



Part 8 Infrastructure

Division 1 Priority Infrastructure Plan (PIP)

1.0 Introduction

This is the Priority Infrastructure Plan (PIP) for Gold Coast City Council prepared in accordance with the requirements of the **Integrated Planning Act 1997 (IPA)** and **IPA Infrastructure Guidelines 1/04** and **2/04**.

The PIP will be subject to reviews in accordance with the requirements of IPA and will also be reviewed after the adoption of the Local Growth Management Strategy, which is required under the **South East Queensland Regional Plan 2005-2026 (SEQRP)**.

1.1 Purpose

The purpose of the PIP is to define the scale, type, timing and location of growth in the Gold Coast in order to plan future trunk infrastructure and to determine the charges required to fund it in a timely fashion.

IPA requires integration of land use and infrastructure planning to allow infrastructure to be supplied in a coordinated, efficient and orderly manner. This enables sustainable development and encourages urban growth in areas where adequate infrastructure exists or can be provided efficiently.

1.2 PIP Terms, Acronyms and Definitions

Definitions are provided to assist the reader's understanding of the PIP. Where appropriate, reference should be made to the relevant legislation for statutory definitions.

Term	Acronym	Definition
Additional Trunk Infrastructure Costs		<ul style="list-style-type: none"> a) The costs of supplying infrastructure to development that is: <ul style="list-style-type: none"> i) inconsistent with the assumptions about the type, scale, location or timing of future development stated in the PIP; or ii) is located wholly or partially outside the PIA; and b) Would impose additional trunk infrastructure costs on the infrastructure provider taking into account: <ul style="list-style-type: none"> i) infrastructure charges or regulated infrastructure charges levied on the development; and ii) trunk infrastructure supplied or to be supplied by the applicant in respect of the development. <p>(As per IPA definition.)</p>
Apportionment		The division of costs so that each user pays for their proportional use or planned allocation of the assets needed to provide the Desired Standard of Service.
Assessable Demand		The infrastructure demand for the network, assessed for a development application. This is expressed in equivalent tenements (ET) for Water, equivalent tenements (ET for Wastewater, trip ends (TE) for Transport, impervious hectares (Imp Ha) for Stormwater and equivalent tenements (ET) for Recreation Facilities.
Charge Area		A defined area of an infrastructure network to which an infrastructure charge rate applies.
Chargeable Demand		The demand on infrastructure allocated on the network as a result of a proposed development. It is calculated as the amount of units (either trip ends, impervious hectares or equivalent tenements), after deducting any Credits from the Assessable Demand.
Desired Standard of Service	DSS	The standard of performance for which development infrastructure is planned and provided.



Term	Acronym	Definition
Developable Area		<p>The Gross Site Area less areas constrained by physical constraints arising under the Planning Scheme but limited to:</p> <ul style="list-style-type: none"> ▪ steep slopes and unstable land ▪ areas subject to flooding ▪ bushfire hazard areas ▪ areas of vegetation and ecological significance, including land required for environmental purposes ▪ water catchment areas
Development Infrastructure		<p>a) Land or works, or both land and works for:</p> <ol style="list-style-type: none"> i) urban and rural residential water cycle management infrastructure (including infrastructure for water supply, wastewater, collecting water, treating water, stream managing, disposing of waters and flood mitigation); or ii) transport infrastructure (including roads, vehicle lay-bys, traffic control devices, dedicated public transport corridors, public parking facilities predominantly serving a local area, cycleways, pathways, ferry terminals and the local function, but not any other function, of State-controlled roads); or iii) local public parks infrastructure (including playground equipment, playing fields, courts and picnic facilities); or <p>b) Land, and works that ensure the land is suitable for development, for local community facilities, including:</p> <ol style="list-style-type: none"> i) Infrastructure Charges Schedule Guidelines; ii) Department of Local Government, Planning, Sport and Recreation: <ul style="list-style-type: none"> ▪ community halls or centres; or ▪ public recreation centres; or ▪ public libraries. <p>(As per IPA definition.)</p>
Development Offsets		<p>An amount offset against the infrastructure charge for the relevant infrastructure network to recognise the value (less any contingency amounts) of land or items of trunk infrastructure supplied as part of a development.</p>
Discounting		<p>The process of expressing the value of a future asset in present terms.</p>
Discounted Value		<p>The present value of a future asset.</p>
Equivalent Tenement	ET	<p>A property-based unit of measurement used to indicate infrastructure demand. The demand from a property, with a single detached dwelling is 1 ET.</p>
Establishment Cost		<p>The cost of:</p> <ol style="list-style-type: none"> a) preparing an Infrastructure Charges Schedule, including: <ol style="list-style-type: none"> i) the Desired Standards of Service; and ii) Plans For Trunk Infrastructure used to calculate the charges stated in the Infrastructure Charges Schedule; and b) on-going administration costs: <ol style="list-style-type: none"> i) for the Infrastructure Charges Schedule; and ii) for the infrastructure; and c) for future infrastructure: <ol style="list-style-type: none"> i) all costs for the design, financing and construction of the infrastructure; and ii) for land acquisition for the infrastructure; and d) for existing infrastructure: <ol style="list-style-type: none"> i) the residual financing cost of the existing infrastructure; and ii) the cost of reconstructing the same works using contemporary materials, techniques and technologies; and iii) if the land acquisition for the infrastructure was completed after 1 January 1990 – the value of the land at the time it was acquired, adjusted for inflation. <p>(As per IPA definition.)</p>



Term	Acronym	Definition
Estimated Resident Population	ERP	The estimated total population less visitors.
Fee Simple		Outright, unqualified ownership of real estate, free of any liens or other claims against title.
Fraction Impervious		The part of a catchment/ site which is impervious, expressed as a decimal or percentage.
GCCC Planned Demand		The planned demand for a specific site (size and location) based on the GCCC planned infrastructure calculations.
Gross Floor Area	GFA	The total floor area of a building measured from the outside of the external walls or from the centre of party walls. This term includes all roofed areas, except for the area of any roof overhang, beyond the perimeter building walls. (Refer to Planning Scheme for further details.)
Gross Site Area		The total area of the site.
Hectare	Ha	An area of 10,000m ² .
Impervious Area		A surface or area within a Stormwater drainage catchment where the majority of rainfall will become runoff (no infiltration).
Impervious Hectare	Imp Ha	An impervious area of 10,000 m ² .
Infrastructure		Land, facilities, services and works used for supporting economic activity and meeting environmental requirements. (As per IPA definition.)
Infrastructure Agreement	IA	An agreement about payment for, or the supply of, infrastructure. (As per IPA definition.)
Infrastructure Charges Notice	ICN	A notice requiring the payment of an infrastructure charge stating: a) the amount of the charge; b) the land to which the charge applies; c) when the charge is payable; d) the trunk infrastructure network for which the charge has been stated; and e) the person to whom the charge must be paid. (As per IPA definition.)
Infrastructure Charges Schedule	ICS	A schedule adopted by a local government that states charges for the establishment cost of trunk infrastructure in the Local Government's area in accordance with Chapter 5, Part 1, Division 4 of the IPA . (As per IPA definition.)
Infrastructure Credit		The credit which may be attributed for previous contributions or an existing lawful use or existing lawful right permitted under the current planning scheme, on the site at the time of lodging the application. Infrastructure credits are determined for each network.
Integrated Planning Act 1997	IPA	An Act for a framework to integrate planning and development assessment so that development and its effects are managed in a way that is ecologically sustainable, and for related purposes.
Land Notice		For development infrastructure that is land, the local government may give an applicant a notice, in addition to or instead of, an Infrastructure Charges Notice, requiring the person to: a) give to the Local Government, in fee simple, part of the land the subject of the development application; or b) give to the Local Government, in fee simple, part of the land that is the subject of the development application and an infrastructure charge. (As per IPA definition.)



