group are to assess traffic and parking impacts associated with the *Corio Norlane Regeneration Project*. A preliminary draft report has been prepared by CPG Australia (December 2010).

Key findings include:

- Approximately 52% of Primary School students are driven to school, 37% walk, 10% cycle and 1% arrive by other means.
- All desirable walking / cycle routes both internally and externally should be improved with missing linkage infill (sealed surface) and DDA compliant road crossing points.
- Traffic management solutions should apply to areas where there is a high potential for pedestrian / vehicle conflict, particularly at uncontrolled intersections close to the schools.
- Only about 1% of Primary School students travel by bus, rising to 8% for secondary students.
- The concept master plans for each of the school campuses show adequate on-site parking for staff, according to the 2011 staffing estimate numbers. To cater for expansion into the future, potential overspill parking areas for staff should be identified and kept free of infrastructure.

- Providing sufficient space for the ultimate needs of the drop-off / pick-up activity is considered the primary traffic management and road safety issue for each school's development. All other road safety and traffic management improvement opportunities should be predicated upon the satisfactory addressing of the drop-off / pick-up spatial needs.
- It can be seen that in 2011 and beyond there will be a critical shortage of available drop-off / pick-up parking for both the West and the North campuses.
- All Schools appear to be adequately covered by "Type 1" permanent 40km/h speed zones. Some major roads adjacent to schools have physical measures (traffic calming) applied to reinforce the speed limits. However the speed limit signage in most cases is considered inadequate where physical measures have not been applied.

8.3 Health Services

Barwon Health is the lead provider of health services in the study area and the greater Barwon Region. In addition to the Geelong Hospital, there are five major community health centres located at Corio, Belmont, Newcomb, Torquay and Angelsea.

The Corio Community Health Centre occupies a pad site on the south-east portion of the Corio Village Shopping Centre and provides a range of health services. There is free car parking and bus services available however the Centre is subject to physical constraints in association with the demands on the neighbouring shopping centre. Advice from Barwon Health is that there are preliminary plans to relocate to a new site, potentially the Corio South Primary School site which is to close at the end of 2012.

Barwon Health also operates a youth mental health services centre within the Corio Shopping Centre and an aged care respite centre at the Dorothy Thompson House in Norlane. According to Barwon Health increased demands for dental and special needs care will place greater pressure on existing services in the future.

There are a number of medical centres and clinics within the vicinity of the Corio Community Health Centre, particularly south to Cox Road. Most notable is the Corio Medical Clinic, located on the corner of Cox Road and Bacchus Marsh Road, which is a busy family practice with a large focus on disease prevention and the treatment of chronic disease.

The various medical facilities are generally not well connected or accessible by public transport and there are opportunities to better integrate health services through a structure planning process in any redevelopment of the Corio Village precinct as 'Town Centre'.

As part of a review of Corio and Norlane health and wellbeing by AECOM Australia (*Corio Norlane Health & Wellbeing Analysis 2009*), a key recommendation was to improve health and wellbeing services. The analysis finds that access and delivery of health and wellbeing services, although well meaning, is not well coordinated by the multiple agencies involved.

Actions to redress this include:

- Build a Northern Multidisciplinary Primary Health Care Centre in the centrally located Community Hub in Corio (i.e. within the Corio 'Town Centre' precinct) and ensure it is easily accessed by public transport.
- Adopt, provide funding and implement the Corio Norlane Development Advisory Board *Healthy Community Plan 2009-2013*.

8.4 Key Influences – Social Infrastructure

Local Community Services and Facilities

- The lower socio-economic status of many residents in the study area mean there is greater need to provide high quality, easily accessible social infrastructure and services to assist people in advancing their wellbeing.
- State Government policy is to promote schools and other children's centres as community hubs, through co-location and integration of services and increased community use of facilities.
- Corio and Norlane contain a range of community services infrastructure however many of these facilities are now aging and under-achieving in meeting community and service needs.
- Council's *Future Provision of Community Services Infrastructure in Norlane / Corio – Project Overview and Implementation Plan* provides a consistent and strategic approach in the provision of future community services infrastructure.
- The recent destruction of the Rosewall Kindergarten and closure of other local schools and kindergarten services in the study area will significantly impact on local service development priorities and development needs in the short term.
- The Corio Library is adjacent to the Waterworld Aquatic Centre and Centenary Hall, maximising the opportunity to provide a community destination. There are opportunities to better use the existing open space car park and buildings in this precinct to improve access, surveillance and linkages.

School facilities

- A significant restructure of the government school system, referred to as the *Corio Norlane Regeneration Project*, is being progressed by the Department of Education and Early Childhood Development. The Department has prepared preliminary master plans for the new multi-campus school.
- There is a need to plan for the future use of school sites scheduled to close (or already closed). Redevelopment of these sites presents opportunities to increase population density and mix and improve street/lot layout, housing stock and interface with public open space areas.

Health Services

- Barwon Health in planning to build a Northern Multidisciplinary Primary Health Care Centre in the centrally located Community Hub in Corio
- There are a number of medical centres and clinics within the vicinity of the Corio Community Health Centre. These facilities are generally not well connected or accessible by public transport and there are opportunities to better integrate health services through a structure planning process in any redevelopment of the Corio Village precinct as 'Town Centre'.

9.0 Natural Environment

9.1 Key Environmental Features

The Corio and Norlane area is mostly a developed urban and industrial area and contains very little remnant native vegetation and recognised high value biodiversity areas. The area has a number of public open spaces in the form of recreation reserves and parks. Open Space is mapped and described further in section 10. The main environmental features of the area (including sites which have potential for revegetation) include Cowies Creek, Cuthbertson Creek, the Shell Buffer land and the Corio Bay foreshore, as described below.

9.1.1 Cowies Creek

Cowies Creek is the southern boundary of the Structure Plan area and is part of the broader Moorabool River catchment. The creek includes a linear reserve of various widths which contains a mix of native and exotic vegetation (as shown in the photo below).

The *Geelong Port Structure Plan* 2007 describes Cowies Creek as extending from its headwaters at Lovely Banks to Corio Bay where its estuary was excavated to create Corio Quay. The Creek has a length of approximately 13 km and travels through rural, residential and industrial landscapes which expose it to a range of external influences. It has been subject to cycles of erosion and sediment deposition at various points.

The *Cowies Creek Restoration Program* (March 2004) is a comprehensive management plan for Cowies Creek prepared by the City of Greater Geelong. It notes that there is a range of restoration strategies required to protect the stream and these are grouped under the headings of waterway stability, water quality, floodplain and drainage management and vegetation management and miscellaneous works.

An ongoing program of waterway rehabilitation works has been undertaken since 2005. More recently a new Friends of Cowies Creek was established focusing on the eastern end of the creek around The Boulevard.



Photo 9 - Cowies Creek Corridor

Source: Oblique Aerial Photo taken 2009 – City of Greater Geelong

9.1.2 Cuthbertson Creek

Cuthbertson Creek is a small watercourse that appears to originate at the Princes Hwy at Stead Park, Norlane. It consists of a drainage channel as it traverses through Stead Park. The *Stead Park Masterplan* (Dec 2009) proposes to improve the function and form of the existing drain to create a meandering creek with less steep banks and planting (as shown in **Figure 21** below). The rejuvenated creek is proposed to form the spine of the pedestrian path network through the site.

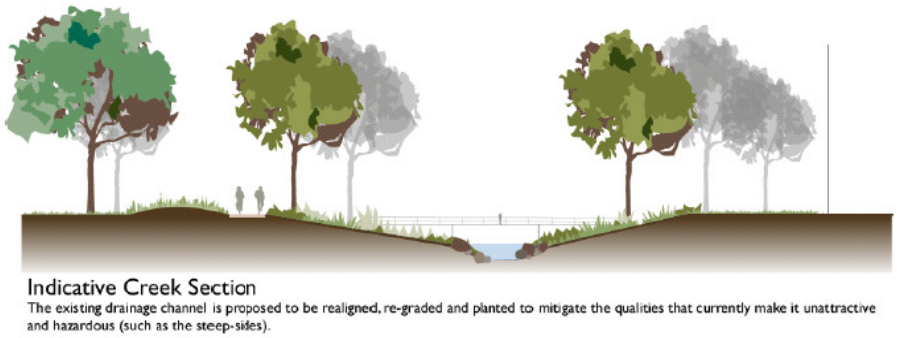


Figure 21 - Cuthbertson Creek Cross Section.

