North East Gold Coast land use, economic and infrastructure strategy

Department of Infrastructure and Planning in association with the Gold Coast City Council and Logan City Council
The Queensland Government is committed to providing accessible services to Queenslanders from culturally and linguistically diverse backgrounds. If you have difficulty understanding this document and need an interpreter, please call the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone the Queensland Department of Infrastructure and Planning on 07 3227 8548.

© The State of Queensland (Department of Infrastructure and Planning, 2009). Copyright protects this publication. Except for purposes permitted by the Copyright Act 1968, no part may be reproduced by any means without the prior written permission of the Queensland Department of Infrastructure and Planning.

North East Gold Coast land use, economic and infrastructure strategy
1. Introduction and background

The Department of Infrastructure and Planning—in conjunction with the Gold Coast City and Logan City councils—has prepared this land use and infrastructure strategy for the North East Gold Coast study area.

The strategy is intended to identify the optimum balance between competing land uses, values and constraints in the study area, and includes an infrastructure strategy to support the preferred land-use pattern. Although the study area includes some areas developed or designated for urban development, the focus of the strategy is on resolving development pressures on the rural areas and urban–rural interface issues.

This final strategy takes into consideration submissions received from the community and other stakeholders during the community consultation on the draft strategy, which was released in December 2008.

Recommendations in this strategy have been considered in the preparation of the South East Queensland Regional Plan 2009–2031 (SEQ Regional Plan 2009–2031).

The strategy is based on a comprehensive planning investigation of the study area, including its regional and sub-regional context. The results of this planning investigation are documented in a separate report—the North East Gold Coast strategic land use, economic development and infrastructure study—Issues and options paper, August 2008 (the issues and options paper).

Sections 2–4 of the strategy provide a summary of the key issues identified in the study area, including those raised during the initial consultation on the issues and options paper.

Section 5 contains the findings of the strategy.

The strategy includes the findings of a technical study prepared by Parsons Brinkerhoff Australia Pty Ltd. The technical study included detailed site selection studies for specific land uses, infrastructure investigations and an evaluation of the likely social and economic impacts of the strategy.
2. The study area

2.1. Location

The North East Gold Coast study area—also commonly referred to as Rocky Point—is situated in a highly accessible location between the two major urban areas in South East Queensland—greater Brisbane and the Gold Coast.

The study area is shown on map 2.1. It comprises approximately 17,250 ha of land bound by the Logan River to the north, the Pacific Motorway (M1) to the west, Yawalpah Road and the Urban Footprint boundary to the south and southern Moreton Bay to the east.

2.2. Existing land uses

Map 2.1 also identifies the major existing land uses in the study area. The majority of the study area is rural/non-urban in nature. However, there are a variety of urban land uses around the edges of the study area.

Adjacent to the M1, the land uses comprise urban residential development at Eagleby and Ormeau, separated by industrial and business land uses in the Yatala enterprise area. South of the Ormeau residential area is the inter-urban break between Brisbane and the Gold Coast. The inter-urban break comprises predominantly rural/natural areas adjacent to and between the Pimpama River and Hotham Creek.

Land uses along the southern boundary of the study area comprise the village of Pimpama and the Gainsborough Greens Golf Club. Further east the land uses are rural/non-urban in nature, with natural vegetation becoming more predominant closer to the coast.

Along the coastal boundary of the study area are the predominantly residential villages of Cabbage Tree Point and Jacobs Well. Approximately 1.5 km south of Cabbage Tree Point lies the Horizon Shores marina development, which currently provides around 500 wet berths and supporting marine infrastructure. The master plan for Horizon Shores envisages an expansion to 1400 wet berths.

The narrow coastal strip between Cabbage Tree Point and Horizon Shores accommodates a number of smaller marine industry activities, including Maas Marina immediately north of Horizon Shores and small-scale marine industry at Walkers Jetty, immediately south of Cabbage Tree Point.

South of Jacobs Well is Calypso Bay, comprising a 250-berth marina and canal estate and golf-course residential development, which is likely to provide around 900 lots and 1400 dwellings when complete.
The rest of the study area is predominantly rural/non-urban in nature and accommodates a wide range of activities and land uses including:

- sugarcane production
- Rocky Point mill, distillery and cogeneration plant
- aquaculture
- extractive industry
- motorsport activities
- Heck Field aerodrome.

An increasing number of the smaller lots in the rural/non-urban areas are being used for rural-lifestyle purposes, such as equine activities.

2.3. Natural resource values

2.3.1. Soils

The soils of the Rocky Point area have formed predominantly on a low-lying alluvial plain in the centre of the area and on an area of elevated high river terraces in the north. To the east, the area is bounded by marine plains and to the west by undulating and steep hills of mudstone. Isolated areas of low sand ridges are located to the west of Jacobs Well and low sandstone rises occur in scattered locations in the north, east and west of the area.

Map 2.3 shows the good quality agricultural land in the study area, which is based on the areas mapped as being either suitable (Class A land) or marginal (Class B land) for growing sugarcane. These classifications are identified by the Department of Infrastructure and Planning using the latest land suitability information provided by the Department of Environment and Resource Management.

2.3.2. Ecosystem services

Ecosystem services are the benefits that people obtain from natural ecosystem processes. They include provisioning services such as food, water, timber, fuel and fibre; regulating services such as air quality, water quality, disease prevention, a habitable climate, arable land and pollination; and cultural services that provide recreational and aesthetic benefits.

The study area’s wetland and inter-tidal areas are highly productive ecosystems, providing habitat and food for many species. A large proportion of commercial and recreational seafood, including fish, shellfish and crustaceans, are dependent on estuarine wetlands at some stage of their lifecycle. Many industries, including agriculture, fishing and tourism, directly or indirectly rely on the various ecological attributes of floodplains that provide services such as food, fuel and fibre from arable land, stormwater filtration and recreational opportunities.

2.3.3. Extractive resources

The study area contains extensive deposits of both hard rock and sand resources. These resources are of regional and sub-regional significance and are identified as key resource areas (KRAs) in State Planning Policy 2/07: Protection of Extractive Resources.

The KRAs in the study area are shown on map 2.3. Each KRA contains three elements: a resource/processing area, a separation area, and an associated transport route (which also includes a transport route separation area, where required) from the resource/processing area to a major road or railway.
2.4. Nature conservation values

The study area contains a range of significant nature conservation values as shown on map 2.4. The significant habitat areas in the study area should be protected and enhanced, including allowing for improved management of surrounding land uses. The priority habitat areas include:

- conservation parks
- Pimpama River conservation area
- McCoys Creek catchment
- Jumpinpin-Broadwater and Pimpama declared Fish Habitat Areas and mangrove communities
- tidal wetlands, sand flats, salt pans, mudflats and salt marshes
- waterway corridors and freshwater wetlands
- Coomera–Pimpama koala conservation area
- remnant eucalypt forest.

A regional ecological corridor along the Hotham Creek, Pimpama River and McCoys Creek corridors has been identified.

There are other opportunities to improve the connectivity between remnant habitat areas. Priority areas include:

- the Moreton Bay coastline corridor
- remnant vegetation areas in the Pimpama Creek and McCoys Creek corridors and catchments.

2.5. Physical constraints to development

Map 2.5 shows the main physical constraints in the study area.

The flooding information is based on recent flood modelling work undertaken by Gold Coast City Council. The minimum flood level in Gold Coast city is 2.32 m Australian Height Datum (AHD), comprising 2.05 m for storm surge and 0.27 m for sea level rise. The designated flood-affected areas comprise a combination of the maximum level of the 1974 flood, one-in-100-year inundation and storm surge (with sea level rise) flood surfaces.

Flooding poses a significant constraint to development over large parts of the study area. Although the flood modelling includes an allowance for the impacts of climate change on sea level, the uncertainty around these impacts means it is prudent to take a precautionary approach when considering future land uses in areas that are potentially subject to flooding.

The study area also includes extensive areas of acid sulfate soils which align closely with the flood-affected areas. Future land uses should avoid or minimise the disturbance of acid sulfate soils wherever practicable.

There are only limited areas of bushfire and landslip hazard, generally within the Urban Footprint. These hazards are not significant in terms of strategic planning.

An Airservices Australia VHF omni range (VOR) aviation facility at Jacobs Well will need to be protected on an ongoing basis through specific development constraints within a 1000 m buffer radius, as set out in the Gold Coast City Council planning scheme.

---

1 The flood data shown on map 3.5 is different to council's designated flood surface (map OM 17 in the Gold Coast City Council planning scheme), as it is based on the most recent flood modelling work.
2.6. Other significant values

2.6.1. Scenic amenity and landscape character

Areas of regionally significant scenic amenity in the study area include:

- slopes of Mount Staplyton
- natural vegetation on elevated lands near the Pacific Motorway, between the Pimpama River and Hotham Creek—which forms part of the inter-urban break between Brisbane and the Gold Coast
- waterways and open space adjacent to crossings of the Pacific Motorway and Robina-Brisbane railway line with the Pimpama, Logan and Albert rivers
- small patches of cane land and retained vegetation visible from the Pacific Motorway and Gold Coast–Brisbane railway line.