Term	Acronym	Definition
Local Area Plan	LAP	A detailed planning instrument that forms the basis for assessing a development application within its boundary.
Management Lot		A parcel of land within a development, which has been set aside for reconfiguration or development at a later date.
Material Change of Use	MCU	A development application to change the use of a premises means generally: a) the start of a new use of the premises; or b) the re-establishment on the premises of a use that has been abandoned; or c) a material change in the intensity or scale of the use of the premises. (As per IPA definition.)
Multi Unit Dwelling	MUD	A collective term for multiple dwellings on a lot, including Attached Dwellings (dwellings attached to, or touching another dwelling), Apartments (dwellings that have another dwelling above or below) and Medium Density Detached Dwellings (multiple detached dwellings on a lot).
Net Developable Area	NDA	The Developable Area less: a) areas required for internal roads; b) areas required for trunk and non-trunk infrastructure; and c) areas otherwise required to be protected under the Planning Scheme but not taken into account in the definition of Developable area, including: i) areas required for buffers; ii) areas required to be the subject of voluntary statutory covenants under the Land Titles Act ; and iii) areas occupied by items of heritage significance. Note: When calculating infrastructure charges for the Stormwater Network, Developable Area of Site is used instead of Net Developable Area.
Non-Trunk Infrastructure		Development infrastructure that is not trunk infrastructure. (As per IPA definition.)
Not-For-Profit Community Group		A community group which meets the following criteria: a) there is no profit or gain by individual members of the group; b) its constitution or governing documents prevent it from distributing profits or assets for the benefit of particular persons, both while it is operating and on winding up; c) a profit can still be made, but must be used to carry out the purpose of the group; or d) the group is incorporated under Queensland's Associations Incorporation Act 1981 , or registered under the Collections Act 1966 .
Park Living Lot		A lot within the Park Living Domain or any residential lot in an area that is defined in the Planning Scheme as having a minimum lot size of 4000m ² .
PIP Planning Assumptions		The assumptions about the type, scale, location and timing of future urban growth, which have informed preparation of the PIP.
Planning Scheme		Gold Coast Planning Scheme 2003.
Plans For Trunk Infrastructure	PFTI	Plans that identify the trunk infrastructure network that exists or may be supplied to service future growth on the Gold Coast to meet the Desired Standard of Service stated in the PIP. (As per IPA definition.)
Present Value	PV	The discounted value of a future asset.



Term	Acronym	Definition
Priority Infrastructure Area	PIA	<p>a) The area:</p> <p>i) that is developed, or approved for development, for each of the following purposes:</p> <ul style="list-style-type: none"> ▪ residential, other than rural residential; ▪ retail and commercial; ▪ industrial; and <p>ii) that will accommodate at least 10 years, but not more than 15 years, of growth for the purposes mentioned in paragraph i).</p> <p>b) 'Priority Infrastructure Area' includes an area not mentioned in item a) that:</p> <p>i) the Local Government decides to include in the area; and</p> <p>ii) is serviced by development infrastructure.</p> <p>(As per IPA definition.)</p>
Priority Infrastructure Plan	PIP	<p>The part of a planning scheme that:</p> <p>a) identifies the Priority Infrastructure Area; and</p> <p>b) includes the Plans For Trunk Infrastructure; and</p> <p>c) identifies, if required by a supplier of State infrastructure with a relevant jurisdiction:</p> <p>i) a statement of intent for State-controlled roads; or</p> <p>ii) the roads implementation program under the Transport Infrastructure Act 1994, Section 11; and</p> <p>d) states the assumptions about the type, scale, location and timing of future development on which the plan is based; and</p> <p>e) states the Desired Standard of Service for each development infrastructure network identified in the plan; and</p> <p>f) includes any Infrastructure Charges Schedule.</p> <p>(As per IPA definition.)</p>
Projection Cohort		A time period used for Planning Assumptions, eg. 2011 – 2016.
Proposed Application Demand		Infrastructure demand calculated for a specific proposed development and site.
Q1 to Q100		Rainfall events with an average recurrence interval of 1 in 1 year to 1 in 100 years.
Reconfiguring of Lot	ROL	<p>Means:</p> <p>a) creating lots by subdividing another lot; or</p> <p>b) amalgamating 2 or more lots; or</p> <p>c) rearranging the boundaries of a lot by registering a plan of subdivision; or</p> <p>d) dividing land into parts by agreement (other than a lease for a term, including renewal options, not exceeding 10 years, or an agreement for the exclusive use of part of the common property for a community titles scheme under the Body Corporate and Community Management Act 1997 rendering different parts of a lot immediately available for separate disposition or separate occupation; or</p> <p>e) creating an easement giving access to a lot from a constructed road.</p> <p>(As per IPA definition.)</p>
South East Queensland Regional Plan	SEQRP	The statutory regional planning strategy that guides growth and development in South East Queensland.
Standard Demand Unit	SDU	<p>A measure of demand for each Infrastructure network:</p> <ul style="list-style-type: none"> ▪ Water Supply – equivalent tenement ▪ Wastewater – equivalent tenement ▪ Transport – trip end ▪ Stormwater – impervious hectare ▪ Recreation Facilities – equivalent tenement



Term	Acronym	Definition
State Infrastructure		Any of the following: a) State schools infrastructure; b) public transport infrastructure; c) State-controlled roads infrastructure; and d) emergency services infrastructure. (As per IPA definition.)
State Infrastructure Plans		Plans for the supply of State infrastructure in a Local Government area prepared by the supplier of the State infrastructure.
Statistical Local Area	SLA	An Australian Standard Geographical Classification defined area.
Stormwater Quality Improvement Devices	SQIDS	Infrastructure that serves the function of improving stormwater quality.
Total Use Area	TUA	The sum of all the areas (exclusive of all walls and columns) of all storeys of a building which are used or intended for use for a particular purpose, plus any other area of a site which is used, or intended to be used, for the same purpose. The term does not include: a) areas (inclusive of all walls and columns) with any lift wells, lift motor rooms, air conditioning and associated mechanical or electrical plant and equipment rooms; b) areas with any staircases; c) areas with any common foyer where these are not being used for commercial or retail purposes; d) areas with any public toilets; e) areas with any staff toilets, washrooms, recreation areas and lunchrooms, provided that such areas are not open to persons other than staff; and f) areas used for the access, parking and associated manoeuvring of motor vehicles.
Trip Ends	TE	Is a measure for daily travel demand for the Transport Network. The journey from origin to destination generally counts as one trip end.
Trunk Infrastructure		Development infrastructure identified in a Priority Infrastructure Plan (PIP) as trunk infrastructure. (As per IPA definition.)

1.3 Networks, Systems and Items of Trunk Infrastructure

For the purposes of this PIP, infrastructure planning has been undertaken for the Water Supply, Wastewater, Transport, Stormwater and Recreation Facilities Networks.

Table 1-1 Trunk Infrastructure Networks, Systems and Items identifies the infrastructure networks and systems included in this PIP. Some examples of items of trunk infrastructure are also listed. **Clause 5.0 Plans For Trunk Infrastructure (PFTI)** has further details of specific items of trunk infrastructure included in the respective networks.