Source: Stead Park Masterplan 2009 (p.29)

Further east between Stead Park and Station Street the creek is in a semi-natural condition and its banks contain a mixture of native and exotic vegetation. The proposed Barwon Water Northern Treatment Plant is approved in this location.

East of the railway line the creek flows under the intersection of St Georges Rd and Lowe Street before crossing through port land to discharge into Corio Bay near Refinery Pier.



Photo 10 - Cuthbertson Creek

Source: Oblique Aerial Photo taken 2009 – City of Greater Geelong

Cuthbertson Creek presents an opportunity to create a linear vegetated corridor from Princes Highway to Corio Bay. This could help protect and enhance the biodiversity

values and include planting of indigenous vegetation, weed removal, creek bank stabilization and litter traps.

The *Geelong Port Structure Plan* 2007 also comments on the creek stating: "Opportunity exists to better utilise Cuthbertson's Creek where it runs from Stead Park across private land to Corio Bay. This includes water retention for use at Stead Park and rehabilitating the creek environs north of St Georges Road. Where the creek bisects port land between St Georges Road and Greta Street an appropriate treatment of the waterway would provide for greater land utilisation."

9.1.3 Corio Bay Foreshore

Corio Bay is a key environmental feature located east of the Study Area. To the south of the area around North Shore the foreshore consists of low rocky cliffs with a small beach at Moorpanyal Park. Further north the foreshore is dominated by the Port of Geelong as far as Wharf Rd/Shell Rd. North from this point is a publicly accessible foreshore reserve with low lying areas and salt marsh extending up towards Geelong Grammar.

The *Geelong Port Structure Plan* (CoGG: 2007) includes several actions relating to the foreshore including:

- Promote restoration of indigenous foreshore vegetation;
- Continue to undertake improvements to the public foreshore areas, notably those that accord with the Moorpanyal Park Masterplan;
- Capitalise on opportunities to better link the recreation path along the foreshore areas and Port area with Stead Park to the west.
- Identify and implement opportunities to better link the recreation paths along the foreshore and port areas with Cowies Creek and recreation areas to the west (where physically possible).



Photo 11 - Corio Bay at Moorpanyal Park, North Shore

Source: Oblique Aerial Photo taken 2009 – City of Greater Geelong

The City of Greater Geelong has undertaken a significant amount of works in accordance with the *Moorpanyal Park Masterplan* 2002, in close collaboration with the North Shore residents Group Inc. and various local industries (e.g. Midway).

Other notable plans within the Area of Additional Interest include the *Corio Bay Foreshore Management Plan*, *the Limeburners Bay Management Plan Stage 1* and the *Corio Bay Coastal Action Plan* prepared by the Central Coastal Board in 2003.

9.1.4 Shell Buffer Land

Shell Refining (Australia) Ltd owns a large tract of Industrial 1 Zone (INZ1) land located between the railway line and Princes Highway in Corio. This land provides a buffer to the heavy industrial uses. The land contains several plantations of native trees and is notable as a large area of vacant land in the Study Area and is shown in the photo below.



Photo 12 - Shell Buffer Land

Source: Oblique Aerial Photo taken 2009– City of Greater Geelong

9.2 Flora and Fauna

9.2.1 DSE Biodiversity Mapping

Corio and Norlane are located within the *Victorian Volcanic Plain Bio Region* according to the Department of Sustainability and Environment's Biodiversity Interactive Mapping (2009). The DSE mapping indicates the presence of endangered Ecological Vegetation Classes in and around the Study Area as shown in **Figure 22** below.

The mapping indicates the presence of an endangered vegetation community (most likely grasslands) on the vacant land site north west of Plantation Road. This site has been cropped in recent years and is unlikely to contain remnant grasslands.

The DSE mapping appears to be the basis for the Environmental Significance Overlay (ESO4) that is shown in **Map 6**.

9.2.2 CoGG Bio Sites Mapping

Biodiversity site mapping undertaken by the City includes the following "bio sites" in the Study Area and the Additional Area of Interest. These "Bio Sites" are shown in **Map 14** and listed in **Table 16** and **Table 17** below.