Other important scenic-viewing opportunities provided by the study area include:

- views into cane land from scenic routes between Stapylton, Jacobs Well and Ormeau—the Gold Coast City Council planning scheme identifies the canelands tour road route and the Albert/Logan river water route as the key scenic routes in the study area
- views across the study area seen by occupants of recreational boats on southern Moreton Bay looking toward the Gold Coast Hinterland.

The scenic amenity of the study area can be maintained or enhanced through special management of view corridors between popular viewing locations and rural, natural, waterway and elevated scenery—especially Mount Staplyton.

2.6.2. Heritage values

In June 2007, the Gold Coast City Council conducted a study of heritage values, the *Beenleigh and Sugarcane Land—Heritage and Character Study*. Within the North East Gold Coast study area, the heritage study identified three places that are considered to be of potential state significance, namely the:

- mill at Rocky Point Sugar Mill precinct, Woongoolba
- main house at Rocky Point Sugar Mill precinct, Woongoolba
- butcher shop at Rocky Point Sugar Mill precinct.

The study also identified a further 28 places of local-heritage importance, of which seven are located at Eagleby, three at Yatala and 18 in the canelands and coastal areas—including buildings, farm structures, cemeteries, archaeological sites and landscape features relating to the settlement and development of the area from the 1860s.

There are no Indigenous cultural heritage places in the study area shown on the Indigenous Cultural Heritage Map produced by the Department of Environment and Resource Management. However, this map shows only 200 of the most important Indigenous cultural heritage sites in Queensland.

There are records of other significant places in the Aboriginal and Torres Strait Islander Cultural Heritage Database, and the Aboriginal and Torres Strait Islander Cultural Heritage Register, which are administered by the Department of Environment and Resource Management. There may also be places of Indigenous cultural heritage that are as yet unrecorded. This would need to be investigated as part of more detailed local-planning or site-development studies.
2.7. Population characteristics

The estimated resident population of the study area at 30 June 2006 was 17,096 people—an increase of more than 4,000 between 1996 and 2006, or 2.7 per cent a year on average. In comparison, Queensland’s average annual population growth rate over the same period was 2.1 per cent.

Population growth was strongest in the urban residential areas. The largest absolute growth between 2001 and 2006 occurred in Ormeau, which experienced an average annual increase of almost 500 people. Eagleby’s population change between 2001 and 2006—an average annual increase of 175 people—was the second-highest in the study area.

The labour force in the study area comprised 5079 people in 1996 and reached 6865 in 2006—an increase of 1786 people, or 35.2 per cent. The proportion employed full-time remained at approximately two-thirds of the labour force between 1996 and 2006, with about one-quarter employed part-time. The unemployment rate in Eagleby (9.3 per cent) was the highest in the study area. Also, Eagleby had the lowest labour force participation rate (51.0 per cent). Overall, excluding Eagleby, the labour force participation in the study area was consistent with that of Queensland (61.1 per cent).

In the study area as a whole, the proportion of households that earned weekly incomes of $1700 and over (13.9 per cent) was smaller than the proportion of total Queensland households (20.7 per cent) in this income range. This was largely due to Eagleby, where only 7.2 per cent of households were in this income range. Ormeau had the highest proportion of high-income households (26.9 per cent) followed by Steiglitz (23 per cent).

Households earning less than $250 per week comprised 6.9 per cent of all households in the study area, compared to 6.6 per cent for Queensland. The highest proportions of households in this income category were found in the rural area (9 per cent) and Eagleby (7.9 per cent).

According to 2006 Australian Bureau of Statistics Census data, Eagleby is the only location in the study area that exhibits a high level of socio-economic disadvantage.

2.8. Major development proposals

Map 2.8 shows the major development proposals in the study area. The map includes those proposals discussed in the issues and options paper and additional major proposals that were the subject of specific submissions received on the issues and options paper.

The i-METT (integrated motorsport, education, tourism and technology) development proposal is subject to a separate state government assessment process under part 4 of the State Development and Public Works Organisation Act 1971 and was not evaluated as part of this strategic planning study.

Recent development proposals for extractive industry have highlighted the need to identify an appropriate balance between protecting good quality agricultural land and ensuring extractive resources continue to meet the demands of the construction industry in South East Queensland.
2.9. Major infrastructure

Map 2.9 shows the existing and planned major infrastructure in the study area. The future expansion and upgrade of infrastructure to 2021 is aligned with the Gold Coast City Council planning scheme.

Gold Coast City Council is continuing to investigate proposals to improve the reliability of supply of treated wastewater to the study area for agricultural irrigation and other purposes.

The study area also contains an extensive network of floodways and outlet structures constructed as part of the Woongoolba Flood Mitigation Scheme in the 1970s and 1980s to alleviate flood impacts. The purpose of the scheme was to bring marginal areas into sugarcane production and ensure the majority of canelands were sufficiently protected from floodwaters.

Outside the Urban Footprint, the local road network is generally of two-lane rural standard. There are emerging issues associated with conflicts between various user groups, ranging from recreational cyclists to farm-equipment and sand haulage trucks. The extent and cost of any road network upgrades required to service new development proposals needs to be carefully considered to achieve safety and capacity objectives.

Strategic infrastructure requirements to support major new development proposals—such as an expanded marine industry precinct—have been identified through technical studies undertaken by consultants Parsons Brinkerhoff Australia Pty Ltd.
3. The planning context

The issues and options paper (Department of Infrastructure and Planning, 2008), which was released as part of this study in August 2008, provided a comprehensive analysis of the planning context of the North East Gold Coast. The analysis addressed a wide range of matters, including the state’s response to the key global issues of climate change and peak oil. The draft strategy, which was released in December 2008, considered the issues and options paper, together with the following relevant planning documents:

- SEQ Regional Plan 2005–2026
- Draft SEQ Regional Plan 2009–2031
- State Planning Policies (SPP)
  - SPP 1/92: Development and the conservation of agricultural land
  - SPP 2/02: Planning and managing development involving acid sulfate soils
  - SPP 1/03: Mitigating the adverse impacts of flood, bushfire and landslide
  - SPP 2/07: Protection of extractive resources
- Gold Coast City Council’s draft Local Growth Management Strategy
- Gold Coast City Council planning scheme
- SEQ Coastal Management Plan.

3.1. Summary of key planning issues

Climate change is predicted to cause rises in sea level, increased risk of storm surge and fewer, but more intense, rainfall events—all of which will increase the risk of flooding in low-lying coastal areas such as those in the North East Gold Coast.

Climate change is expected to result in decreased rainfall, particularly in inland areas of Queensland. This suggests it would be wise to retain productive agricultural land in higher-rainfall areas closer to the coast, and particularly in areas where treated effluent can be made available for irrigation.

The study area contains significant scenic amenity and landscape characteristics that are valued by residents and visitors. The scenic amenity of the study area should be maintained or enhanced through careful management of view corridors.

The protection of the agricultural resources in and around our major population centres is necessitated by the need to improve Queensland’s resilience to peak oil scenarios and to promote renewable energy sources, including biofuels such as ethanol.

The SEQ Regional Plan 2005–2026 included the non-urban parts of the study area in the Regional Landscape and Rural Production Area regional land use category, and identified it as a key inter-urban break between Brisbane and the Gold Coast. This is consistent with the strategic directions of the SEQ Regional Plan 2009–2031 and South East Queensland Infrastructure Plan and Program 2009–2026 (SEQ Infrastructure Plan and Program 2009–2026).

The extent and nature of future marine industry uses in the Steiglitz area and elsewhere in the study area needs to be determined.

The study area’s good quality agricultural land and extractive resources are identified and protected by SPPs 1/92 and 2/07 respectively. Some lands in the study area contain both resources. Conflicts between the policies should be resolved by identifying priority areas for extractive industry use.
Under the guideline to SPP 1/03, land use strategies that do not increase the number of people living and working in natural hazard management areas (e.g. flood-prone areas) are preferable.

The guideline to SPP 2/02 states that, where practicable, land use strategies should avoid or minimise disturbance to acid sulfate soils.

The Gold Coast City Council planning scheme makes a number of land uses (that would otherwise be acceptable in the rural domain) undesirable or inappropriate development when occurring on a site identified as good quality agricultural land. This limits the range of development opportunities available to many rural landholders in the study area. Some of these land uses may be acceptable—provided detrimental impacts on the productive capacity of good quality agricultural land are avoided.

During public consultation on the issues and options paper, rural landholders in the study area advised that they had been approached about allowing parts of their land to be used to store large vehicles and equipment for general transport—to take advantage of the area’s large rural lots and accessible location between Brisbane and the Gold Coast. They pointed out that such a use would be very similar to, and compatible with, the storage of their own farm equipment. The use is defined as ‘outdoor storage area’ in the Gold Coast City Council planning scheme, which designates the development as undesirable or inappropriate in the rural domain. Vehicle storage, other than that used for transporting forestry, primary industry produce or resources, is considered an urban activity and is prohibited in the Regional Landscape and Rural Production Area under the regulatory provisions of the SEQ Regional Plan 2009–2031.