Table 1-1 Trunk Infrastructure Networks, Systems and Items

Network	System	Examples of Items Included
Water Supply	Water Supply	Recycled water treatment plants, reservoirs, pump stations and distribution mains.
Wastewater	Wastewater	Wastewater treatment plants, release systems, pump stations, storage lagoons, rising mains and gravity sewer.
Transport	Trunk Road System	Roads to trunk collector, bridges, culverts, intersections and interchanges.
	Public Transport System	Bus stops, shelters, information systems.
	In Road Reserve and Off-Road Pedestrian and Cycle System	In Road Reserve and Off Road Trails – cycle and pedestrian pathways, bridges, culverts, road crossing controls.
Stormwater	Water Quantity	Natural waterways, piped drainage, ‘detention and retention’ facilities, overland flow paths, natural waterways.
	Water Quality	Wetlands, SQIDS, Water Sensitive Urban Design (WSUD).
Recreation Facilities	Sport and Recreation	Land, works and embellishments for Recreation Parks, Sporting Parkland and Outdoor Recreation Parks.
	Other Community Facilities	The land only component for community facilities such as community centres and halls, swimming pools, changing facilities, libraries, clubhouses, and scout and guide halls, etc.

1.4 Time Horizon

The PIP identifies infrastructure that has generally been planned to service growth expected to occur until 2021. Infrastructure required beyond this horizon has also been included in the PFTI for some networks where based on identifiable demands associated with an ultimate population scenario under the planning scheme.

1.5 Infrastructure Charges under the PIP

IPA differentiates between trunk and non-trunk infrastructure. Charges under the PIP Infrastructure Charges Schedule (ICS) relate to the provision of trunk infrastructure.

Council may also impose a condition on the approval of a development application for the supply of non-trunk infrastructure.

Council also has the ability to condition for additional trunk infrastructure costs under **s5.1.25**, of **IPA**.

Calculation of PIP infrastructure charges will generally be triggered by assessable development. Triggers include:

- Reconfiguring of Lot (ROL)
- Material Change of Use (MCU)
- Operational Works (OPW)
- Building Application (BA)
- any combination of these
- any other development

Refer to **Division 2** for PIP Infrastructure Charges Schedules (ICS) and Charging Methodology.

2.0 Priority Infrastructure Area (PIA)

2.1 Purpose

This PIP covers all of the Gold Coast City Council local government area. Contained within this area there is also a Priority Infrastructure Area (PIA) which identifies the area of Gold Coast City that is intended to accommodate urban growth to 2021.

The PIA boundary is shown in **Figure 1-1 Gold Coast City Council PIA Boundary**.

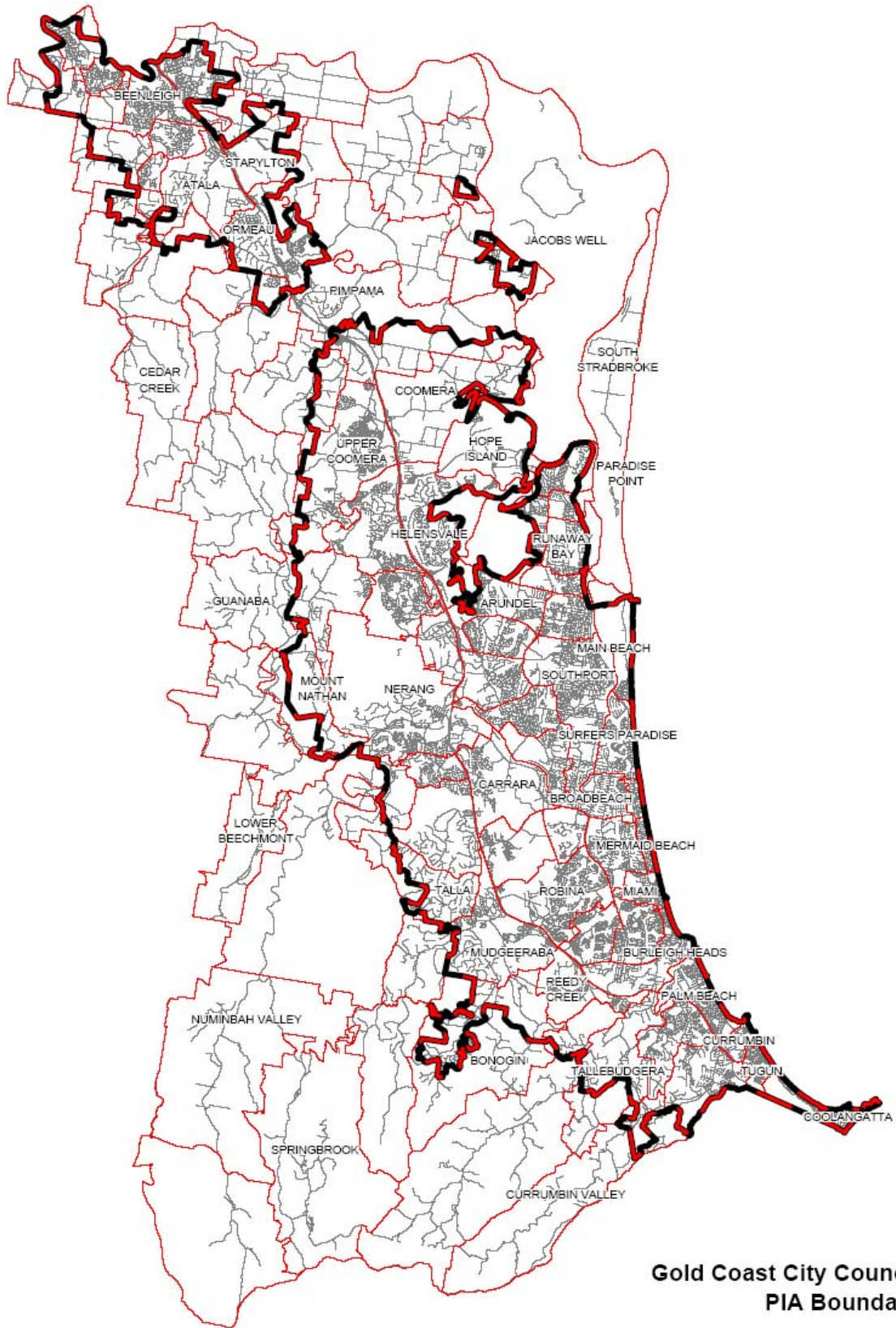


Figure 1-1 Gold Coast City Council PIA Boundary



2.2 Relationship with Planning Scheme Domains and Precincts

The PIA boundary is generally reflective of the location of growth projected for the categories identified in **Subclause 3.3**.

The boundary of the PIA recognises the physical extent of the domains identified in **Subclause 3.3, Table 1-2 Relationship between Planning Scheme and PIP Planning Assumptions**, but excludes the Inter-Urban Break Structure Plan and some small variations to the Park Living Domain in the vicinity of the Inter-Urban Break Structure Plan.

Additionally, the PIA boundary does not correlate directly with LAP boundaries. In instances where the planning intent for the LAP precinct is for open space, rural pursuits, cane farming, conservation or extractive industry these areas have been excluded from the PIA.

2.3 Relationship with the Regional Plan Urban Footprint

The PIA boundary generally aligns with the **South East Queensland Regional Plan's (SEQRP)** urban footprint boundary. There are instances where the PIA lies within the Regional Plan urban footprint because development in these areas is estimated to occur beyond 2021.

Where the SEQRP excludes partial lots from the urban footprint boundary, the PIA will include the lot in its entirety. This minor discrepancy is due to the PIA following cadastral boundaries.

Furthermore, where the SEQRP includes some Rural and Open Space Domains within the urban footprint boundary for completeness, the PIA generally excludes these areas, as Council has no plans to provide trunk infrastructure to these locations.