Figure 22 – DSE Biodiversity Mapping

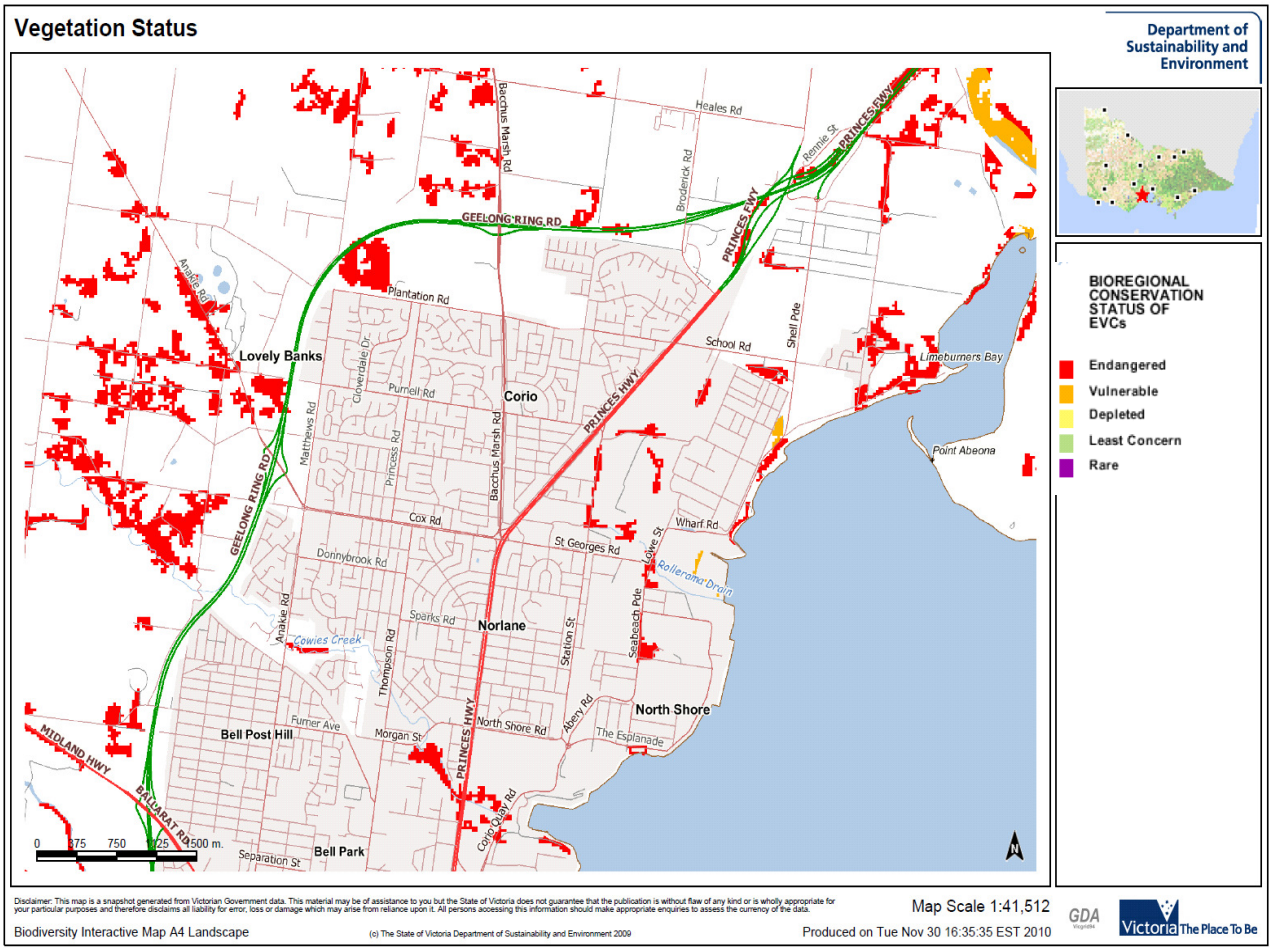


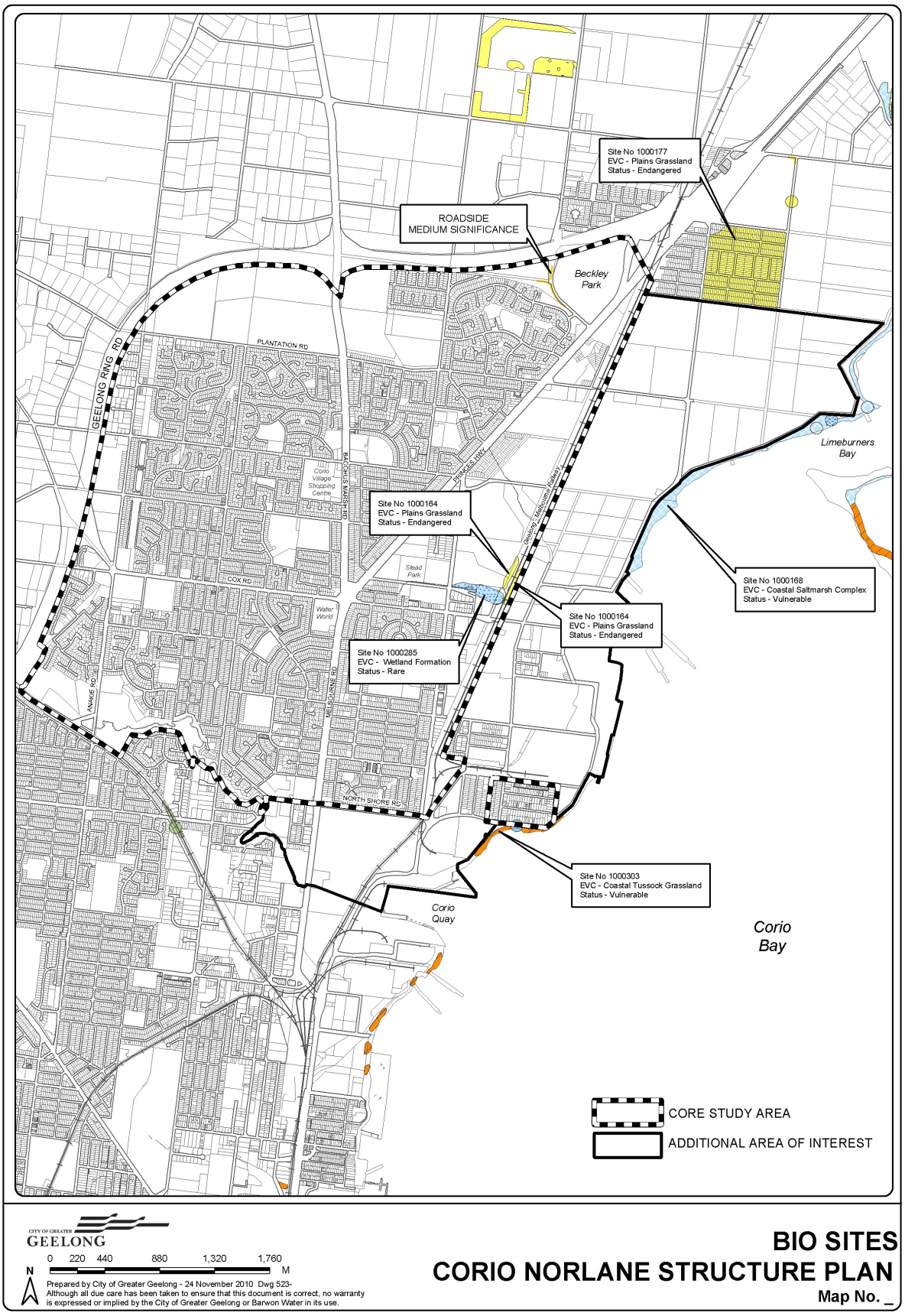
Table 16 - CoGG Bio sites within Study Area

Site No	Location	EVC	Status
No number	Roadside Vegetation, Broderick Road, Corio	unknown	Medium
1000164	Rail reserve north of St Georges Rd, Corio	Plains Grassland	Endangered
1000285	Rail Reserve and Cuthbertson Creek, Corio	Wetland Formation	Rare

Table 17 - CoGG Bio sites in Surrounding Area

Site No	Location	EVC	Status
1000177	New Corio Estate, east of Shell Pde, Corio	Plains Grassland	Endangered
1000168	Corio Bay Foreshore Reserve between Wharf Rd and Limeburners Bay	Coastal Saltmarsh Complex	Vulnerable
1000303	Foreshore around Moorpanyal Park, North Shore	Coastal Tussock Grassland	Vulnerable

Map 14 – Bio Sites



9.2.3 Fauna

There is little information on wildlife or flora records in the area, however, a December 2009 media release from the City of Greater Geelong reported the discovery of the rare growling grass frog as part of a project at the Council's Anakie Road Operations Centre. The $300,000 project involved the construction of a 2.5 million-litre dam to hold stormwater collected from the Operations Centre and nearby residential area.

A large number of Growling Grass Frogs were discovered during the investigations associated with the construction of the dam. Additional research found the greatest concentration in the Anakie Road area, with other frog species found down as far as the Morgan Street bridge section of Cowies Creek.

Corio Bay is part of the the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site and provides important habitat for migratory wader birds.

9.3 Water Quality

The City's *Environmental Management Strategy 2006-2011* states: "Over recent years the City has focused a considerable amount of resources into improving the quality of stormwater runoff from industrial, commercial and residential areas. This has included the installation of a number of litter traps within the drainage network as well as controlling the problem at the source through the development and distribution of an extensive range of education and awareness materials." (P.32 CoGG)

The City is implementing a range of programs to arrest the decline in the condition of its natural waterways and wetlands. These include the implementation of its *Stormwater Quality Management Plan*, the preparation of the *Geelong Wetlands Strategy* and the development of the award winning *Geelong Healthy Waterways Program*.

Poor water quality entering Corio Bay is considered to be a serious problem for the Corio Norlane area. Particular areas that contribute to the problem include polluted runoff from businesses along Station Street at North Shore, as well as businesses south of The Esplanade and the Moorpanyal industrial area. Cowies Creek is also affected by contaminated runoff from the industrial businesses south of the study area.

The *Geelong Port Structure Plan* includes an action to: "Investigate opportunities with adjoining industrial land uses to improve the quality of stormwater run-off entering Cowies Creek and seek industry involvement in the rehabilitation of this waterway."

Runoff from Corio Village, including hard rubbish, is not adequately treated and this represents an opportunity for Council to work with the centre operators. A solution could be similar to Waurn Ponds Shopping Centre where the expansion plans include developer contributions to upgrade the stormwater system.

In 2009, the City of Greater Geelong's Anakie Road Operations Centre became water self-sufficient thanks to a federally funded stormwater harvesting project. A new dam will result in significant savings and ten million litres of water a year will be pumped to tanks using solar power and used for street and drain cleaning, road maintenance and tree watering. The $300,000 stormwater harvesting project was funded through the Federal Government's Regional and Local Community Infrastructure Program. There are however further opportunities to improve the stormwater runoff from the Centre.

9.4 Air Quality

The Study Area is adjacent to a number of large heavy industrial businesses which may impact on air quality for the local community. There is no EPA air quality monitoring station in the northern suburbs. Community groups such as the Geelong Community for Good Life are very active in lobbying for improvements to air quality in Corio, Norlane and North Shore.