Under the SEQ Regional Plan 2009–2031, the regulatory provisions for the Regional Landscape and Rural Production Area have been revised, easing restrictions on tourist activities, sport and recreation activities and community activities. Larger-scale activities in these categories of land use are now permitted, providing more options for rural land uses. These uses are still subject to controls in the Gold Coast City Council planning scheme.

The intended future use of the good quality agricultural land adjoining the eastern edge of the Yatala enterprise area—which has been included in the Urban Footprint in the SEQ Regional Plan 2009–2031 but retained in the rural domain in the Gold Coast City Council planning scheme—needs to be resolved.

Future land uses in medium- and high-risk flood areas (areas with a predicted flood depth of more than 0.5 m) should be limited to activities that have specific location requirements—such as marine industry, which requires a coastal location; extractive industry; or land uses that do not involve large numbers of residents or workers, such as agriculture, open space or recreational activities.

The SEQ Coastal Plan requires coastal biodiversity values to be protected. Important coastal resources identified in the study area are shown on map 2.4 and include the Loganholme–Eagleby wetland complex, marine environments at East Coomera, riparian sections of waterways such as McCoys Creek, and undeveloped tidal waterways such as the Logan River.
4. The economic development context

The issues and options paper provided a comprehensive analysis of the economic development context of the North East Gold Coast. The analysis examined Gold Coast City Council’s *Economic Development Strategy*, which sets the direction for the city’s economic development to 2010; and census employment data for 2001 and 2006. It looked at a range of specific industries and land uses that are relevant to the study area, including extractive industries, agriculture (with a focus on sugarcane production and alternative crops), aquaculture, marine industry and general industrial activities, equine industry, general aviation and outdoor recreation.

4.1. Summary of key economic development issues

4.1.1. Employment and industry

The study area’s proximity to the Yatala enterprise area means it has high accessibility to a wide range of employment opportunities.

There is sufficient undeveloped, zoned and developable land in Gold Coast City to meet likely demand for general industry (i.e. excluding marine industry) purposes until around 2022—without considering the potential for converting other land uses in the Urban Footprint to industrial use. In addition, there is an area of 154 ha of caneland within the Urban Footprint at Stapylton that is currently in the rural domain but is potentially suitable for industrial use. Section 5 of this strategy sets out the intended future use of this land.

4.1.2. Extractive industry

The extractive industry sector provides a relatively low level of direct employment, but is significant as a supplier of sand and rock to concrete product manufacturers in the Yatala enterprise area and the construction industry in the southern Brisbane–Redland–Gold Coast market area. For planning purposes, it would be prudent to assume that the total market area demand for fine sand—estimated at 22 million tonnes to 2031—will be supplied by the study area. This will ensure there are no artificial limitations to supply and provide a buffer against unforeseen increases in demand.

Rehabilitation of extractive industry ponds may provide opportunities for environmental, recreational, aquaculture and industry development in the future. Any development of extractive resources should consider the agricultural productivity of the overlying soil, access to infrastructure and potential impacts on the aquifer storage and recovery area.

4.1.3. Agriculture

Agricultural production in the study area is worth around $25 million a year, distributed across three main industry sectors: sugarcane, plant nurseries and animal production. In addition, agriculture and other primary industries contribute significantly to ecosystem services (see 2.3.2) through scenic amenity maintenance, weed and pest control, environmental management and carbon sequestration.

The economics of the sugar industry means only relatively large cane producers can operate viably as full-time producers. The region’s smaller farms are run on a part-time basis (an average of 650 farmer hours per year for a 66 ha farm), supplemented by off-farm income.
The long-term viability of the cane industry at Rocky Point is threatened by continued fragmentation of land holdings, and cessation of cane growing by individual (mainly smaller) producers, although some of this land may remain in production via leases to larger producers.

It is not appropriate to identify a minimum threshold of cane throughput below which the Rocky Point Sugar Mill is no longer viable due to the complex interactions between market forces, climatic variables and other factors. In addition, the mill in recent years has diversified into more value-added products, in addition to their sugar operations, and reduced energy costs through synergies with the energy cogeneration plant. However, as a general rule, the mill has sought to maintain an annual production level of over 300 000 tonnes of cane from a gross production area of over 5000 ha (of which 4200 ha is harvested).

If the sugar industry was to become unviable at Rocky Point, either through closure of the mill or for other reasons, there is a range of non-urban uses of the canelands that could be considered. These include larger growers continuing to grow cane for transport to the Condong mill in northern New South Wales, a range of alternative crops that would vary according to soil type and water availability, and other broad-acre uses such as turf farms and wholesale nurseries. Regardless of the crops grown, many of the farms in the study area would continue to depend on off-farm income or other value-adding activities.

Despite the introduction of the SEQ Regional Plan 2005–2026, expectations about potential future land uses mean there is a large speculative component in the rural land values in the study area. The resultant high cost of rural land prevents aggregation of smaller farms into larger, more viable enterprises as is happening in other agricultural regions. As a result, leasing of land for rural activities will continue to be a means of maintaining or expanding production.

Market forces will determine the future of the cane industry at Rocky Point. Regardless, the productive capacity of the good quality agricultural land in the study area should be protected as a valuable natural resource, allowing rural producers to invest with confidence.

### 4.1.4. Aquaculture

There is limited potential for the aquaculture industry to expand in the study area at present, due to the strict nutrient load limits set by the Department of Environment and Resource Management for the Logan River. However, Queensland Primary Industries and Fisheries (part of the Department of Employment, Economic Development and Innovation) is currently involved in research programs investigating bioremediation techniques that could allow aquaculture businesses to operate without the need to discharge effluent.

Any expansion of the aquaculture industry is likely to occur through organic growth of existing producers located at Woongoolba and Alberton in the north of the study area, or as new, high-intensity operations that require minimal infrastructure, for example recirculation type operations. The expansion of aquaculture activities should occur only on poor quality agricultural land.

### 4.1.5. Marine industry

The marine industry is a major employer and contributor to the Gold Coast economy, and has been identified as a key industry growth sector by the Queensland Government and Gold Coast City Council. However, there is limited potential for the expansion of existing marine industry areas at Coomera, Horizon Shores and Steiglitz. Steiglitz was identified in the SEQ Regional Plan 2005–2026 as an economic activity centre for investigation as a marine industry precinct.

The Department of Infrastructure and Planning is preparing a Southport Broadwater to Southern Moreton Bay Marine Infrastructure Master Plan (master plan), which is
expected to be completed in 2009. For the purposes of the master plan, ‘marine infrastructure’ includes slipways and other vessel-haul-out facilities, marine-related manufacture, service, maintenance and refit of vessels, and marinas and hardstand and dry-boat storage facilities, among other things.

The North East Gold Coast study area falls within the master plan area. The master plan is expected to identify areas that may have the potential to meet future marine-related infrastructure needs; and triggers for the timely provision of infrastructure, including a network of major navigation channels that will ensure safe passage for a range of vessels between the Broadwater and Southern Moreton Bay.

Based on a continuation of the historical marine industry land-take-up rate of eight hectares a year, it is estimated 176 ha would be required over the 22 years from 2009 to 2031.

There is approximately 104 ha of appropriately zoned and suitable land available at Coomera (60 ha) and Steiglitz and Horizon Shores (44 ha), leaving a shortfall of approximately 72 ha to 2031. Based on the experience at the Gold Coast Marine Industry Precinct at Coomera, only around 50 per cent of the gross site area may be suitable for marine industry development, meaning that approximately 144 ha of gross land area may be required to accommodate marine industry development to 2031.

4.1.6. Equine industry

One industry that could play an important role in servicing and supporting tourism and recreation industries within South East Queensland is the equine industry. Horse breeding and recreational horse riding is emerging as a new rural industry in the Gold Coast and Beaudesert areas.

The Gold Coast equine industry is estimated to be worth $20.7 million, or one-and-a-half to three per cent of the market in Queensland (Pacific Southwest Strategy Group, 2005).

The Gold Coast area offers significant opportunities for the equine industry, thanks to its proximity to the Magic Millions Sales. The Magic Millions Sales are recognised as the second-largest equine business in Australia, with sales exceeding $75 million in 2005 and plans to double the business in the near future.

The keeping of more than 10 horses falls within the ‘animal husbandry’ definition in the Gold Coast City Council planning scheme, and is a self-assessable use in the rural domain, whether or not the land is identified as good quality agricultural land. Neither the SEQ Regional Plan 2009–2031 nor the Gold Coast City Council planning scheme prevent rural lands within the study area from being used for animal husbandry.

A system of interconnected, publicly accessible recreation corridors would support the equine industry in providing tourism and outdoor recreational opportunities.

4.1.7. Outdoor recreation

There is increasing demand for sites to accommodate a wide range of outdoor recreation activities that are difficult or undesirable to accommodate in or near urban areas or in areas with ecological values.