Inconsistencies will also be evident where there are existing developed areas outside of the SEQRP urban footprint boundary that are required to be serviced in accordance with the requirements for the various domains under the **Planning Scheme**. These areas have therefore been included in the PIA. Additionally, there may be some difference between the two boundaries that can be attributed to the fact that the **Office of Urban Management (OUM)** urban footprint boundary has excluded areas of Park Living whereas under the PIA these areas are included.

There are also areas within the PIA that are included in the Mt Lindesay/ North Beaudesert Study Area.

2.4 Areas Subject to Specific Legislation

Areas subject to specific legislation, such as:

- **The Robina Town Centre Planning Agreement Act 1992**
- **The Integrated Resort Development Act 1987**
- **The Sanctuary Cove Resort Act 1985**
- **The Jupiter's Casino Agreement Act 1983**
- **Infrastructure Agreements**

are included in the PIA, however these agreements will impose charges other than those shown in the PIP Infrastructure Charges Schedules. Charges for these areas are detailed in Council's Infrastructure Agreements register.

2.5 Areas Excluded from the PIA

The PIA excludes:

a) the following village communities:

- | | | |
|-------------------|--------------------|----------------------|
| ▪ North Tamborine | ▪ Bonogin | ▪ Cabbage Tree Point |
| ▪ Lower Beechmont | ▪ Currumbin Valley | ▪ Springbrook |
| ▪ Numinbah | ▪ Steiglitz | |

The reason for this is two-fold. Firstly, the growth in these areas has historically been low. Secondly, infrastructure is not planned in these areas;

- b) the area of the Coombabah flood plain, subject to the Q100 flood event, that floods to a depth greater than 0.5 metres;
- c) Rural Domain – although residential and non-residential development in the Rural Domain, including South Stradbroke Island, has been reported in the PIP Planning Assumptions for completeness; and
- d) extractive industry areas (including buffers) except where they are considered, in the context of long term development, to be a temporary use that may transition to an urban use during the time frame of the PIP.



Otherwise, no urban growth has been assumed to occur in these areas in the time period of this PIP and they are therefore excluded from mapping and planning provisions.

2.5.1 Infrastructure Charging for Excluded Areas

Development that is located totally or partly outside the PIA boundary is considered to be inconsistent with the PIP Planning Assumptions. In these cases an ICN will be issued and Council may elect to also condition the approval of the development application to pay additional trunk infrastructure costs or to provide necessary trunk infrastructure (up to the full cost of the infrastructure).

3.0 PIP Planning Assumptions

The PIP planning assumptions define the anticipated type, scale, location and timing of development in the Gold Coast to 2021 and form the basis of the trunk infrastructure planning contained within the PIP.

This section describes key factors of the PIP Planning Assumptions. Details of the growth projection process are presented in the **Extrinsic Material, Growth Projections and Planning Assumptions (2005)**.

3.1 Distribution and Timing of Growth

The growth in the overall population of the City is guided by the future Estimated Resident Population (ERP). The ERP was verified by the Planning Information Forecasting Unit (PIFU) of the Department of Local Government, Planning, Sport and Recreation (Queensland State Government).

The distribution and the timing of growth in the City have been determined using:

- a) current planning applications and approvals;
- b) vacant land stocks; and
- c) the propensity for redevelopment to occur.

These considerations form the basis for projecting total residential and non-residential development that is expected to occur within the PIA to 2021.

3.2 Projection Cohorts

Development projections for the PIP have been produced using the following time periods, referred to in the PIP as Projection Cohorts. These time periods were chosen so that staging of infrastructure in 5-year periods can be aligned with Australian Bureau of Statistics Census data:

- Existing conditions as at December 2004
- Mid 2006
- Mid 2011 (period 2007 – 2011)
- Mid 2016 (period 2012 – 2016)
- Mid 2021 (period 2017 – 2021)

3.3 Categories of Development Included in Projections

Development has been categorised as either residential or non-residential. Within the residential category, detached dwellings and multi-unit dwellings (MUDs) have been projected separately. Growth in Park Living is differentiated through the location of the Park Living Domain in the **Planning Scheme**.

Non-residential projections have been categorised in order to explain the different demands for infrastructure. With the exception of the Transport Network, rural and transient categories have not been used for planning future infrastructure.

Non-residential projections relate to the following categories in the PIP:

- Retail
- Office
- Industry
- Community – Education
- Community – Health
- Community – Other community uses
- Rural
- Transient



The **Planning Scheme** expresses the type of possible urban development within its various domains and LAP precincts. These have been allocated to the projection categories used in the PIP Planning Assumptions in **Table 1-2 Relationship between Planning Scheme and PIP Planning Assumptions**.

Table 1-2 Relationship between Planning Scheme and PIP Planning Assumptions

PIP Planning Assumption Category	Planning Scheme Domain ¹	Typical Land Uses
Residential	<ul style="list-style-type: none"> ▪ Detached Dwelling ▪ Emerging Community Village ▪ Residential Choice ▪ Tourist and Residential ▪ all categories of Business Centres 	<ul style="list-style-type: none"> ▪ Aged Persons Accommodation ▪ Apartment ▪ Attached Dwellings and Medium Density Detached Dwellings ▪ Caretaker's Residence ▪ Detached Dwelling ▪ Display Home ▪ Eco-Village ▪ Family Accommodation ▪ Relocatable Home Park ▪ Special Accommodation
Rural Residential	<ul style="list-style-type: none"> ▪ Park Living 	<ul style="list-style-type: none"> ▪ Detached Dwelling ▪ Caretaker's Residence ▪ Family Accommodation (urban areas)
Non-Residential – Retail	<ul style="list-style-type: none"> ▪ Integrated Business ▪ Local Business ▪ Fringe Business ▪ Tourist and Residential ▪ Industry 1 and 2 	<ul style="list-style-type: none"> ▪ Bulk Garden Supplies ▪ Convenience Shop ▪ Department Store ▪ Fast Food Premises ▪ Kiosk ▪ Manufacturer's Shop ▪ Market ▪ Retail Plant Nursery ▪ Shop ▪ Shopping Centre Development ▪ Showroom ▪ Stall ▪ Take-Away Food Premises ▪ Tourist Shop ▪ Vehicle Sales Premises
Non-Residential – Office (incl. Commercial)	<ul style="list-style-type: none"> ▪ Integrated Business ▪ Local Business ▪ Fringe Business ▪ Tourist and Residential ▪ Industry 1 and 2 ▪ Marine Industry 	<ul style="list-style-type: none"> ▪ Adult Entertainment ▪ Amusement Parlour ▪ Bed and Breakfast ▪ Brothel ▪ Café ▪ Camping Ground ▪ Caravan Park ▪ Car Park ▪ Child Care Centre ▪ Cinema ▪ Commercial Groundwater Extraction ▪ Commercial Services ▪ Ecotourism Facility ▪ Estate Sales Office ▪ Farm Stay ▪ Funeral Business ▪ Funeral Parlour ▪ Hostel Accommodation ▪ Indoor Recreation Facility ▪ Kennel ▪ Laundromat ▪ Medical Centre ▪ Milk Depot