The City's *Environment Management Strategy* adopted in 2006 following an extensive consultation process includes objectives for Air Quality:

- Council take a leadership role in achieving an overall reduction in greenhouse gas emissions.
- Work closely with industry, business and the EPA to improve the quality of air emissions.
- Reduce the incidence of visual air pollution.

The *Geelong Port Structure Plan* 2007 suggests (in an effort to increase awareness) liaising with the Geelong Advertiser to seek its support for the publication of daily EPA air quality reports. It is also proposed to liaise with the EPA towards establishing community air-monitoring at the neighbourhood level. These actions are listed in the City of Greater Geelong Environment Management Strategy.

Clause 15 of the State Planning Policy, in reference to air quality, advocates the use of the EPA publication Recommended Buffer Distances for industrial Residual Air Emissions (1990) in decision making to ensure that development is not prejudiced and community amenity is not compromised.

A 10 March 2006 media release by EPA Victoria titled "Corio Air Quality Gets Thumbs Up" said monitoring in the Corio area of Geelong supports previous studies, which found air quality in the area is generally good. The media release quotes a report titled *Air Monitoring in Corio 2003-05.* Monitoring was conducted around the refinery in Corio, following increased national focus on pollutants such as benzene, toluene and xylene.

The EPA states that the report is an update and extension of previous monitoring. EPA conducted weekly air monitoring at four sites in the area, the results of which determine air quality in Corio is similar to air quality in other areas of Geelong and Melbourne.

"The extensive nature of the monitoring and assessment of air quality in Corio over the three years demonstrates EPA's commitment to providing the Geelong community with reliable information about air quality in the area. The thorough monitoring conducted in the vicinity of the Shell refinery makes this the most comprehensive industrial air quality program undertaken by EPA."

The report showed air quality in Corio consistently met state and national air quality objectives. EPA requires industries in Corio to continue to measure and reduce emissions. This, along with national cleaner fuel standards is expected to improve air quality in Corio over coming years."

The EPA media release states it has measured air quality in Geelong since 1991 and results have consistently shown that air quality is comparable with other areas in the State, including Melbourne. Additional monitoring has been conducted in Corio since 2002.

If Corio Norlane is targeted for increased population growth it is important that air quality is improved to ensure a healthy community.

9.5 Built Form Sustainability

Anecdotal evidence suggests the carbon footprint of existing dwellings in the area is quite low – possibly due to houses being modest in size and lower than normal car ownership.

The Department of Human Services website reports on 40 new homes built in Norlane in Stage 1 of the Norlane Regeneration Project as being environmentally sustainable, described as follows:

The Office of Housing has:

- constructed properties to meet a 5-star energy rating;
- incorporated the provision of solar hot water:
- distributed compact fluorescent globes to public housing tenants in order to help them reduce energy costs and greenhouse gas emissions;
- included environmentally sustainable elements such as:
    - insulation
    - water-saving devices
    - draught excluders
    - flow restrictors
    - weather seals

See for further info: http://www.housing.vic.gov.au/buildings-projects/current/norlane

There is an opportunity for urban renewal to incorporate sustainability principles and build on the work of the Norlane Regeneration Project. Sustainable buildings have a positive socio-economic impact by decreasing electricity and water bills for residents. Likewise, improved subdivision design and buildings that provide better surveillance of public spaces will encourage sustainable transport and leisure activities.

The general character of the study area is detrimentally impacted by the lack of quality vegetation commonly found in other parts of urban Geelong. A strong focus on regreening, particularly public reserve planting programs and the planting of trees in residential streets and hard surfaced areas such as car parks, will have a range of benefits including improved biodiversity and visual amenity and opportunities for community, business and school involvement.

9.6 Key Influences – Natural Environment

- The study area is mostly a developed urban and industrial area and contains few remnants of indigenous vegetation or significant conservation areas.
- The main environmental features of the area include Cowies Creek, Cuthbertson Creek, the Shell Buffer land and the Corio Bay foreshore.
- There is an opportunity for large scale planting of native vegetation in areas such as creek sides, buffer land and the foreshore.
- Cowies Creek and Cuthbertson Creek present opportunities for both environmental restoration and improved east-west pedestrian and cycling links to the foreshore
- There is some inconsistency between DSE and Council maps of biodiversity sites including native grasslands.
- Poor storm water quality entering Corio Bay is considered to be a serious problem for the Corio Norlane area.
- There are opportunities with adjoining industrial land uses (in particular at Station Street North Shore) to improve the quality of stormwater run-off entering Cowies Creek.
- Opportunities should be explored with Corio Shopping Centre to reduce polluted run-off and litter through improved storm water management.
- The quality of air emissions could be improved by working closely with industry, business and the EPA.
- Lobbying has occurred to encourage the EPA to set up an air quality monitoring station in the area.
- The EPA publication *Recommended Buffer Distances for Industrial Residual Air Emissions (1990)* is important in decision making to ensure that development is not prejudiced and community amenity is not compromised.
- Urban renewal should incorporate sustainability principles and build on the work of the Norlane Regeneration Project.

10.0 Recreation and Open Space

10.1 Active Open Space, Recreation Facilities and Needs

Corio and Norlane are generally well served by areas of active open space, which provide a diverse range of high quality sporting facilities for the local area and regional competition. Sporting activity is a key strength for the local area with young people in particular highlighting its importance in their lives (DLA 2009).

For those residents on low incomes (significant proportion of the population) low-cost family friendly recreation is a priority.

There are a number of large reserves and parks within the study area including Evans Reserve, Flinders Peak Reserve, Shell Reserve, Goldsworthy Reserve, Stead Park and Windsor Park. These spaces provide a wide range of both formal sports and informal recreation opportunities.

The City of Greater Geelong has either prepared or is in the process of preparing master plans for all areas of active open space. A regional soccer strategy is at draft stage and finds Northern Geelong to be adequately served with soccer facilities.

Map 15 shows the key areas of recreation and open space.

Council officers have completed an assessment of all active open space areas in Corio and Norlane. The assessment was based on identified areas (shown on **Map 15**) as follows:

10.1.1 Corio North

Area bounded by Bacchus Marsh Road to the east, Plantation Road to the north, Princess Road to the west and Purnell Road to the south. The total area is approximately 66 hectares and there are nil recreation facilities.

The deficiency of active open space is not of significant concern given the proximity of Shell Reserve and Sutcliffe Reserve. It is noted that Shell Reserve, whilst in close proximity, has a significant barrier in Bacchus Marsh Road.