Demand exists for a site with a minimum area of around 60 ha to accommodate a number of off-road motorsport activities that are under pressure to relocate from urban areas in Gold Coast City. Regional population growth is putting increasing pressure on waterways used for often conflicting water sports (e.g. water skiing versus fishing). The future rehabilitation of extractive industry sites or buffer areas for major developments may allow for the establishment of significant integrated open space and outdoor recreation networks within the study area.
4.1.8. General aviation

There is no identified demand for an additional general aviation facility, such as an aerodrome, to service the Logan–Gold Coast corridor in the short- to medium-term, although demand may emerge over the next 20 years. Site selection for a new general aviation facility should consider a number of alternative sites, including existing facilities such as Heck Field.

The presence of Heck Field and its proximity to major population centres and universities may generate opportunities to meet the significant international demand for pilot training and other general aviation activities, such as testing of unmanned aviation vehicles. However, related infrastructure would have to be upgraded to support these activities.
5. The strategy

5.1. Background

The non-urban parts of the study area fall predominantly within the Regional Landscape and Rural Production Area regional land use category in the SEQ Regional Plan 2009–2031. This designation protects important extractive resources of regional significance and good quality agricultural land, as well as the rural character of the area, which forms an important inter-urban break between greater Brisbane and the Gold Coast.

This inter-urban break underpins key growth management strategies for South East Queensland by:

- minimising development pressures on the fragile marine environment of southern Moreton Bay, in accordance with the South East Queensland Regional Coastal Plan and the Moreton Bay Marine Park Zoning Plan
- achieving a more sustainable, compact urban form
- supporting the strategic directions in the SEQ Regional Plan 2009–2031 and SEQ Infrastructure Plan and Program 2009–2026.

Extensive areas of the Regional Landscape and Rural Production Area in the study area are flood prone and unsuitable for urban development, particularly in view of the uncertain rainfall and sea-level rise predictions associated with climate change. In addition to flood storage, these areas provide a wide range of other ecosystem services which will become increasingly important in meeting the needs of a growing regional population.

Much of the good quality agricultural land in the study area is currently used for growing sugarcane. A number of groups, including many of the smaller sugarcane producers, question the long-term viability of the sugar industry in the study area. Market forces will determine whether and for how long the sugar industry continues. Regardless of this, good quality agricultural land is an important resource that should be preserved. Its importance is highlighted by the emerging issues of food and energy security associated with the predicted impacts of climate change and rising energy prices.

Work undertaken as part of the Gold Coast City Council’s development of its draft Local Growth Management Strategy shows the Urban Footprint contains sufficient residential land to accommodate projected growth to beyond 2026.

There is sufficient undeveloped industrial land (other than for marine industry) to accommodate growth to 2022, plus additional opportunities to accommodate further growth without having to consider converting other land uses within the Urban Footprint to industry in the future. The Gold Coast City Council proposes to undertake detailed studies to formally identify appropriately located land for conversion to industrial purposes to meet projected needs to 2031.

These considerations demonstrate that the strategic directions and regional land use allocations established in the SEQ Regional Plan 2009–2031 are generally appropriate for the study area.
5.2. Strategic directions

The strategy for the North East Gold Coast maintains the strategic intent of the current regional land use allocations.

The majority of the study area should be retained in the Regional Landscape and Rural Production Area regional land use category. This will protect the area’s natural resources and ability to provide a range of ecosystem services to a rapidly growing regional population, and will also prevent the establishment of incompatible uses that may prejudice the area's future ability to accommodate a range of recreational and other activities (such as pilot training at Heck Field) that require a non-urban setting.

The strategy also makes recommendations that address specific land-use issues identified in the issues and options paper, and summarised in the preceding sections of this strategy. These include:

- identifying priority sites for extractive industry development to resolve the conflict between extractive resources and good quality agricultural land, and ensure the market area’s estimated demand of 22 million tonnes of fine sand to 2031 can be met
- identifying the optimum site(s) to accommodate the 144 ha of gross land area required to meet expected growth in the marine industry sector
- identifying priority sites for nature conservation
- reviewing the Urban Footprint boundary to reflect improved understanding of the area’s rural character, environmental constraints and economic opportunities
- identifying locations that may be suitable for community motorsport and outdoor recreation activities, subject to a more detailed site selection process
- identifying opportunities for rural landowners to have more flexibility in how they use their land—provided the land’s productive capacity is not unduly affected and the land uses are compatible with nearby activities.
5.3. Land use and economic strategy

Map 5.3 shows the land-use allocations proposed for the study area. The changes are in response to the specific land-use issues identified in the issues and options paper. The changes are in keeping with the strategic intent of the regional land use categories in the SEQ Regional Plan 2009–2031.

The site selection processes used to identify the recommended locations for the marine industry expansion area, the priority extractive industry sites and potential candidate sites for community motorsport and outdoor recreation activities are documented in the supporting technical study, *Site selection and infrastructure study for the North East Gold Coast area*, prepared by Parsons Brinkerhoff Australia Pty Ltd.

The following sections provide the rationale for the proposed changes—planning and design guidance that should be considered in more detailed planning and site development activities.

5.3.1. Extractive industries

The priority areas for supplying the market area’s estimated demand of 22 million tonnes of fine sand to 2031 are shown on map 5.3.

These priority areas comprise:

- resource areas that hold current approvals for extractive industry
- resource areas identified for other possible uses, such as marine industry—enabling the resource to be extracted prior to the commencement of the final intended use
- resource areas that are an extension or consolidation of existing, approved or prior extractive industry sites—to limit the extent of haulage and other impacts and facilitate potential post-extraction use for water-based recreation or other activities.

The priority areas are focussed on KRA 63 and KRA 65A1 (at Woongoolba, adjacent to the Logan River), and KRA 65B (west of Jacobs Well), and include two portions of KRA 65A2 that either have development approval or underlie the proposed marine industry expansion area at Steiglitz—to ensure this resource is extracted prior to its alienation by marine industry development.

The Gold Coast City Council planning scheme, which currently designates extractive industry as undesirable or inappropriate in the rural domain, should be amended to designate extractive industry as either code assessable or impact assessable in the identified priority areas.

Development proposals for extractive industry use outside these priority areas should be refused, except where the applicant is able to demonstrate that there is an overriding need for the proposed development because the demand for sand from the study area is unable to be met by the identified priority areas.

A development proposal for extractive industry use outside the identified priority areas is more likely to be favourably considered if it would result in little or no loss of good quality agricultural land. Sites that may be considered for extractive industry include good quality agricultural land that has already been compromised by previous land uses, such as aquaculture; and land that has already been designated for a future use that would result in the eventual loss of good quality agricultural land.

Proposals for extractive industry use should be required to ensure that sites are suitably rehabilitated for subsequent uses, including land- and water-based outdoor recreation, wetland and ecosystem services (including support for nutrient management for aquaculture) and potential flood offsets.
Proposals for extractive industry should be required to demonstrate that the proposal will not detrimentally affect either the potential aquifer storage and recovery area identified by Gold Coast City Council (the deep aquifer), or the shallow aquifer used for irrigation and other purposes by a number of landowners in the study area.

Recommendation 1:
Amend the Gold Coast City Council planning scheme to:
- identify the priority areas for extractive industry use to 2031
- designate extractive industry as either code assessable development or impact assessable development in the identified priority areas
- incorporate requirements to consider site rehabilitation and impacts on agriculture and aquifers into the management of extractive industry in the North East Gold Coast study area.

Responsibility: Gold Coast City Council

5.3.2. Marine industry

The preferred location for the expansion of marine industry activities in the North East Gold Coast study area is shown on map 5.3. The preferred location is at Steiglitz and comprises an area of 127 ha, including approximately 44 ha which are already appropriately zoned and available for development and 83 ha of land added to the Urban Footprint in December 2008. The preferred location adjoins the northern boundary of the Horizon Shores marina—which also takes in expansion areas for marine infrastructure—and would be able to accommodate a significant marine industry cluster similar in scale to the Coomera marine industry precinct.

The priority sand extractive area on the Logan River at Woongoolba may have potential for marine or other activities as end uses—once extractive industry operations have ceased. However, this will be the subject of further investigation.

More specific guidance for each of these sites is provided below.

Related issues concerning marine infrastructure, including channel dredging, are addressed in the complementary Southport Broadwater to Southern Moreton Bay Marine Infrastructure Master Plan, being prepared by the Department of Infrastructure and Planning.

Steiglitz site

This location is one of very few in South East Queensland that has the required characteristics to accommodate marine industry. Development should be limited to predominantly marine industry purposes, with only limited supporting land uses, including minor retail and commercial office space elements (e.g. for marine engineers, boat sales), plus public open space and recreational activities along the shoreline.

The Steiglitz marine industry expansion area is shown on maps 5.3 and 5.4. The site, which is east of Cabbage Tree Point Road, comprises 83 ha and, combined with the adjoining 44 ha of largely undeveloped Marine Industry-zoned land along the waterfront and at Horizon Shores, provides a total area of 127 ha of land for marine industry purposes. Taking the remaining 60 ha of developable land at the Coomera Marine Precinct into account, this should provide for at least 18 years of marine industry development, based on historical take-up rates. The northern part of this site is close to existing residences at Cabbage Tree Point and care should
be taken to ensure only low-impact activities are permitted and appropriate open-
space buffers are provided.