PIP Planning Assumption Category	Planning Scheme Domain ¹	Typical Land Uses
		<ul style="list-style-type: none"> ▪ Minor Tourist Facility ▪ Motel ▪ Nightclub ▪ Office ▪ Outdoor Sport and Recreation ▪ Private Recreation ▪ Reception Room ▪ Resort Hotel ▪ Restaurant ▪ Restricted Club ▪ Service Industry ▪ Service Station ▪ Surf Life Saving Club ▪ Tavern ▪ Theatre ▪ Tourist Cabins ▪ Tourist Facility ▪ Transit Centre ▪ Transport Terminal ▪ Vehicle Hire Office ▪ Vehicle Hire Premises ▪ Veterinary Clinic ▪ Veterinary Hospital
Non-Residential – Industry	<ul style="list-style-type: none"> ▪ Integrated Business ▪ Local Business ▪ Fringe Business ▪ Industry 1 and 2 ▪ Marine Industry 	<ul style="list-style-type: none"> ▪ Agriculture ▪ Animal Husbandry ▪ Aquaculture ▪ Extractive Industry ▪ Farm Forestry ▪ Fuel Depot ▪ High Impact Telecommunications Facility ▪ Industry ▪ Low Impact Telecommunications Facility ▪ Marina ▪ Minor Aquaculture ▪ Motor Vehicle Repairs ▪ Outdoor Storage Area ▪ Railway Activities ▪ Refuse Disposal ▪ Refuse Transfer Station ▪ Rural Industry ▪ Salvage Yard ▪ Storage ▪ Telecommunications Facility ▪ Warehouse ▪ Waterfront Industry
Non-Residential Community – Education	<ul style="list-style-type: none"> ▪ Community Purpose 	<ul style="list-style-type: none"> ▪ Child Care Centre ▪ Educational Establishment
Non-Residential Community – Health	<ul style="list-style-type: none"> ▪ Community Purpose 	<ul style="list-style-type: none"> ▪ Family Day Care Home ▪ Hospital ▪ Medical Centre



PIP Planning Assumption Category	Planning Scheme Domain ¹	Typical Land Uses
Non-Residential Community – Other Community Uses	<ul style="list-style-type: none"> ▪ Integrated Business ▪ Local Business ▪ Fringe Business ▪ Community Purpose ▪ Tourist and Residential ▪ Industry 1 and 2 ▪ Marine Industry 	<ul style="list-style-type: none"> ▪ Park ▪ Place of Worship ▪ Cemetery ▪ Community Care Centre ▪ Community Purposes ▪ Conservation (Natural Area Management) ▪ Corrective Institution ▪ Open Sports Ground ▪ Public Utility
Non-Residential – Rural	N/A	
Non-Residential – Transient	N/A	<ul style="list-style-type: none"> ▪ Mobile/ Home-based

Note 1: Refer to the relevant Local Area Plan for detail on Land Uses associated with LAP precincts.

3.4 Factors Affecting the Growth Projections

Population and employment projections in the PIP have been undertaken having regard to the following factors:

- a) land available for development;
- b) changing household size;
- c) workforce trends;
- d) floor-space utilisation rates for non-residential development; and
- e) Planning Scheme provisions.

3.4.1 Land Available for Development

Growth in the city is influenced by the amount of land designated for urban purposes under the **Planning Scheme**, as well as constraints which apply to the land including:

- a) steep slopes and land stability (slopes greater than 20%);
- b) flooding constraints (Q100 inundation greater than 0.5m);
- c) bushfire hazard areas (high hazard areas);
- d) vegetation significance/ areas of ecological significance; and
- e) water catchment areas.

3.4.2 Changing Household Size

Table 1-3 Average Household Size by Year outlines the projected change in household size over time for detached dwellings, MUD and tourist accommodation. This change is applied to the Statistical Local Area (SLA) household size to determine the total population.

Table 1-3 Average Household Size by Year

Dwelling Type	Average Number of Persons per Household				
	2004 (ABS estimated)	2006 (projected)	2011 (projected)	2016 (projected)	2021 (projected)
Detached Dwelling	2.55	2.55	2.47	2.47	2.38
MUD	1.72	1.72	1.72	1.72	1.72
Tourist Accommodation	2.319	2.319	2.319	2.319	2.319



3.4.3 Work Force Trends

The Labour Force Participation Rate (LFPR) is the proportion of the resident population aged over 15 and who are in the labour force (employed or looking for employment) expressed as a percentage of the population.

The LFPR been generated using the Australian Bureau of Statistics (ABS) 2001 Census data (working population and resident population). In 2001 the Gold Coast had a labour force participation rate of 61%.

It is expected that the LFPR for the Gold Coast will increase, rising to 63.7% by 2021. This expected increase is as a result of current workers delaying retirement and the increase in casual and part time work. The LFPR is one key element utilised in projecting the future employment rate for the Gold Coast. The employment projections also take into account the inflow and outflow of workers, the capacity of the employment areas, the structure of the Gold Coast economy, ABS journey to work data and the PIP population projected growth.

3.4.4 Floor Space Utilisation Rates for Non-Residential Development

The rate at which floor space is utilised within a projection category is important for projecting the amount of non-residential development that will occur. This relationship is identified in Table 1-4 Average Floor Space Utilisation.

Table 1-4 Average Floor Space Utilisation

Projection Category	Average Floor Space Utilisation (m ² per Employee) 2004
Retail	25
Office	15
Industry	213
Community – Education	N/A
Community – Health	N/A
Community – Other Community Uses	31
Rural	N/A
Transient	N/A

3.5 Planning Scheme Densities

This section defines the density at which development is expected to occur across the city and for which infrastructure networks and items are planned. Densities are defined and specified for residential and non-residential development separately.

Density in this PIP refers to net density, which is the density achieved over the Net Developable Area of the site.

3.5.1 Residential Densities

Residential densities are defined for each domain, including Local Area Plan (LAP) precincts.

Detached Dwelling Domain densities:

- The minimum lot size for Reconfiguring Of Lot (ROL) in this domain is 600m². However, the planning scheme encourages higher densities by permitting a dwelling on 400m² of land. There is no minimum or maximum lot size to which this provision applies.
- Typically in brownfield locations (lot sizes below 2400m²), densities are related to lot size.
- In greenfield locations, defined as lots above 2399m² in size, the creation of new lots generally has to take account of land for local infrastructure as well as the **Planning Scheme** constraints and requirements. In these locations clustering of detached housing on 400m² of land is expected and indeed encouraged taking the average net density for planning infrastructure to 20 dwellings/lots per net developable hectare.



Park Living Domain densities:

- Are defined by the minimum lot size of 4000m² with an average of 8000m².

Multi Unit Dwelling (MUD) development primarily occurs in the range of residential domains from RD2 – RDX.

Analysis of both the characteristics of development and metered water demand confirm the average density provisions for a dominant lot size shown in **Table 1-5 Planning Densities for New Residential Development**. This table identifies the net density provisions across the city and for which future infrastructure capacity is planned.

Table 1-5 Planning Densities for New Residential Development

Domain in Scheme	Constraint/ Density Code		Density Provisions Dwellings or Lots/Ha
Detached Dwelling	If Overlay Map OM5 – Minimum Lot Size applies	OM5 constraint= Minimum lot size of 1000m ²	10
		OM5 constraint= Minimum lot size of 2000m ²	5
		OM5 constraint= Minimum lot size of 4000m ²	2.5
	Other Detached Dwelling (RD1)	Lots up to 500m ²	20
		Lots 501 – 799 m ²	16
		Lots 800 – 1199m ²	16
		Lots 1200 – 2399m ²	18
Lots 2400m ² and above		20	
Park Living		2	
Residential Choice and Tourist & Residential	RD2		33
	RD3		40
	RD4		50
	RD5		100
	RD6		150
	RD7		200
	RD8 and RDX		385
Emerging Communities		Refer to Appendix A	
Village		16	
Local Area Plan	RD1	Lots up to 500m ²	20
		Lots 501 – 799m ²	16
		Lots 800 – 1199m ²	16
		Lots 1200 – 2399m ²	18
		Lots 2400m ² and above	20
	RD2		33
	RD3		40
	RD4		50
	RD5		100
	RD6		150
	RD7		200



Domain in Scheme	Constraint/ Density Code	Density Provisions Dwellings or Lots/Ha
	RD8 and RDX	385
	LL1 (Burleigh Ridge)	16
	LL1 (Hope Island)	2.5
	LL2	16
	RDCH	12.5
	LLR A	1.25
	LLR B	5
	Hope Island (HI) In accordance with approved plan of development and Integrated Resort Development Act 1987	
	Sanctuary Cove (SC) In accordance with approved plan of development and Sanctuary Cove Resort Act 1985	
	Robina Town Centre In accordance with approved plan of development and The Robina Town Centre Planning Agreement Act 1992	
	Jupiter's Casino In accordance with approved plan of development and The Jupiter's Casino Agreement Act 1983	
	Other Precincts	Refer to Appendix A

3.5.2 Non-Residential Densities

The density at which non-residential development is expected to occur is based on the plot ratio that can be achieved on a site. For the purpose of this PIP, the plot ratio is the ratio of the building size over the Net Developable Area of the site.