10.1.2 Corio North West

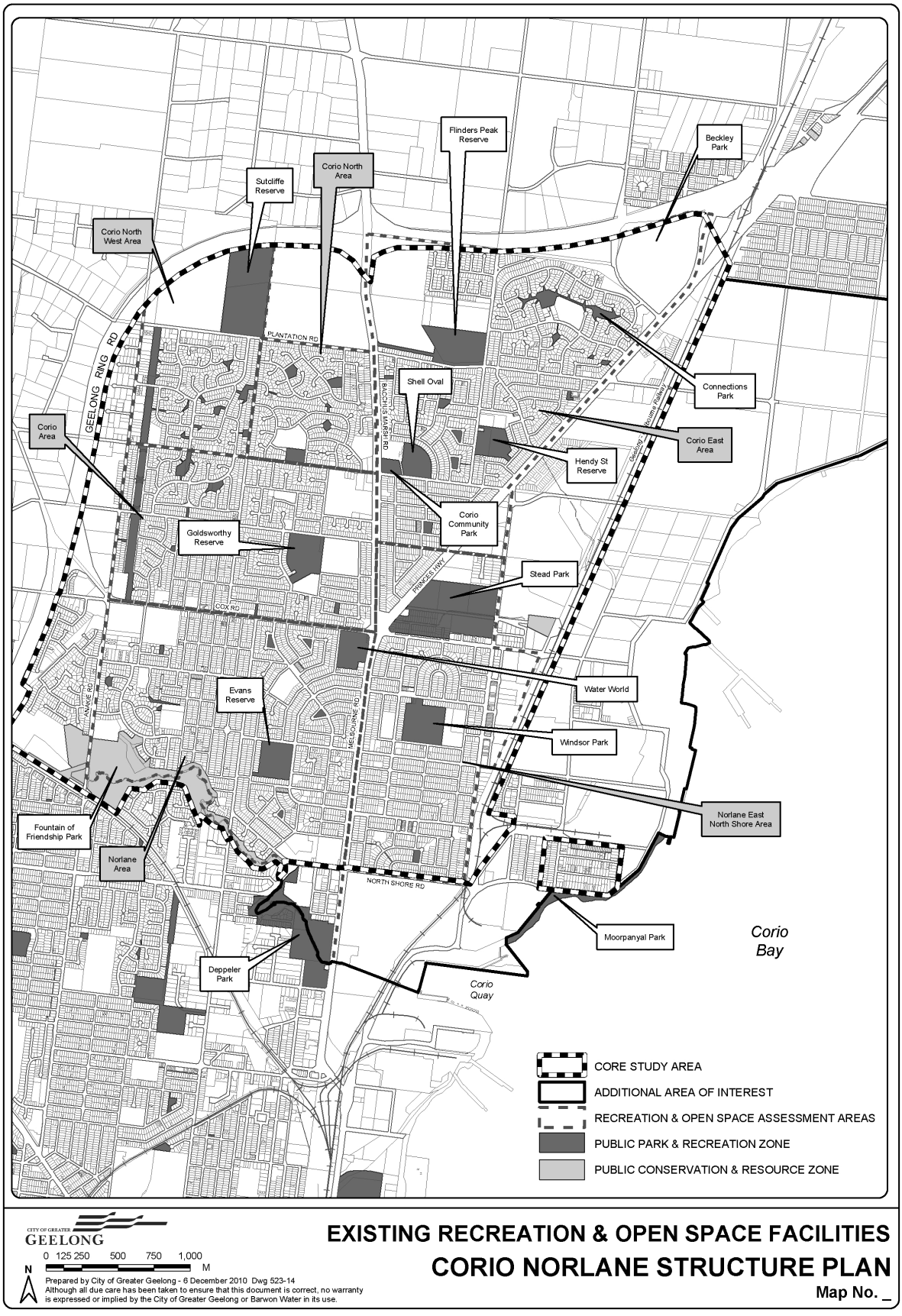
Area bounded by Princess Road to the east, Geelong Ring Road to the north, Matthews Road to the west and Purnell Rd to the south. The total area is approximately 112 hectares and contains Sutcliffe Reserve.

Sutcliffe Reserve is an undeveloped recreation reserve with leased facilities to local Serbian and Austrian Clubs. There is an opportunity to develop the reserve in conjunction with redevelopment for residential use of vacant adjoining land at 270-302 Plantation Road (currently zoned LDRZ and Amendment C155 seeks to rezone the land to R1Z). Additional residents will place pressure on existing open space and it is Council's intention to seek in-lieu cash contributions to enable some development of Sutcliffe Reserve to service local residents. The eventual upgrade of the reserve is likely to include a playground and playing fields. Government funding is likely to be required to develop the active components of the reserve (i.e. playing fields, pavilion etc).

<u>Master Plans</u>

Sutcliffe Reserve: no plan.

Map 15 – Recreation and Open Space Facilities



10.1.3 Corio East

Area bounded by Bacchus Marsh Road to the west, Montview Road to the north, Princes Highway to the east and St Georges Road to the south. The total area is approximately 271 hectares and contains Flinders Peak Reserve, Shell Oval Reserve and Hendy Street Reserve.

Flinders Peak Reserve is a valuable open space asset because of its size, active reserve capacity and existing use sporting infrastructure. It is the regional site for Rugby Union and Council has a joint use agreement in place with DEECD. Flinders Peak Reserve has significant capacity for future development and improvement and Council sees this as an important asset to retain.

Shell Oval Reserve contains significant assets including Little League, cricket oval, public toilets, tennis, netball, pigeon club, hall, and a sporting pavilion. The Shell Club & Gaming Venue owns land abutting the north west of the reserve. A Masterplan has been prepared for the Corio Community Park at Shell Reserve.

Hendy Street Reserve (22-34 Hendy Street) is a multi-purpose reserve including preschool, public toilets, soccer club, tennis, Gridiron Club, scouts, MCH etc.

Both Shell Oval Reserve and Hendy Street Reserve are not ideally configured and contain extensive sections that abut back fences of adjoining residential properties. These designs are at odds with planning for areas of active open space to incorporate adequate public surveillance and convenient access.

Master Plans

Flinders Peak Reserve: no plan.
Hendy Street Reserve: no plan.

10.1.4 Corio

Area bounded by Bacchus Marsh Road to the east, Purnell Road to the north, Matthews Road to the west and Cox Road to the south. The total area is approximately 189 hectares and contains Goldsworthy Reserve.

Goldsworthy Reserve is a significant sub-regional active reserve. Council has invested substantially in various athletics infrastructure at the reserve (i.e. track, pavilion, spectator stand, terracing and pathways) within the last 5 years. Council plans to develop the passive recreation capacity of the reserve in the immediate to medium term.

Master Plans

Goldsworthy Reserve: *Geelong Athletics Needs Study: Goldsworthy Reserve Athletics Track existing Conditions and Proposed Upgrades,* ARUP for the City of Greater Geelong, 2002.

10.1.5 Norlane East/North Shore

Area bounded by Princes Highway to the west, Harpur Road to the north, Walpole Road and Station Street to the east and North Shore Road to the south. The total area is approximately 190 hectares and includes Stead Park and Windsor Park.

Stead Park is an active regional recreation reserve incorporating soccer, softball, baseball, hockey, bowling club and darts club. There is significant infrastructure in place and a master plan has been completed for implementation. There are opportunities to link Stead Park to the Corio Bay trail along Cuthbertson Creek in conjunction with improvements to stormwater quality. Windsor Park is an active recreation reserve incorporating North Shore Sports Club, cricket, netball, football and a skate park. There is significant infrastructure in place and a master plan is to be prepared for the site.

Master Plans

Stead Park: *Stead Park Masterplan:* Insight Leisure Planning for the City of Greater Geelong, 2009.
Windsor Park: *Windsor Park Masterplan,* Parklinks Pty Ltd for the City of Greater Geelong, 1997. A new Masterplan is currently being prepared.

10.1.6 Norlane

Area bounded by Princes Highway to the east, Cox Road to the north, Anakie Road to the west and Cowies Creek to the south. The total area is approximately 271 hectares and contains Evans Reserve.

Evans Reserve is the only active open space in this precinct and is currently leased to the Corio Bay Cricket & Sports Club for summer and soccer for winter. Despite the significance of the reserve it is not ideally configured. The southern boundary abuts the back fences of properties along Alkira Avenue. The eastern boundary abuts the back fences of properties along Waitara Grove (except 50 Waitara Grove). Access to the reserve from Yooringa Avenue is also constrained, particularly the south eastern corner. In terms of reserve functionality these particular boundaries limit access and also the passive surveillance of the reserve. The absence of a house at 50 Waitara Grove has provided an important access point to residential areas to the south and southwest of Evans Reserve.

Master Plans

Evans Reserve: no plan.

10.2 Local Open Space

Open space areas in Corio and Norlane primarily take the form of smaller pocket parks and playgrounds, which can be attributed to the pattern of residential subdivision. The two exceptions are open space located adjacent to Cowies Creek, including Fountain of Friendship Park and Moorpanyal Park adjacent to Corio Bay.