Preliminary investigations suggest the majority of the site is likely to be separated
from the Cabbage Tree Point village and adjoining areas by flood conveyance
channels. These would provide a suitable buffer between higher impact marine
industry uses south of the flood conveyance channels and the existing urban area
at Cabbage Tree Point.

An area of 93 ha west of Cabbage Tree Point Road has been identified as a
potential location for long-term marine industry development. This area should
remain available for productive rural use until the eastern site has been
substantially developed for marine industry purposes.

The eastern site has been included in the Urban Footprint regional land use
category. The western site should be retained in the Regional Landscape and Rural
Production Area regional land use category until the take-up rates for marine
industry land at east Steiglitz and Coomera indicate that an expansion of marine-
industry land is required.

Development proposals for the Steiglitz location should meet the following
planning and design guidelines:

• Slipway and other boat access to be predominantly from internal waterways
  constructed within the site. These internal waterways should have limited
direct connections to southern Moreton Bay.

• Marine industry uses are to be appropriately buffered from residential and
  other incompatible uses. In particular, development on the northern section
  of the site should incorporate low-impact uses in order to avoid harming
  the amenity of adjacent residential dwellings at Cabbage Tree Point.

• Any marine-industry development should be designed to minimise impacts
  on tidal lands and associated fish habitats. Any marine infrastructure
  should incorporate ‘fish-friendly’ design (Fisheries Guidelines for Fish
  Friendly Structures, QDPI&F Guideline FH006)

• Development should be predominantly low-rise in appearance and
  compatible with the existing character of Cabbage Tree Point.

• A continuous public-open-space corridor, including walkways and cycle
  ways, should be provided along the frontage of the site to Moreton Bay—
  except where this would compromise public safety or conflict with waterway
  access to Moreton Bay.

• Land uses with a tourism and recreation focus (e.g. restaurants, coffee
  shops, tourist retail) should be oriented to the bay frontage and public
  open space corridor, without restricting public access to, or along, the
  foreshore.

• Public boat ramps and associated facilities should be provided for
  recreational boating and fishing access to waterways and Moreton Bay.

• The appearance of the site from Stapylton Jacobs Well Road and Cabbage
  Tree Point Road should reflect the importance of the site as the ‘entrance to
  the Cabbage Tree Point community’.

• Development should be staged to ensure that the fine sand resources on
  the site are extracted prior to development.
Recommendation 2:
Include the eastern site at Steiglitz in the Urban Footprint regional land use category in the SEQ Regional Plan 2009–2031, with explanatory text limiting potential land use to marine industry, public recreation and limited supporting land uses.
Responsibility: Queensland Government, Department of Infrastructure and Planning

Recommendation 3:
Amend the Gold Coast City Council planning scheme to include the eastern site at Steiglitz in the Marine Industry domain, and include appropriate planning and design requirements to guide future development of the site.
Responsibility: Gold Coast City Council

Recommendation 4:
Prepare a master plan for the entire marine precinct within the Urban Footprint, showing its relationship and connectivity with adjoining sites, including the Horizon Shores marina and the potential western expansion area; and protecting the residential amenity of Cabbage Tree Point.
Responsibility: Gold Coast City Council

Woongoolba site
The eastern portion of this site (Lot 20 SP144204) has approval for extractive industry use and the western portion (Lot 7 RP207899) is subject to development assessment for extractive industry. The whole site is identified as a priority sand extraction area. The post-sand-extraction development potential of the site for other uses may be constrained by unsafe depth and velocity of flood flows through the site and relatively shallow access channels in the Logan River. These issues will need to be resolved through further investigation.

An extractive industry is an acceptable use in the Regional Landscape and Rural Production Area. Due to the uncertainties associated with the long-term post-extractive use of this site, it is proposed that the site remain part of the Regional Landscape and Rural Production Area.
5.3.3. Yatala enterprise area expansion

Investigations undertaken as part of the development of the issues and options paper identified an area of approximately 154 ha between the boundary of the Yatala enterprise area and Jacobs Well Road, and Burnside Road and Rossmans Road at Stapylton. The intended future use of this area—identified on map 5.3—requires clarification.

This area is currently included in the Urban Footprint in the SEQ Regional Plan 2009–2031, but is included in the rural domain and identified as good quality agricultural land in the Gold Coast City Council planning scheme.

This land was included in the Urban Footprint mainly to accommodate the future expansion of the Yatala enterprise area. The southern part of the area includes the separation area to Key Resource Area 69B. In addition, as outlined below in section 5.3.5, part of this area may provide a suitable location for a community motorsports or other sport and recreation facility.

Recommendation 5:
Amend the Gold Coast City Council planning scheme to include the subject area (excluding areas proposed for sport or recreation facilities) in the Future Business and Industry domain and ensure that the separation area for Key Resource Area 69B is protected.

Responsibility: Gold Coast City Council

5.3.4. North Ormeau

An area at North Ormeau has been considered for economic and employment-generation opportunities as an amendment to the Urban Footprint boundary. Situated between Goldmine Road and the Brisbane–Gold Coast railway line and totalling approximately 200 ha, it adjoins an existing residential area to the south and the Yatala enterprise area to the north. Education Queensland is currently constructing a new high school on Goldmine Road, opposite the southeast portion of the site. Part of the area may have potential for economic and employment-generation opportunities, as an extension to the Yatala enterprise area.

The area will ultimately be separated from the balance of the Regional Landscape and Rural Production Area by the construction of the intra-regional transport corridor (IRT). This corridor is not expected to be constructed until after 2026.

Part of the site is good quality agricultural land (108 ha), and large areas are subject to flooding associated with the two creeks that pass through the site. Open space/drainage corridors extending from Prairie Reserve to Sandy Creek have the potential to provide opportunities for regional sports and recreation facilities to service the growing population in the northern Gold Coast area.

It would be premature to change the designation of this land in the SEQ Regional Plan until it is clear that additional land for industry and recreational purposes is required in this locality.
5.3.5. Community motorsports

Gold Coast City Council has identified a pressing need for a site to accommodate community motorsport activities that need to relocate from existing sites in proximity to residential areas.

An analysis of potential locations in the North East Gold Coast study area suggests the most suitable location for an outdoor motorsports facility is likely to be within, or adjacent to, the Yatala enterprise area expansion area. This area, called the Outdoor Sports and Recreation Investigation Area, is shown on map 5.3. It has the following favourable characteristics:

- relatively remote from residential land uses
- a high ambient noise level associated with noise from the Pacific Motorway, rail corridor, the proposed IRTC and existing and future industry and extractive industry activities
- undulating topography that can accommodate a variety of motorsport activities
- buffering by topography, extractive industry and other existing and proposed industrial activities
- good access from the M1, via Stapylton Jacobs Well Road
- possible long-term expansion into adjacent extractive industry sites to provide a major regional outdoor recreation facility.

Any proposed community motorsports facility should be located and designed to avoid conflict with current extractive industries during their operational life.

Recommendation 6:
Retain land at Goldmine Road, North Ormeau, in the Regional Landscape and Rural Production Area regional land use category.
Responsibility: Queensland Government, Department of Infrastructure and Planning

5.3.6. Heck Field aerodrome

Heck Field aerodrome has been identified as a candidate site for a pilot training facility. There may also be further opportunities for Heck Field to be used for the testing and development of small aircraft, such as unmanned aerial vehicles.

Heck Field aerodrome’s potential suitability for uses of this nature lies in its relatively accessible rural setting away from land uses that would be incompatible with aircraft operations.
The strategy supports the expansion of flying activities at Heck Field aerodrome—provided the proposed activity's access and infrastructure requirements and any environmental impacts can be appropriately managed.

However, development at Heck Field should be limited to activities directly associated with flying activities which, by their nature, can only be conducted at the aerodrome. Other activities, such as pilot training classroom learning, flight simulator training and residential accommodation for students and staff do not need to be located at the aerodrome and should be located elsewhere within reasonable travelling distance of Heck Field aerodrome.

Development proposals that are limited to activities directly associated with flying at Heck Field would be likely to comply with the provisions for development in the Regional Landscape and Rural Production Area. Therefore, it is not necessary to change the regional land use classification of Heck Field to enable an expansion of flying activities.

### Recommendation 8:

**Retain Heck Field aerodrome and the surrounding area in the Regional Landscape and Rural Production Area in the SEQ Regional Plan 2009–2031 to ensure that future flying activities at Heck Field are not compromised by the establishment of incompatible land uses.**

**Responsibility:** Queensland Government, Department of Infrastructure and Planning

### 5.3.7. Rural land uses

Other than the relatively minor changes to the Urban Footprint boundary for marine industry described above, this strategy recommends that the land in the Regional Landscape and Rural Production Area be retained in that regional land use category in the SEQ Regional Plan 2009–2031—to protect its significant values and natural resources, including its role as a major inter-urban break.

However, the strategy recognises that there may be opportunities for rural land owners to diversify their operations to improve the economic return from their properties. Under the Gold Coast City Council planning scheme, the range of uses that may be acceptable in the rural domain varies according to whether or not the land is regarded as good quality agricultural land (i.e. whether the land is included in overlay map OM2 in the planning scheme).