Non-residential development is considered under the growth projection categories. For Precincts within LAPs the maximum plot ratio has been determined using the Domain that provides the best fit.

Table 1-6 PIP Planning Assumptions Used for New Non-Residential Development defines the plot ratio assumptions used to plan infrastructure. The plot ratios shown were used as a basis to derive GCCC Planned Densities for non-residential domains.

Table 1-6 PIP Planning Assumptions Used for New Non-Residential Development

Type	Planning Scheme Domain								
	Integrated Business	Local Business	Fringe Business	Community Purposes	Tourist & Residential	Industry 1	Industry 2	Extractive Industry	Marine Industry
Retail	0.5	0.6	0.4	-	0.3	0.05	0.05	-	0.05
Office	0.25	0.3	0.05	-	0.25	0.05	0.05	-	0.05
Industry	0.05	0.05	0.05	-	-	0.4	0.4	-	0.3
Education	Site specific								
Health	Site specific								
Other Community Uses	0.05	0.05	0.05	0.05	-	-	-	-	-
Rural	-	-	-	-	-	-	-	-	-
Transient	-	-	-	-	-	-	-	-	-
Non-Residential Plot Ratio	0.85	1.0	0.55	0.05	0.55	0.5	0.5	-	0.4



3.6 Level of Reporting of PIP Planning Assumptions

The following are reported for the whole of Gold Coast City and by SLA:

- Residential Development and Population
- Non-residential Employment and Estimated Gross Floor Area (GFA)

At the time of planning this PIP, Gold Coast contained forty-seven SLAs, which are identified in **Figure 1-2 Gold Coast City Council SLA Boundaries (CDATA 2001)**.

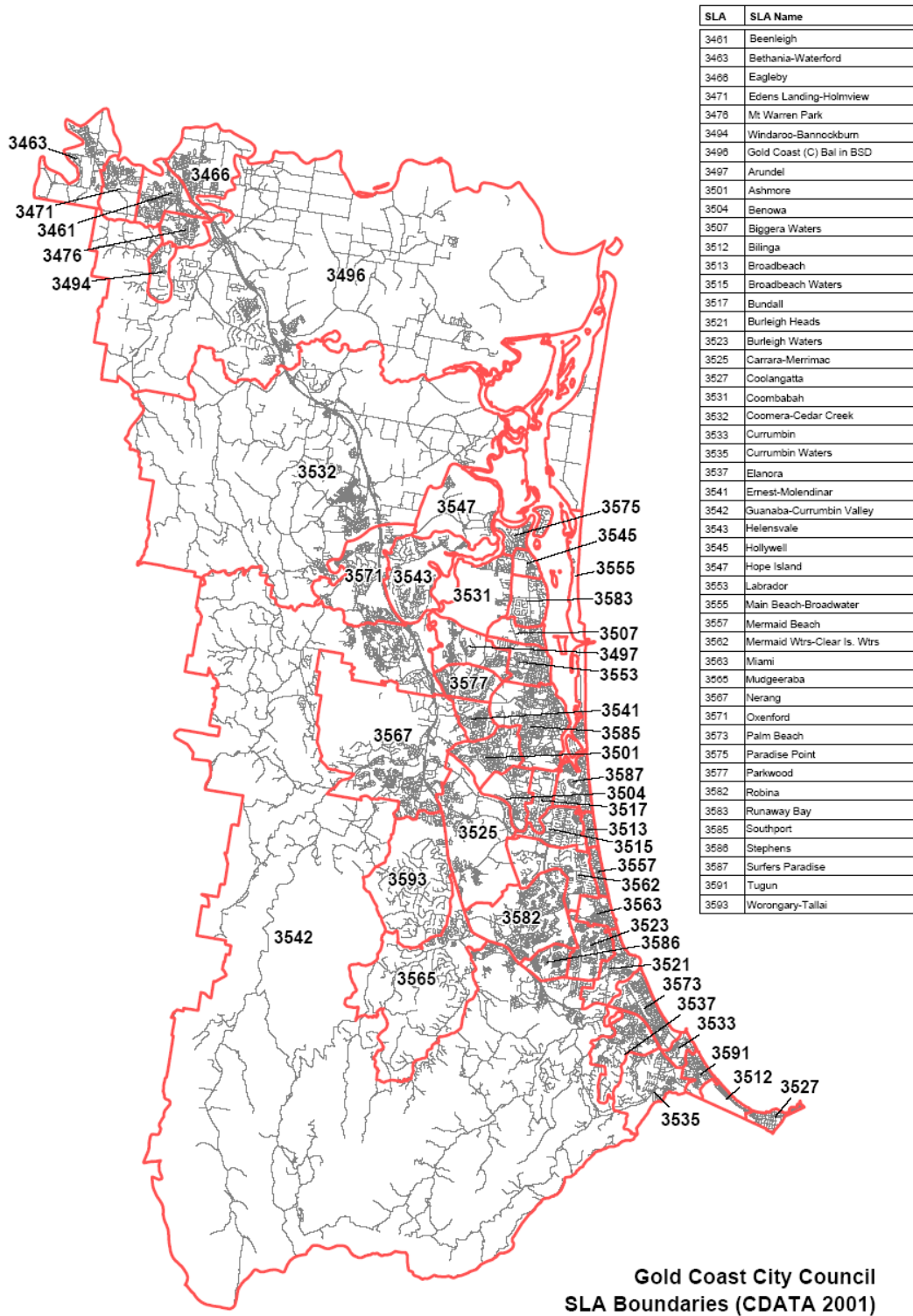


Figure 1-2 Gold Coast City Council SLA Boundaries (CDATA 2001)



3.7 Base Data for Measuring Growth

In order to project growth for the Gold Coast, the following 'base data' for population, existing development and infrastructure has been determined as at December 2004.

Table 1-7 Residential Development and Population at December 2004 provides a breakdown of the residential development stock and population in specified areas.