There is a concentration of pocket parks located within land to the north of Cox Road where the subdivision pattern is of a more informal nature with a series of cul-de-sacs and courts. The level of amenity provided in these spaces needs to be considered as it is likely to have a strong influence over the use of these local parks. The amenity and safety of local parks and open space is a deterrent to residents using certain areas (*An Active Transport Plan for Corio and Norlane*, DLA 2010).

The City of Greater Geelong is currently preparing a Play Strategy to better manage the some 300 playground sites (279 with equipment) located within the municipality.

Council officers completed the following assessment of all local open space areas in Corio and Norlane based on the same identified areas as section 10.1 (see **Map 15**).

10.2.1 Corio North

Reserve Address	Size	Assessment
Remington St	5,186	Good sized parcel of land. Good surveillance, treed, new playground
16-22 Lincoln St	6,100	Good sized parcel of land. Good surveillance, well treed, playground
36 Carmarthen Dve	1,174	Access way. Primary function is to provide permeability.
7-8 Meath Court	2,934	Undersized, treed, new fencing, playground. Reasonable amenity. Reserve primarily services immediate residents of 2 court heads
1-9 Cheshire St	11,584	Significant sized parcel of open space adjacent to Corio West Primary School. Relatively undeveloped. Marching girl shed and car parking to rear. Kindergarten encroaching the reserve.
3 Armalite Court, 18 Pembroke St	492, 557	Access way. Primary function is to provide permeability.
10 Armalite Crt	636	Access way. Primary function is to provide permeability.

Meath Court could be improved through land purchases opening up the reserve to service residents in Carmarthen Drive, Caithness Crescent and beyond. Cheshire Reserve is a good sized reserve with adequate configuration to make this reserve usable. The "Marching Girls" used to use the reserve however they now march inside the shed at the rear of the reserve. General quantity of passive open space is reasonable however the distribution of open space could be better.

10.2.2 Corio North West

Reserve Address	Size	Assessment
5 Cardross Crt	815	Access way. Primary function is to provide permeability.
8 Rockley Close	578	Access way. Primary function is to provide permeability.
109-111 Princess Rd	1,778	Access way from bus stop. Primary function is to provide permeability
26 Caldermeade Rd	487	Access way to utility parcels. Primary function is to provide permeability
1a Cranbourne Drive	1,098	Access way. Primary function is to provide permeability.
30 Cloverdale Drive 11 Glendye Crt	1,207	Access way. Primary function is to provide permeability.
8 Landale Crt	2,365	Park with playground recently upgraded. Poor amenity, significant function as public access way
149 Princess Rd	6,032	Serves as an access way. Poor amenity and poor surveillance.
5 Cohuna Crt 5 Grange Court	2,194	Informal park with small playground. Poor amenity and surveillance. Playground scheduled for upgrade for 2010. Reserve provides connectivity for 3 court heads

Landale Court could be significantly improved by purchasing neighbouring lots to further open up the reserve. Council's key requirement for reconfiguration of open space for

this precinct is to improve the overall quality of reserves, by ensuring good passive surveillance, improved configuration/layout and general functionality.

This precinct contains significant high voltage overhead transmission lines parallel to Mathews Road. This Council owned linear utility reserve also functions as a recreation reserve however suffers from poor amenity.

10.2.3 Corio East

Reserve Address	Size	Assessment
UTILITY 230 Bacchus Marsh Rd	13,380	Valuable open space parcel because of size and active reserve capacity and existing use. Significant investment in sporting infrastructure
23A Rodbrough Cres	1,685	Existing playground. Condition fair to good. General amenity good
17-21 Donax Rd	4,330	Playground fair condition. Well treed reserve. Decent sized parcel providing connection between Amanda Gve & Raymond Gve
23 Rotella Ave	3,359	Reasonable sized parcel, low amenity, playground in good condition
Connections Park	30,906	Good sized piece of land. Very poor configuration with significant issues re surveillance of the reserve. Significant resources have been invested in this park.
Vigar Court	3,012	Underutilised reserve. Mainly valued for improving permeability for residents. Low to minimal recreation function
McShane Court	693	New playground
18 McKinley Ave	1,776	Playground. Provides access way to Princes Hwy
19 Howitt Ave	2,053	Playground. Oddly configured parcel
Talona Cres	3,465	Playground
13-21 Dearborn Pde	4,446	Good sized parcel including playground, picnic tables and toilet block. Opposite local shops

Passive reserves could be improved throughout this precinct. General amenity, appropriate sized reserves, siting and accessibility will be critical issues for consideration in determining appropriate reserve provision. 8 x 0.5ha neighbourhood parks would service this community.

A utility reserve is located parallel with Plantation Road. This appears to be a drainage reserve and provides a good linear linkage east west for this precinct. Linear open space corridors provide opportunities for cycle and walking paths. This reserve should be retained and opportunities to extend a linear corridor reserve should be pursued.

Master Plans

Connections Park: *Connections Park Redevelopment Plan,* City of Greater Geelong, 2006.

10.2.4 Corio

Reserve Address	Size	Assessment
21-23 Vermont Ave, 16-18 Georgia Gve	1,236, 1,312	Land subject to flooding, functions as drainage reserve 9 but zoned PPRZ Council rental property
90 Cox Road	1,249	Primary function is linkage to school
36-38 Kanooka Dr	1,104	Undersized reserve with playground. Good surveillance with three entry points. Existing playground.
5 Virgillia Square	535	Access way. Primary function is to provide permeability.
128 Goldsworthy Road	569	Access way. Primary function is to provide permeability.
7-8 Riesling Crt	3,903	Treed, good amenity & surveillance, new playground
19 Bonang Crt	1,361	Access way. Primary function is to provide permeability.
49-51 Glenelg Ave	1,912	Developed open space area with plantings and public art installation imminent. Drainage function.
167-169 Purnell Road Cloverdale Community Centre	5,873	Good sized parcel. Poor surveillance and permeability. Infrastructure needs improvement. Opportunity to acquire blocks to improve surveillance and mobility
Utility areas		Horne, Chaffey, Virgillia & Banksia Sq High voltage transmission line – undevelopable land

Cloverdale Community Centre (Purnell Rd) has a good sized reserve adjacent to the centre and this could be vastly improved through acquisition house lots. At the very minimum Council would be seeking to create 8 neighbourhood parks 0.5 ha in size in this precinct.

10.2.5 Norlane East/North Shore

Reserve Address	Size	Assessment
Waverley Street	3,777	Reasonable sized park with play equipment (upgrade proposed for 2010)

Whilst this precinct has an excellent supply of active open space provided by Stead Park and Windsor Park; there is a poor distribution and meagre supply of passive reserves, local parks and playgrounds etc. Access for residents to local open space is very limited especially for those residents who live south of Spruhan Avenue. Waverley Street reserve is of poor amenity and quality, though the 2010 playground upgrade has improved the space to some degree.

A key focus would be the provision of passive reserves incorporating play facilities to service this community. The area south of Spruhan Ave requires 2 local parks of 0.5 hectares with playgrounds, landscaping and paths as appropriate at a minimum. It would be essential to ensure that the amenity of these reserves is high. It would be Council's preference to see additional local parks (with playgrounds) provided between Sparks Road and St Georges Road.

10.2.6 Norlane

Reserve Address	Size	Assessment
28-64 The Boulevard	25,440	DW Hope Centre incorporates community buildings (German, Filipino Clubs etc). Large parcel or open space, good surveillance, good access, well located. Could be better utilised as open space (ie playground development, landscaping, paths etc)
29 Warrawee Avenue	1,284	Undersized, isolated, unsuitable for playground (one recently removed)
Rosella Crt	2,502	Undersized, isolated, unsuitable for playground (currently has slide and carer seat)
Peacock Ave	3,296	Not required as POS, performs limited recreation function, used primarily for pedestrian link (11,734 sqm DEECD)
6-7 Jamina Court	2737	Incorporates swing, slide, basketball pad. Play facilities recently upgraded,. Surveillance fair to poor. Likely to service only residents from the 2 courts. Smaller than preferred minimum reserve size. Poorly sited to service this community. Access poor due to location at the end of 2 courts.
4A Maynooth Dve	433	Primary function is linkage to school. Recently upgraded playground (2002) - halfway thru lifespan. Grossly undersized
15 Flamingo Crt	2,120	Undersized, isolated, unsuitable for playground (currently has swing set, slide, rocker and carer seat)
18 Ibis Crt	3,156	Undersized, unsuitable for playground (currently has swing set, slide/multi play & carer seat), good surveillance

Norlane currently has a chronic deficiency of public open space for both active and passive use. The public open space that does exist is poorly configured and this is the case for both active and passive reserves. Consequently the City's Recreation and Open Space Department places a significant degree of importance on Evans Reserve to the community of Norlane. This is demonstrated by the high level of community activity currently occurring at Evans Reserve.