Among the uses that are considered undesirable or inappropriate in the rural domain—only when the land is identified as good quality agricultural land—are bulk garden supplies, café, ecotourism facility, kennel, market, minor tourist facility, outdoor sport and recreation, tourist cabin and veterinary hospital.

A number of these uses may be acceptable within the good quality agricultural land overlay area in the planning scheme—provided they do not compromise the productive agricultural value of the land and are consistent with the protection of natural resources, scenic amenity and rural character. The strategy recommends the Gold Coast City Council undertake a review of the uses currently regarded as undesirable or inappropriate in the good quality agricultural land overlay area (including outdoor storage areas) to ensure that the levels of assessment allocated to the material changes of use are appropriate.

The strategy also recognises the potential of the rural parts of the study area to accommodate a range of sport and outdoor recreation opportunities to meet...
demand from a large and growing regional population. Some of these uses are suited to former extractive industry sites, while other outdoor recreation activities may be compatible with rural land uses.

As outlined above, outdoor sport and recreation is one of the uses the Gold Coast City Council planning scheme identifies as undesirable or inappropriate in the rural domain when the land is identified as good quality agricultural land. This conflict should be addressed by council through the recommended review of its planning scheme.

Recommendation 9:
Review those aspects of the planning scheme relating to development in the rural domain, particularly the good quality agricultural land overlay area—with a view to possibly allowing diversification of activities in these areas consistent with the protection of natural resources, agricultural productivity, scenic amenity and rural character.
Responsibility: Gold Coast City Council and relevant state government agencies

5.3.8. Inter-urban break and wildlife corridor
The inter-urban break, generally located along the Pimpama River, and including Hotham Creek in the west and McCoys Creek in the east, provides the most significant ecological corridor through the study area. This corridor links the core habitat areas of Darlington Ranges in the west with the core habitat areas of southern Moreton Bay and the bay islands. It should be protected, and over time restored and enhanced.

Any strategy for protecting and enhancing this corridor must respect the rights of property owners and should include incentives for voluntary revegetation and other conservation initiatives. For example, the strategy could promote the use of conservation offsets for koala habitat or remnant vegetation lost elsewhere in the region, include a management plan for the identification and maintenance of ecosystem services, and may identify potential changes to the existing planning scheme domains and precincts to better reflect the corridor’s intent and values.

Recommendation 10:
Define the extent of, and develop and implement a strategy for protecting and enhancing, the Pimpama River/Hotham Creek/Mccoys Creek ecological corridor.
Responsibility: Gold Coast City Council
5.4. Infrastructure strategy

5.4.1. Existing and planned infrastructure

This strategy considers the land-based infrastructure necessary to support the proposed land-use and development changes in the study area. Maritime infrastructure is addressed by a separate study—the Broadwater to Southern Moreton Bay Marine Infrastructure Master Plan—being undertaken by the Department of Infrastructure and Planning.

Roads

The study area is serviced by existing and planned transport infrastructure principally located on the western fringe and associated with the Pacific Motorway, the Yatala enterprise area, and the Ormeau and Pimpama residential growth areas. The intra-regional transport corridor (IRTC) is a planned inter-urban connection road that, when built, will pass through the study area. Under the SEQ Infrastructure Plan and Program 2009–2026 (map 5), the IRTC corridor is preserved to the year 2026.

The Department of Transport and Main Roads (DTMR) is undertaking planning for the upgrade of the Stapylton Jacobs Well Road—between the motorway and the future IRTC intersection. These works may be brought forward to accommodate the development of the Precinct Four industrial land in the Yatala Local Area Plan. Starting in 2010–2011, DTMR will also undertake a major investigation into the long-term transport needs between Brisbane and the Gold Coast, including east–west connections. This investigation will cover local road links between Alberton and Beenleigh (east), and between Alberton and Carbrook (east), including north–south linkages.

Gold Coast City Council's Priority Infrastructure Plan includes the upgrade of both Burnside Road and Eggersdorf Road—between the Pacific Motorway service road and the IRTC alignment. It is noted that haul roads are maintained under a regime funded by a differential rate (as opposed to a charge per tonne) and are not included in the priority infrastructure plan.

There are no planned upgrades for the rural-class roads that service the majority of the study area. These roads have evolved through farming community use and are aligned to suit that land use configuration. Consequently, the roads typically have poor geometry and alignment when considered as trunk transport routes.

Public transport

The study area is serviced by the Brisbane–Gold Coast rail line, with stations at Ormeau andBeenleigh and proposals for an additional two stations—north of Eggersdorf Road and at Pimpama. Queensland Transport have advised that while the two stations are being contemplated in forward plans, there is no commitment to timing or funding to establish these stations. There must be significant local supporting land uses in close proximity to generate the demand needed to bring forward the rail stations.

In the case of Pimpama, the development of surrounding land for residential use may provide the critical mass needed to support the station. Ormeau is close to fully developed and may require an additional land-use driver to trigger demand for a new station.

Bus services are provided from Eagleby and Ormeau to Beenleigh and back. There are no bus services within the rural and coastal parts of the study area.

Water supply

Reticulated potable water is either available or planned within the Urban Footprint, excluding the Steiglitz and Cabbage Tree Point development area. Gold Coast Water is currently planning for reticulation to service Jacobs Well, although there is
no clear date for delivery. This service will extend from Yawalpah Road and augment the current supply to the Calypso Bay development, located adjacent to Jacobs Well.

Class B recycled water is delivered by mains from the Beenleigh wastewater treatment plant (WWTP) to the Rocky Point sugar mill and co-generation power plant at Woongoolba. This mains also provides irrigation water to several cane farms along the way.

Gold Coast Water's Northern Wastewater Strategy assumed that approximately 1150 ha of caneland would be available to take Class B treated wastewater from the Beenleigh and Stapylton WWTP to balance its effluent production into the future. Any reduction in the irrigation water consumption must be replaced by another use.

**Wastewater**

Wastewater treatment and disposal is planned for the current Urban Footprint, excluding the Steiglitz and Cabbage Tree Point development area, with catchments directing flow to either the Beenleigh, Stapylton or Pimpama wastewater treatment plants.

A planned upgrade to the Stapylton WWTP will increase its treatment capacity to 22 megalitres a day. The plant will easily accommodate future development within the current Urban Footprint. Gold Coast Water will undertake a sensitivity analysis to determine capacity to service further urban expansion, however the growth of the Stapylton WWTP site is constrained by transport corridors (i.e. the IRTC). The plant will produce both Class A+ and Class B recycled water for a variety of markets.

The Pimpama WWTP/recycled water treatment plant (RWTP) is due for completion and commissioning in 2008 and will service the Coomera and Pimpama region by treating its wastewater and returning Class A+ recycled water.

**Aquifer storage**

One of the initiatives of the Coomera Pimpama Water Futures Project (GCCC, 2004) was an investigation into the location and use of an ancient riverbed aquifer beneath agricultural land. The aquifer is shown on map 2.9. Gold Coast Water is currently assessing the aquifer, which has passed phase 3 modelling (based on bore logs) to establish that the gravel bed is a suitable storage. Phase 4 will involve a test injection of water into the aquifer. Phase 5 will bring the aquifer into full operation.

It is important to note that the aquifer is a store for class A+ treated wastewater and is required for the water balance of the Coomera/Pimpama water management scheme. The aquifer is not a source of irrigation water for occasional agricultural use. Gold Coast Water has yet to establish a tenure and licensing arrangement for access to the aquifer and is unsure whether it will be a Gold Coast City Council- or Queensland Government-managed asset.

**Electricity**

The current Urban Footprint is serviced by the SEQ electricity distribution network, which is expanding to meet extra demand generated by increased development in Yawalpah Road, including the Pimpama WWTP, and the Yatala enterprise area.

Green power is provided within the study area by the Rocky Point sugar mill/distillery/power plant. The Stapylton green power electricity generation plant, located adjacent to the WWTP, consumes five megalitres of Class B water a day.

**Flood protection and drainage**

As outlined in section 2.9, the study area contains an extensive network of floodways and outlet structures that were originally constructed to protect and enhance the productive capacity of the canelands. Landowners in the study area
advise that flooding impacts have worsened over recent times. They attribute this to two factors:

1. Increased runoff and sedimentation and reduced retention times associated with urban development in the western parts of the study area.
2. Inadequate maintenance of floodways.

5.4.2. Infrastructure requirements for specific land uses

**Marine industry**

**Roads**

The intent of the transport strategy for the marine precinct is to direct traffic to the IRTC and M1, rather than local roads. Traffic composition also needs to be considered, with marine industry activities likely to generate trips by higher-mass-limit and over-dimensional vehicles. This type of traffic will be problematic on the narrow, poor-geometry and light-pavement roads that are typical in the area.