Table 1-7 Residential Development and Population at December 2004

SLA No.	SLA Name	Detached Stock ¹	MUD Stock ¹	Visitor Dwellings ²	Estimated Visitors Incl ³	Population (Detached) 2004 ³	Population (MUD) 2004 ³	Total Population 2004
3461	Beenleigh	2,332	1,461	0	0	6,037	2,199	8,236
3463	Bethania-Waterford	2,206	245	0	0	4,917	883	5,800
3466	Eagleby	2,586	1,501	0	0	6,953	2,200	9,153
3471	Edens Landing-Holmview	1,705	315	0	0	4,895	664	5,559
3476	Mt Warren Park	1,644	639	0	0	4,796	737	5,533
3494	Windaroo-Bannockburn	991	0	0	0	2,712	7	2,719
3496	Gold Coast (C) Bal in BSD	4,004	1	0	0	11,027	2,932	13,959
3497	Arundel	3,246	512	0	0	8,274	1,321	9,595
3501	Ashmore	3,130	1,773	0	0	8,306	3,021	11,327
3504	Benowa	2,071	822	330	660	5,582	2,525	8,107
3507	Biggera Waters	435	2,942	395	788	1,079	5,514	6,593
3512	Bilinga	166	720	375	871	372	2,127	2,499
3513	Broadbeach	0	2,836	2,837	6,126	0	10,683	10,683
3515	Broadbeach Waters	2,983	582	594	1,188	6,819	2,205	9,024
3517	Bundall	1,510	643	0	0	3,634	710	4,344
3521	Burleigh Heads	1,228	2,999	1,175	2,408	2,763	7,941	10,704
3523	Burleigh Waters	3,936	1,334	0	0	10,046	2,709	12,755
3525	Carrara-Merrimac	5,043	1,979	24	48	12,321	4,082	16,403
3527	Coolangatta	163	2,599	2,159	4,900	341	9,675	10,016
3531	Coombahbah	1,209	2,568	0	0	2,968	6,810	9,778
3532	Coomera-Cedar Creek	4,161	618	5,950	781	11,540	4,533	16,073
3533	Currumbin	675	729	256	593	1,440	1,962	3,402
3535	Currumbin Waters	2,584	1,133	0	0	7,582	2,631	10,213
3537	Elanora	3,676	778	0	0	10,413	2,155	12,568
3541	Ernest-Molendinar	1,658	105	0	0	4,748	200	4,948
3542	Guanaba-Currumbin Valley	5,941	2,819	10	7	18,103	13,840	31,943
3543	Helensvale	4,723	986	0	0	12,611	1,663	14,274
3545	Hollywell	883	288	0	0	2,079	543	2,622
3547	Hope Island	1,429	358	247	494	2,454	3,430	5,884
3553	Labrador	1,346	7,825	297	670	3,164	14,220	17,384



SLA No.	SLA Name	Detached Stock ¹	MUD Stock ¹	Visitor Dwellings ²	Estimated Visitors Incl ³	Population (Detached) 2004 ³	Population (MUD) 2004 ³	Total Population 2004
3555	Main Beach-Broadwater	208	2,214	2,161	4,682	458	8,654	9,112
3557	Mermaid Beach	0	3,462	1,434	3,439	0	9,847	9,847
3562	Mermaid Waters-Clear Island Waters	3,760	2,863	103	206	9,011	5,496	14,507
3563	Miami	880	2,355	880	1,840	1,998	6,152	8,150
3565	Mudgeeraba	2,282	532	20	13	7,418	2,329	9,747
3567	Nerang	7,609	1,795	47	94	20,085	4,864	24,949
3571	Oxenford	3,348	371	0	0	8,812	1,353	10,165
3573	Palm Beach	2,127	4,861	996	2,283	5,218	10,739	15,957
3575	Paradise Point	873	1,345	0	0	1,961	2,192	4,153
3577	Parkwood	2,832	0	0	0	8,623	257	8,880
3582	Robina	4,737	4,453	0	0	12,336	12,394	24,730
3583	Runaway Bay	1,858	2,279	0	0	4,293	4,418	8,711
3585	Southport	4,402	8,287	127	290	9,923	15,126	25,049
3586	Stephens (Varsity Lakes)	1,353	1,383	0	0	3,630	3,439	7,069
3587	Surfers Paradise	1,108	10,054	12,316	26,355	2,655	42,850	45,505
3591	Tugun	675	2,299	774	716	1,670	4,213	5,883
3593	Worongary-Tallai	3,023	0	0	0	9,532	165	9,697
Total		108,739	90,663	33,507	59,452	285,599	248,610	534,209

Notes:

- 1** The numbers for Detached and MUD were derived from the existing Council land use database and detailed land use survey in December 2004.
- 2** The total visitor dwelling numbers were derived from Council land use database on commercial accommodation.
- 3** The population and visitor forecasts were based on Census Collection District (CCD) occupancy rates.

Table 1-8 Non-Residential Employment in Gold Coast 2004 identifies the estimate Gross Floor Area (GFA) for different types of non-residential development and employment across the City in 2004.

Table 1-8 Non-Residential Development and Employment in Gold Coast 2004

Projection Category	Estimate Non-Residential GFA at 2004 (m ²)	Employment at 2004 (Positions)
Retail	1,495,000	59,807
Office	460,395	30,693
Industry	7,629,966	35,131
Education	176,114	11,971
Health	76,596	16,638
Other Community Uses	361,556	9,063
Rural	-	1,853
Transient	-	15,309
Total City	10,199,627	180,465



Table 1-9 Non-Residential Employment in Gold Coast 2004 identifies the distribution of non-residential employment by SLA.

Table 1-9 Non-Residential Development and Employment in Gold Coast 2004

SLA No.	SLA Name	Positions								
		Retail	Office	Industry	Education	Health	Other Community Uses	Rural	Transient	Total
3461	Beenleigh	3,508	867	1,438	404	521	95	40	431	7,304
3463	Bethania-Waterford	122	26	342	273	163	150	21	110	1,207
3466	Eagleby	767	164	252	170	168	292	12	57	1,882
3471	Edens Landing-Holmview	89	19	76	90	80	36	7	44	442
3476	Mt Warren Park	129	28	54	247	166	67	0	41	732
3494	Windaroo-Bannockburn	0	0	0	0	7	0	4	11	22
3496	Gold Coast (C) Bal in BSD	680	145	3,042	261	90	102	495	606	5,421
3497	Arundel	38	26	578	330	225	277	10	206	1,690
3501	Ashmore	1,623	591	1,435	583	472	371	21	457	5,553
3504	Benowa	484	309	211	351	1,030	67	14	133	2,600
3507	Biggera Waters	462	227	175	78	90	233	0	128	1,394
3512	Bilinga	29	6	266	0	34	0	0	33	368
3513	Broadbeach	1,129	1,012	252	100	140	12	4	379	3,028
3515	Broadbeach Waters	4,288	976	241	0	116	53	15	562	6,251
3517	Bundall	3,816	3,866	895	0	275	19	29	779	9,679
3521	Burleigh Heads	3,025	918	1,625	211	407	156	25	568	6,934
3523	Burleigh Waters	1,127	394	164	247	2	39	3	73	2,050
3525	Carrara-Merrimac	916	196	787	552	244	330	41	296	3,361
3527	Coolangatta	583	335	344	131	251	148	13	227	2,032
3531	Coombah	104	22	130	180	40	29	20	55	581
3532	Coomera-Cedar Creek	234	50	1,704	535	329	370	295	565	4,082
3533	Currumbin	60	13	0	221	182	38	34	242	789
3535	Currumbin Waters	148	137	1,422	50	109	358	7	101	2,331
3537	Elanora	1,205	258	205	270	218	380	4	167	2,707
3541	Ernest-Molendinar	360	138	3,640	18	42	20	18	524	4,759
3542	Guanaba-Currumbin Valley	651	471	2,433	1,071	301	918	313	699	6,858
3543	Helensvale	901	221	326	301	208	117	16	207	2,297
3545	Hollywell	0	0	41	0	3	58	0	13	115
3547	Hope Island	1,840	553	360	0	169	215	24	232	3,394
3553	Labrador	485	149	2,170	140	534	268	46	586	4,378