Council's absolute minimum requirement for this precinct would be the creation of 4 neighbourhood parks 0.5ha in size. A neighbourhood park would incorporate a playground (multi age combination unit, spring rocker, swing set and carer seating as a minimum), path network, drinking fountain (preferably). Reserves would require active frontages on at least 2 sides (but preferably 3 sides) with good passive surveillance. New or upgraded reserves should be landscaped incorporating shade trees.

10.3 Other Recreation and Open Space Facilities

10.3.1 Cowies Creek / Fountain of Friendship Park

Cowies Creek forms the southern boundary of the study area and is the only significant area of natural-semi natural open space in Corio Norlane. The linear reserve follows the course of the creek and provides for walking and cycling and links Fountain of Friendship Park at Anakie Road in the west to Deppeler Park and Seagull Paddock at the Princes Highway in the east.

Fountain of Friendship Park is approximately 8.8 hectares with its primary access off Anakie Road. The Park abuts the Bell Post Shopping Centre and dwellings to the north and the Ballarat – Geelong Railway and dwellings to the south. Cowies Creek is the

principal natural asset and influence on the site and is a valuable habitat resource. The Park provides opportunities for informal recreation and social activity in a natural environment. Facilities in the Park include free car parking, a skate park and BMX track, barbeques, playground and rotunda.

Fountain of Friendship Park incorporates the Leisuretime Centre, Geelong's biggest indoor open spaced stadium. The Leisuretime Centre is a multi-purpose venue with facilities for holding sporting activities such as basketball, badminton, futsal (indoor soccer), volleyball, indoor and outdoor netball, Squash and racquetball courts plus supporting services such as a canteen, multi purpose room and meeting rooms.

A Masterplan has been prepared for Fountain of Friendship Park and there are opportunities to improve the interface and linkages between the Park, the Leisuretime Centre and Bell Post Shopping Centre. Improved linkages from the Park to the Geelong Ring Road walking/cycling trail should also be explored.

Master Plans

Final Landscape Plan Fountain of Friendship Park, Earth Tech for the City of Greater Geelong, 2006.

10.3.2 Moorpanyal Park

Moorpanyal Park is a coastal reserve located on The Esplanade, North Shore. The Park includes car-parking, children play equipment, barbecue and toilet facilities, the Corio Bay trail and is a popular fishing spot. This linear reserve does not form part of the study area but sits within the additional area of interest.

The Park is geographically isolated from the wider Corio Norlane open space network, thus North Shore residents and workers in local industries look to the park for many of their recreational needs. A Masterplan was prepared in 2002 and subsequent works include revegetation, construction of fishing jetties, improved pedestrian links, redesigned car park areas and realignment of stormwater outfalls to reduce impacts on Moorpanyal Park beach.

Master Plans

Moorpanyal Park Masterplan, Mark Reilly Landscape Architects for the City of Greater Geelong, 2002.

10.3.3 Beckley Park

Beckley Park is a prominent feature upon entry to Corio Norlane, being located on land bounded by the Geelong Ring Road, the Princes Highway and Broderick Road. The Park is Crown Land run by a Committee of Management and zoned Special Use Zone 4 – *Geelong Showgrounds and Racecourse*.

Beckley Park contains the following facilities/activities:

- Harness Racing Track (includes a recent $8 million upgrade).
- Greyhound Racing Track.
- Corio Karting Track.
- Mini Bike Track.
- Community Market (every Saturday of every week to 30 July 2011).
- Occasional music festival (most recent being the "Grazzhoper Festival" held in October 2008).

10.3.4 Waterworld

Waterworld is a Council owned and operated leisure centre located on the corner of Cox Road and Princes Highway, Norlane. This acquatic-based centre is a significant community asset serving the northern region of Geelong.

The centre contains the following facilities/activities:

- 25 metre indoor heated pool.
- Beach entry pool.
- Outdoor learner's pool, waterslide and diving pool (open only in summer).
- Splash pad children's water play area and recreation area (open only in summer).
- Relaxation pool and sauna.
- Gym, group exercise room, Cycle room and child care.

Waterworld is strategically located adjacent to the Corio library and Centenary Hall to provide a key community destination point and link to the Corio Shopping Centre to the north. There are opportunities to better use the existing open space car park and buildings in this precinct to improve access, surveillance and linkages.

10.3.5 Ted Wilson Trail

The Ted Wilson Trail Follows the Geelong Ring Road from Corio (Broderick Road) to Herne Hill (Church Street) and provides a continuous link between the northern and outer western suburbs of Geelong. The 11.4 km concrete path caters for walking and cycling and connections can be made to the Barwon River Trail and Bay Trail.

A map of the trail is available at: http://visitgeelongbellarine.com/great-ocean-rides/trail/ted-wilson-trail

10.3.6 Study of Open Space Networks

The *Study of Open Space Networks* (City of Greater Geelong, 2001) is a comprehensive study that provides a framework for the future coordination, development and management of open space in and around the City of Greater Geelong. Geographically and socially the City is viewed in three broad areas, one being Central, which includes Corio and Norlane.

The study finds deficiencies in the central areas of Norlane, Corio, Bell Park, North Geelong, Geelong itself, South Geelong and on into parts of Belmont and Highton. In these areas there is often a lack of significant open space areas and linkages to open space.

The study notes that Northern Geelong is dominated by industrial and residential uses. There is an identified lack of quality open spaces for foreshore, recreation, linkage and informal activities. In particular, the linear link along Cowies Creek fails to adequately link major features to the foreshore. Further, there is a lack of quality scenic spaces in the north, compared with the spaces in central and southern Geelong. Key overall actions include a program to improve the amenity of the Norlane / North Shore area through development of Amenity and Landscape spaces and greater linkage between spaces. (e.g. adapting Cheshire Reserve, Sutcliffe Reserve and Shell Recreation Reserve).

Specific actions for the Corio/Norlane/North Shore Sub-zone include:

- Pursue the Social Infrastructure Guidelines (CoGG 2000) report recommendations regarding urban design improvements to create and enhance safe off and on road cycle and pedestrian routes which:
    - Link to schools and other community activity nodes and,
    - Provide recreational routes throughout the Sub-zone and/or provide linkage to other Sub-zones. The Cowies Creek route should be developed as a major Sub-regional trail linking through the Ford site to the coastal trail and westward to the Moorabool River.

- Identify opportunities for acquiring land for development as Informal Parks and Landscape and Amenity sites in those parts of Norlane identified as being deficient in all non-Sports forms of provision.
- Review the demands for sporting use of the Sports sites within the Sub-zone for the purpose of identifying those sites which should be given sub-regional (eg. Goldsworthy Reserve, Windsor Park) or regional Sports (eg. Stead Park) status and those which, while retaining a predominant Sports role, can undergo development to provide a stronger Landscape and Amenity and Informal Park focus (eg. Cheshire Reserve, Sutcliffe Reserve, Shell Recreation Reserve).
- The need for and use of Sports sites should be monitored so that in the longer term, decisions can be made as to whether the number of sites classified as Sports can be consolidated.
- Pursue the development of a continuous Linear Linkage reserve along the Corio Bay coastline.
- Pursue the Social Infrastructure Guidelines report recommendations for the development of co-located and integrated community service facilities in association with schools including local Sports and Informal Park sites in the three sections of the Sub-zone to provide multi use sites.
- Pursue the development of major roadside reserves and other Utilities and Services reserves throughout the Sub-zone so as to co-provide Landscape and Amenity resources.
- Review all small Linear Linkage and Informal Park sites throughout the Sub-zone and identify those which warrant further development and those which warrant co-development for the provision of enhanced Landscape and Amenity sites, such as Cheshire Reserve in Purnell Road.
- Create a greater link between the major facilities of Stead Park, Windsor Park, Goldsworthy Reserve, Waterworld and Corio Village. Other opportunities include creating a link along the stormwater drainage line east of Stead Park through to Corio Bay.