The extension to the marine industry by 144 ha (gross) will add approximately 11 736 trip ends per day to the road network (72 ha x 163 trip end/ha). Traffic volumes of this order, in addition to current volumes, will exceed a two-lane rural road capacity of 14 000 vehicles per day (Gold Coast City Council Land Development Guidelines) and require:

- significant upgrading of Stapylton Jacobs Well Road. The required upgrade would involve road widening and realignment to provide four lanes ultimately and improve the horizontal geometry (enhancing visibility and safety) of the road. (Note: this is in addition to DTMR’s planned upgrade of Stapylton Jacobs Well Road between the Pacific Motorway service road and the IRTC.

- upgrading of Cabbage Tree Point Road and intersection.

Stapylton Jacobs Well Road is a state-controlled road and any future upgrade to the road would be the responsibility of DTMR. Gold Coast City Council would be responsible for upgrading Cabbage Tree Point Road.

Excluding land acquisition, the estimated cost\(^2\) of construction of the four-lane road beyond the IRTC, to connect to Cabbage Tree Point Road, is $33 million. Excluding land acquisition, the estimated cost of constructing Cabbage Tree Point Road to the future alignment of the Stapylton Jacobs Well Road, is $5.25 million.

**Water**

The proposed 144 ha (gross) of marine precinct industrial land will deliver 1152 equivalent tenements (ET) at Gold Coast City Council planning scheme population rates (72 ha net developable area at 16 ET/ha).

There is a commitment to bring water to Jacobs Well from Yawalpah Road. To satisfy the planned growth, it is proposed that this line be extended with a 200 mm diameter main to Cabbage Tree point to service the town and the future marine industry area at Steiglitz. The estimated cost of this extension is $2.7 million (6 km of 200 mm water main at $450/m).

There may be opportunities to augment the supply with treated Class A+ wastewater from the planned expansion of Jacobs Well’s water supply. This water could be used for fire fighting, wash down and other ancillary uses. The proposed marine industry will require 6 km of 150 mm potable water main ($2.1 million) and 6 km of 100 mm recycled water main ($1.5 million) costing an estimated total of

---

\(^2\) The preliminary work by Gold Coast City Council on the additional land required for marine industry indicated that approximately 50 per cent of the gross land area would be developable for marine industry purposes.

\(^3\) Pre-project cost estimate: the earliest estimate of project cost, undertaken before project planning or concept design. It excludes land acquisition costs and is generally based on the cost of similar projects, plus a contingency.
$3.6 million. This option would deliver long-term savings in potable water consumption but is subject to a proven adequate supply of recycled water from the Pimpama WWTP.

Wastewater
There is a commitment to service Calypso Bay and Jacobs Well with sewer reticulation draining back to the Pimpama WWTP. This strategy proposes a rising main to pump wastewater from Cabbage Tree Point and the proposed new marine precinct at Steiglitz to the Jacobs Well system.

The proposed marine precinct development of 1152 equivalent tenements would require a pump station ($0.5 million) and 6 km of 150 mm rising main at $350/metre ($2.1 million) costing an estimated total of $2.6 million.

Extractive industry

Roads
Current extractive industry uses designated haul routes in the study area’s existing rural road network. New sites may require some upgrades of local roads that are connected to existing haul routes. Haul roads are maintained under a regime funded by a differential rate and are not included in the priority infrastructure plan.

Any upgrades required would be carried out as a condition of development approval and do not need to be considered as part of this strategy.

Water supply
Sand extraction industries in the study area dredge lakes derived from groundwater and accumulated rainwater. Only a small amount of potable water is required for staff amenities, which could be sourced from on-site rainwater tanks fed by roof water or filled by tanker.

Wastewater
Sources of wastewater would be limited to small domestic wastewater systems installed in staff amenities. They could be easily managed with on-site treatment and disposal.

Community motorsport activities
Transport
The establishment of land- and/or water-based motorsport activities would depend on the availability of land with good access to an existing major road or the use of an existing extractive industry lease. In both cases, access to an existing road transport system is essential. Neither the land- nor water-based motorsport uses are expected to generate traffic volumes that would necessitate major road upgrades beyond those already anticipated in the priority infrastructure plan.

Localised works may be required at intersections to improve road safety but these would be site-specific and could be resolved with detailed design.

Water supply
Water supply is not considered to be a constraint on site selection for either type of motorsport use. Neither the land- nor water-based motorsport uses are expected to be major water users. Rainwater should be adequate to service amenities in the short-term. Water will be required for dust suppression for land-based motorsport activities. Ideally, these sites would be a minimum of 60 ha in size. It is recommended drainage channels be used to collect surface water in dams to provide water for dust suppression.

---

4 Community motor sport activities do not include the i-METT (integrated motorsport, education, tourism and technology) proposal, which is subject to a separate investigation and assessment.
Class B recycled water could be used to augment dam water used for dust suppression. Sites in proximity to Stapylton WWTP/RWTP may be able to take advantage of Class B water supplied by either the Beenleigh WWTP (currently reticulated to the Rocky Point co-generation plant and sugar mill) or Stapylton WWTP/RWTP.

Wastewater

Community and recreational motorsports uses will not generate significant volumes of wastewater. Given the scale of amenities and area of land available, on-site treatment and disposal of wastewater is a viable and preferred option for motorsport activities.

**Summary of infrastructure requirements**

The following table provides a summary of major infrastructure required to support the proposed land use changes in the study area. These are shown on map 5.4.

<table>
<thead>
<tr>
<th>Infrastructure item</th>
<th>Cost(^5)</th>
<th>Delivery agent</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road upgrade of Stapylton Jacobs Well Road (between the IRTC and Cabbage Tree Point Road) to, ultimately, four lanes (rural standard)</td>
<td>$33 m funded from developer contributions (excludes land acquisition)</td>
<td>Department of Transport and Main Roads</td>
<td>Initially two lanes on the ultimate alignment to coincide with the expansion of the marine precinct</td>
</tr>
<tr>
<td>Road upgrade of Cabbage Tree Point Road (between Stapylton Jacobs Well Road to the marine precinct) to, ultimately, four lanes</td>
<td>$5.25 m funded from developer contributions (excludes land acquisition)</td>
<td>Gold Coast City Council</td>
<td>Initially two lanes on the ultimate alignment to coincide with the expansion of the marine precinct</td>
</tr>
<tr>
<td>Extension of 200 mm potable and 150 mm recycled water pipelines from Jacobs Well to Cabbage Tree Point, the proposed marine precinct and Steiglitz</td>
<td>$3.6 m funded from developer contributions</td>
<td>Gold Coast City Council</td>
<td>Construction to coincide with the expansion of the marine industry in the study area</td>
</tr>
<tr>
<td>Extension of a 150 mm rising main and pump station to drain Cabbage Tree Point, the proposed marine precinct and Steiglitz to the Pimpama WWTP</td>
<td>$2.6 m funded from developer contributions</td>
<td>Gold Coast City Council</td>
<td>Constructed to coincide with the expansion of the marine industry in the study area</td>
</tr>
</tbody>
</table>

Section 5.4.3 (below) addresses flood management infrastructure, in response to the flooding issues raised by residents and landowners in the study area.

The land use strategy focuses on marine, industrial and recreational land uses which will not generate additional demand for social infrastructure. Regardless, the issues and options paper found that Cabbage Tree Point, Jacobs Well and Eagleby are generally well provided with social infrastructure.

---

\(^5\) Pre-project cost estimate: the earliest estimate of project cost, undertaken before project planning or concept design. It excludes land acquisition costs and is generally based on the cost of similar projects, plus a contingency.
However, the rapidly growing suburb of Ormeau, like other high-growth areas in Gold Coast City’s northern growth corridor, has a shortage of social infrastructure and services. In recognition of this, Gold Coast City Council released the *Northern Growth Corridor Social Infrastructure Plan* in October 2007. The council and the state government, through the Department of Infrastructure and Planning, are currently preparing a *Northern Gold Coast Coordinated Social Infrastructure Strategy*. The strategy will set out a 10-year plan for social infrastructure for the northern growth corridor.

### 5.4.3. Infrastructure delivery strategy

#### Transport

The development of the marine industry to an ultimate area of 144 ha in the vicinity of Steiglitz will require Stapylton Jacobs Well Road to be upgraded to a better-aligned, four-lane rural road, between the IRTC and Cabbage Tree Point Road. Cabbage Tree Point Road will need to be upgraded to a similar standard.

Stapylton Jacobs Well Road is a state-controlled road: The planning and delivery of the required upgrade is the responsibility of DTMR. Planning for the road upgrade will be a continuation of DTMR’s investigation into the upgrade of Stapylton Jacobs Well Road (between the Pacific Motorway service road and the IRTC) to a four-lane urban standard.

The estimated cost of the four-lane construction, excluding land acquisitions, is $33 million, which will be recovered from developer contributions. The road can be upgraded in stages, commencing with two lanes on an alignment that will allow an ultimate four lanes as demand grows.

**Recommendation 11:**

Undertake road corridor planning and design for the progressive upgrading of Stapylton Jacobs Well Road (between the intra-regional transport corridor and Cabbage Tree Point Road) to provide an improved alignment for, ultimately, a four-lane road that minimises impacts on farm operations and other land uses.

**Responsibility:** Queensland Government, Department of Transport and Main Roads

Cabbage Tree Point Road is a local road controlled by the Gold Coast City Council. Excluding land acquisitions, its upgrade to four lanes will cost an estimated $5.25 million, which will be recovered from developer contributions. The road can be upgraded in stages, commencing with two lanes on an alignment that will allow an ultimate four lanes as demand grows.

**Recommendation 12:**

Undertake road corridor planning and design for the progressive upgrading of Cabbage Tree Point Road to provide an improved alignment for, ultimately, four lanes. Road works will be triggered by traffic demand generated by the proposed Steiglitz marine precinct.

**Responsibility:** Gold Coast City Council
The development of the study area not only requires upgrades to local road infrastructure, it will also increase traffic on the major arterial road systems. The proposed IRTC will be the major north-south inter-urban connection road; it will relieve some of the growing pressure on the Pacific Motorway. While the IRTC preservation has been identified in the SEQ Infrastructure Plan and Program 2009–2026, there is no timeframe for its construction. No planning has been undertaken on the corridor’s future alignment north of the Stapylton Jacobs Well Road—to identify how this significant traffic stream will ultimately be integrated with greater Brisbane. It is noted that, while the resolution of traffic planning for the IRTC is outside the scope of this study, it is considered critical.

Recommendation 13:
Ensure that traffic demand from the proposed Steiglitz marine precinct and other activities in the North East Gold Coast study area is fully considered in the planning and delivery of interchanges on the M1 and the intra-regional transport corridor.
Responsibility: Queensland Government, Department of Transport and Main Roads

Water supply and wastewater
Gold Coast Water is currently reviewing their water-supply planning for Jacobs Well. The expansion of the marine industry precinct at Steiglitz will be a catalyst for bringing forward planning for a potable water supply to service the marine precinct as well as the adjacent Cabbage Tree Point residential area.

This potable water supply may be augmented by the extension of the 100 mm recycled water pipeline also planned to service Jacobs Well. Recycled water can be used as cooling water for industry and for fire fighting and wash down.

These extensions, which are primarily related to the development of the marine industry, will cost an estimated $3.6 million. The construction of this infrastructure will coincide with the early expansion of the marine industry and the costs may be recovered from charges levied as part of the development approvals.

The situation with wastewater is similar to that of water supply. The provision of reticulated drainage for wastewater will extend from the service currently planned for Jacobs Well and will direct wastewater to the Pimpama WWTP. The estimated cost of the extension of the sewer reticulation—primarily related to the development of the marine industry— to Cabbage Tree Point is $2.6 million. The construction of this infrastructure will coincide with the early expansion of the marine industry and the costs may be recovered from charges levied as part of the development approvals.

The alternative to conventional reticulation is a small, decentralised WWTP at Steiglitz that would supply treated recycled water for industrial use. This alternative could be explored during the detailed assessment of development proposals for this precinct.
Recommendation 14:
Amend the Priority Infrastructure Plan to include the proposed marine industry precinct at Steiglitz and to provide for the extension of water supply (potable and recycled) and sewerage services to serve the marine precinct and the Cabbage Tree Point community.
Responsibility: Gold Coast City Council

Flooding and drainage infrastructure
Gold Coast City Council is responsible for the maintenance of flood management infrastructure. The investigation in Recommendation 15 should identify any potential opportunities for the major infrastructure identified for the study area to incorporate flood mitigation/drainage elements. This work typically requires approvals under the Fisheries Act (and a range of other legislation) and so the Fisheries section of the Department of Employment, Economic Development and Innovation should be consulted during the investigation.

Recommendation 15:
Undertake an investigation into local landholders’ and residents’ concerns about worsening flood impacts in the study area, and develop and implement an appropriate strategy to address the issues identified through the investigation.
Responsibility: Gold Coast City Council

5.5. Social and economic impacts of the strategy
An analysis of the likely social and economic impacts of the key elements of the land use strategy—namely the extent of, and preferred locations for, the marine industry, extractive industry, and motorsport and outdoor recreation activities—has been undertaken (Foresight Partners, 2008).

The strategy (section 5.3) has many potential benefits for the North East Gold Coast study area, however possible negative impacts also need to be taken into account.

Overall, the largest negative impact is the loss of good quality agricultural land. The recommended strategy would potentially alienate an estimated 159 ha, or 2.2 per cent, of the good quality agricultural land in the study area. This is not expected to jeopardise cane-growing activities and the area will retain its predominantly rural character as intended in the SEQ Regional Plan 2009–2031. An additional 100 ha of good quality agricultural land may be lost if the western part of the Steiglitz marine precinct is ultimately developed and if outdoor sporting facilities are located in the Urban Footprint at Gilberton.

An assessment of the feasibility of transporting cane to the Condong Mill in northern New South Wales was undertaken (Alliance Economics, 2008) to determine whether, in the event the Rocky Point Sugar Mill closed, it would be
feasible for Rocky Point cane growers to remain in the industry. In summary, the assessment found the Condong Mill would welcome additional cane to increase its throughput, but that transport costs would need to be subsidised to the tune of $25/tonne of cane to compare with the costs of transporting cane to the Rocky Point Sugar Mill.

Development of additional industry in the study area is likely to create more jobs. The extractive industry and possibly outdoor recreation and community motorsport enterprises are expected to offer employment opportunities in the short term. The extractive industry will also generate downstream economic opportunities in the sub-region and region.

In the long term, the expansion of the marine precinct will absorb the greatest proportion of additional employees. Due to the specialised nature of the marine industry, many of these workers are likely to be sourced from outside the study area, boosting population growth.

Increased traffic resulting from an expansion of industry is likely to have some negative impacts. Traffic impacts stemming from sand extraction can be mitigated with suitable sequencing of development; the negative impacts resulting from the expansion of the marine precinct at Steiglitz are expected to be greater. Although such development could potentially result in infrastructure upgrades, and thus positive impacts, residents near Steiglitz are still likely to be affected by increased traffic.

Rehabilitation and reuse of past extraction sites at Jacobs Well and on the Logan River would allow land that might otherwise remain under-utilised to be developed for higher-order uses. This will provide benefits to the local area, if done correctly. Increased outdoor recreation opportunities would benefit not only people living in the study area, but also the wider SEQ community. Furthermore, the uses are predominantly low-intensity and so would maintain the rural character of the North East Gold Coast study area.

Limited population growth is projected within the study area, so the currently high levels of social infrastructure are not expected to be significantly affected. Rapid population growth in surrounding areas, such as Ormeau and Coomera, is likely to lead to the provision of more social infrastructure in these areas that the study-area population as a whole will be able to access.

In summary, the strategy has many potential benefits for the study area, including but not limited to:

- retention of the study area's rural character, and economic and infrastructure development
- increased employment opportunities and community use of rehabilitated past extraction sites.

Although these developments are likely to have some negative impacts, such as loss of good quality agricultural land and increased traffic on certain routes, overall these impacts will be reasonable and restricted to a small number of locations.

---

6 Cost of transport of cane to Rocky Point Mill is $3/tonne. Cost of transport of cane 85km to Condong Mill is estimated to be $30/tonne. If Rocky Point growers contribute $5/tonne, the Condong Mill cooperative would need to contribute $25/tonne.
6. References


Department of Infrastructure and Planning in association with the Gold Coast City Council and Logan City Council (August 2008). *North East Gold Coast strategic land use, economic development and infrastructure study—issues and options paper*, Queensland Government.

Department of Infrastructure and Planning in association with the Gold Coast City Council and Logan City Council (December 2008). *Draft North East Gold Coast land use and infrastructure strategy*, Queensland Government.


Foresight Partners (2008). *The social and economic impact of proposed land use changes*. Prepared for the Parsons Brinckerhoff Australia Pty Ltd study, *Site selection and infrastructure study for the North East Gold Coast area*, undertaken on behalf of the Department of Infrastructure and Planning, Brisbane.


Appendix 1—Maps

Download related maps at:

Abbreviations

ABS  Australian Bureau of Statistics
DCS  Department of Community Safety
DEEDI Department of Employment, Economic Development and Innovation
DERM Department of Environment and Resource Management
DES Department of Emergency Services (until March 2009)
DET Department of Education and Training
DIP Department of Infrastructure and Planning
DME Department of Mines and Energy (until March 2009)
DMR Department of Main Roads (until March 2009)
DNRW Department of Natural Resources and Water (until March 2009)
DoC Department of Communities
DPIF Department of Primary Industries and Fisheries (until March 2009)
DTMR Department of Transport and Main Roads
DTRDI Department of Tourism, Regional Development and Industry (until March 2009)
EPA Environmental Protection Agency (until March 2009))
ET Equivalent tenements
GCCC Gold Coast City Council
GQAL Good quality agricultural land (State Planning Policy 1/92—Development and the conservation of agricultural land)
IRTC Intra-regional transport corridor
KRA Key resource areas (State Planning Policy 2/07—Protection of extractive resources)
RWTP Recycled water treatment plant
S&R Sport and recreation
SEQ South East Queensland
SEQIPP South East Queensland Infrastructure Plan and Program 2009–2026
SPP State Planning Policy
VOR VHF omni range
WWTP Wastewater treatment plant