10.4 Walking Study

The '*Walking More Walking Safely'* study (CoGG 2004) was commissioned by the City of Greater Geelong and partly funded by Sport and Recreation Victoria (SRV) through the Planning Community Facilities Funding 2002-03, to review current walking trends and patterns. A key aim of this study was to guide how the City of Greater Geelong is responding to changing leisure patterns and in particular enhancing the provision of passive recreation options for residents.

The Walking Study has a primary focus on recreational walking. That is, those walking activities undertaken as leisure (time free of work or other obligations, an experience of enjoyment and/or fun, and as an activity which offers mental and physical benefits) rather than walking as a mode of transport or other function.

The study revealed the following relevant issues:

- The Geelong average percentage of population involved in recreational walking (over a 2 week period) is 71.7%, 77.4% in Highton/Belmont and 65.8% in Corio, Norlane and North Shore.
- Walkers in Norlane, North Shore and Corio were far less likely to rate the environment and scenery as good or very good, (20% under the average score across municipality). The presence of litter was also of greater concern to walkers in these areas.
- Walkers in Norlane, North Shore and Corio are more likely to raise issues in relation to lack of trees, greenery and shade and a concern for greater attention to litter collection and cleanliness. Residents walking in this area are less satisfied overall and would like better footpaths and walking tracks.
- 56 per cent of Geelong's recreational walkers mainly walk in their local streets and neighbourhoods.
- The urban form and layout of streets can determine whether residents find it easier to choose to walk to destinations - because the route is attractive, safe, reasonably direct (i.e. no culs-de-sac) and well signed - or whether they choose to rely on motor vehicles. For Geelong's ageing population the heavy reliance on private vehicles will ultimately increase the demand for Home and Community Care and other services as the independence of older people falters.
- The built environment often builds in disadvantage for people whose primary mode of transport is public transport or walking.
-

10.5 Cycle Strategy

The *City of Greater Geelong Cycle Strategy* (March 2008) was developed to provide Council with guidance on expanding Geelong's regional on and off road network. The Strategy identifies issues and makes a series of recommendations that are relevant to the Corio and Norlane Structure Plan.

Overall, the Strategy finds that there are significant gaps in the existing cycle network particularly within North Geelong, Norlane and Corio. The following bicycle works program (relevant to the study area) has been devised to guide Council through the implementation of the bicycle network. Proposals are given priority rankings from "A" (highest priority) to "E" (lowest priority). Figure 15 in section 6.5 shows existing and proposed North Geelong cycling routes.

Table 18 – City of Greater Geelong Cycle Strategy: Bicycle Works Program

Network Priorities

Priority	Proposal	Suburb	Treatment Type	Council Funded?	Funding Sources
A	Install on road bicycle lanes along Bacchus Marsh Rd from Melbourne Rd to Plantation Rd	Corio	1.5m wide bicycle lanes and signage	No	VicRoads
A	Install bicycle lanes along Anakie Rd to Mathews Rd	North Geelong	1.5m wide bicycle lanes and signage	No	VicRoads
A	Install bicycle lanes on Olympic Ave and Hinton Cl. Include a connection to Cowies Creek Path	Norlane	1.5m wide bicycle lanes and line marking	Yes	
B	Install bicycle lanes on St Georges Rd and connect to the path from Stead Park to the Bay Trail	Norlane	1.5m wide bicycle lanes and signage	No	VicRoads
B	Install bicycle lanes along School Rd and Plantation Rd. Connect to Corio Station.	Corio	1.5m wide bicycle lanes and signage	Yes	
B	Install bicycle lanes on Purnell Rd, from Princess Rd to Melbourne Rd connecting to the path at Station St and Corio Station.	Corio	1.5m wide bicycle lanes and signage	Yes	
B	Install bicycle lanes along Shell Pde from Geelong Grammar to Foreshore Rd	Corio	1.5m wide bicycle lanes and signage	Yes	
B	Install bicycle lanes along Morgan St and The Boulevard to connect Cowies Creek Path to North Shore Rd	North Geelong	1.5m wide bicycle lanes and signage	No	VicRoads
E	Create an off road cycle connection between Stead Park and the Bay Trail. Investigate utilising the drainage line for this purpose	Corio	1.4km long, 2.5m wide shared path	Yes	
E	Install bicycle lanes on Darebin St and Sparks Rd from Peacock Ave to Station St	Norlane	1.5m wide bicycle lanes and signage	Yes	
E	Install bicycle lanes along Mathews Rd from Cox Rd to the Geelong Bypass trail	Corio	1.5m wide bicycle lanes and signage	No	VicRoads
E	Install bicycle lanes along Hendy St from Purnell Rd to the Geelong Bypass.	Rosewall	1.5m wide bicycle lanes and signage	Yes	

Long term proposals

Proposal	Suburb	Treatment Type	Priority
Connect the fragmented cycle paths along the Waterfront from Rippleside Park to North Shore	North Geelong	2.5m wide shared path plus signage	High

10.6 Key Influences – Recreation and Open Space

Active Open Space

- Corio and Norlane are generally well served by areas of active open space, which provide a diverse range of high quality sporting facilities for the local area and regional competition.
- Sporting activity is a key strength for the local area with young people in particular highlighting its importance in their lives. For those residents on low incomes low-cost family friendly recreation is a priority.
- There are a number of large reserves and parks within the study area including Evans Reserve, Flinders Peak Reserve, Shell Reserve, Goldsworthy Reserve, Stead Park and Windsor Park. The City of Greater Geelong has either prepared or is in the process of preparing master plans for areas of active open space.
- There are opportunities to use buildings on recreation reserves for wider community purposes, such as the fOrT youth drop-in centre at Stead Park.
- There are opportunities to link Stead Park to the Corio Bay trail along Cuthbertson Creek in conjunction with improvements to stormwater quality.
- Sutcliffe Reserve is an undeveloped recreation reserve with leased facilities. There is an opportunity to develop the reserve in conjunction with redevelopment for residential use of vacant adjoining land at 270-302 Plantation Road.

Local / Passive Open Space

- The study area lacks quality, usable passive reserves.
- The primary function of a number of pocket parks is for thru-access however these spaces do not provide adequate amenity and surveillance.
- Work with the Department of Human Services and the Department of Education and Early Childhood Development to improve layout, access, surveillance and functionality of recreation and open space sites where appropriate. Poorly utilised and unsafe spaces to be considered for trade and renewal.

Other Recreation and Open Space Facilities

- Cowies Creek / Fountain of Friendship Park is the only significant area of natural-semi natural open space in Corio Norlane and there are opportunities to improve the interface and linkages between the Park, the Leisuretime Centre and Bell Post Shopping Centre.
- Waterworld is strategically located adjacent to the Corio Library and Centenary Hall to provide a key community destination point and link to the Corio Shopping Centre to the north. There are opportunities to better use the existing open space car park and buildings in this precinct to improve amenity, access, surveillance and linkages.
- Council's *Study of Open Space Networks 2001* and *Cycle Strategy 2008* provide programs for action to address infrastructure deficiencies.

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Glossary

City of Greater Geelong	COGG
Department of Education and Early Childhood Development	DEECD
Department of Planning and Community Development	DPCD