SLA No.	SLA Name	Positions								
		Retail	Office	Industry	Education	Health	Other Community Uses	Rural	Transient	Total
3555	Main Beach-Broadwater	529	113	313	0	44	145	8	378	1,531
3557	Mermaid Beach	1,392	323	373	0	306	50	4	228	2,676
3562	Mermaid Waters-Clear Island Waters	1,366	302	241	239	226	500	7	182	3,063
3563	Miami	463	99	365	159	245	111	12	146	1,599
3565	Mudgeeraba	566	157	326	283	228	147	45	165	1,916
3567	Nerang	5,347	1,168	2,788	475	720	165	83	1,171	11,917
3571	Oxenford	905	193	340	114	175	103	31	431	2,293
3573	Palm Beach	561	789	258	202	282	86	11	205	2,394
3575	Paradise Point	155	54	106	0	54	0	0	96	465
3577	Parkwood	678	145	151	0	93	262	10	86	1,425
3582	Robina	3,917	1,659	766	1,071	892	935	20	844	10,104
3583	Runaway Bay	3,606	783	302	112	308	103	16	245	5,475
3585	Southport	7,454	9,776	2,830	2,156	5,181	913	32	1,267	29,608
3586	Stephens (Varsity Lakes)	7	2	88	19	15	0	0	37	168
3587	Surfers Paradise	3,278	2,794	1,166	221	279	17	19	1,146	8,919
3591	Tugun	295	116	110	0	893	45	7	83	1,549
3593	Worongary-Tallai	485	104	0	106	81	261	20	67	1,123
Total		59,807	30,693	35,131	11,971	16,638	9,063	1,853	15,309	180,465

3.8 Future Growth

Gold Coast City's growth has been projected by examining development applications and approvals, and determining the likelihood of development occurring based on historic development data in the city.

The propensity for vacant land to be further subdivided or already developed land to change or intensify its development character under the **Planning Scheme** is determined from the development yield and the estimated value of the redevelopment.

The growth in development in the early projection cohorts (2006 and 2007-2011) is affected greatly by the vacant land, live applications and approvals in the city. Redevelopment potential is a greater influence on the growth in later projection cohorts.

Growth in the following non-residential projection categories has been determined within the PIA based on the change in population:

- retail
- education
- health
- other community uses

Growth in the following non-residential projection categories is based on the historic growth rates informed by the GCCC Economic Development Strategy:

- office
- industry
- rural
- transient



Table 1-10 Projected Population Growth to 2021 summarises the expected population growth of the city to 2021.

Table 1-10 Projected Population Growth to 2021

Population	2004	Mid 2006	Mid 2011	Mid 2016	Mid 2021
Total	534,209	557,910	640,094	707,845	769,616
Visitors	59,452	61,367	67,285	75,477	86,049
ERP	474,757	496,543	572,809	632,368	683,567

Table 1-11 Projected Total Population by Statistical Local Area (SLA) identifies the total population by projection cohort by SLA.

Table 1-11 Projected Total Population by Statistical Local Area (SLA)

SLA No.	SLA Name	Total Population 2004	Total Population 2006	Total Population 2011	Total Population 2016	Total Population 2021
3461	Beenleigh	8,236	8,252	8,385	8,817	11,140
3463	Bethania-Waterford	5,800	5,794	6,917	8,314	8,787
3466	Eagleby	9,153	9,305	9,957	10,234	10,688
3471	Edens Landing-Holmview	5,559	5,688	6,418	7,389	9,356
3476	Mt Warren Park	5,533	5,580	5,712	5,789	5,868
3494	Windaroo-Bannockburn	2,719	2,734	2,775	3,148	3,757
3496	Gold Coast (C) Bal in BSD	13,959	16,685	21,864	24,956	28,610
3497	Arundel	9,595	9,614	9,679	10,626	11,726
3501	Ashmore	11,327	11,489	11,565	11,702	12,075
3504	Benowa	8,107	8,154	8,281	8,732	9,158
3507	Biggera Waters	6,593	6,411	6,997	7,727	8,084
3512	Bilinga	2,499	2,501	2,548	3,002	3,333
3513	Broadbeach	10,683	10,836	10,850	12,569	13,798
3515	Broadbeach Waters	9,024	9,056	9,248	9,485	12,767
3517	Bundall	4,344	4,362	4,377	5,121	5,882
3521	Burleigh Heads	10,704	10,742	10,970	11,368	12,241
3523	Burleigh Waters	12,755	12,762	12,859	12,905	12,967
3525	Carrara-Merrimac	16,403	17,855	20,942	22,984	24,672
3527	Coolangatta	10,016	10,051	10,277	10,825	11,559
3531	Coombah	9,778	9,795	10,067	10,080	10,223
3532	Coomera-Cedar Creek	16,073	23,478	53,480	74,167	86,782
3533	Currumbin	3,402	3,425	3,476	3,612	3,699
3535	Currumbin Waters	10,213	10,347	10,498	10,597	10,730
3537	Elanora	12,568	12,586	12,593	13,160	13,256
3541	Ernest-Molendinar	4,948	5,217	5,553	5,768	5,857
3542	Guanaba-Currumbin Valley	31,943	34,312	53,141	60,282	64,971
3543	Helensvale	14,274	14,553	16,007	16,228	16,610
3545	Hollywell	2,622	2,622	2,632	2,628	2,635
3547	Hope Island	5,884	6,816	9,969	13,305	15,182
3553	Labrador	17,384	17,410	17,676	17,821	18,500



SLA No.	SLA Name	Total Population 2004	Total Population 2006	Total Population 2011	Total Population 2016	Total Population 2021
3555	Main Beach-Broadwater	9,112	10,019	10,240	11,015	11,939
3557	Mermaid Beach	9,847	9,858	10,027	11,077	11,937
3562	Mermaid Waters-Clear Island Waters	14,507	14,530	15,794	18,728	19,416
3563	Miami	8,150	8,155	8,230	8,400	8,767
3565	Mudgeeraba	9,747	9,877	10,520	10,812	11,247
3567	Nerang	24,949	25,109	26,028	26,535	27,918
3571	Oxenford	10,165	11,380	12,132	12,986	13,545
3573	Palm Beach	15,957	15,966	16,211	18,115	19,310
3575	Paradise Point	4,153	4,153	4,901	4,902	4,957
3577	Parkwood	8,880	8,880	8,879	9,053	9,127
3582	Robina	24,730	26,436	31,210	33,438	34,777
3583	Runaway Bay	8,711	8,752	8,860	8,964	9,481
3585	Southport	25,049	26,034	28,229	30,380	35,397
3586	Stephens (Varsity Lakes)	7,069	7,278	8,188	8,508	9,193
3587	Surfers Paradise	45,505	47,448	48,931	55,016	60,589
3591	Tugun	5,883	5,897	6,267	6,725	7,117
3593	Worongary-Tallai	9,697	9,706	9,734	9,850	9,985
Total		534,209	557,910	640,094	707,845	769,616

The population projections are based on the GCCC rate base, primary land use, and other land use survey as at December 2004. All development applications and approvals in Council's systems have been used. Comprehensive land use information as at 2004 considered total dwellings, existing land use and total population to lot level. Historical development rate for major residential developments across the city since 1996 were compiled enabling forecasting of the approximate completion rate of the development. **Planning Scheme** designations were used to calculate the planning capacity of each lot. All forecasts have been agreed and signed off by PIFU.

Table 1-12 Projected Employment Growth to 2021 identifies the growth in the non-residential employment categories across the City to 2021.

Table 1-12 Projected Employment Growth to 2021

Employment Category	Projected New Positions 2004-2006	Projected New Positions 2007-2011	Projected New Positions 2012-2016	Projected New Positions 2017-2021
Retail	3,114	9,343	9,343	9,343
Office	1,728	5,183	5,183	5,183
Industry	2,722	8,165	8,165	8,165
Education	635	1,904	1,904	1,904
Health	846	2,538	2,538	2,538
Other Community Uses	440	1,320	1,320	1,320
Rural	0	0	0	0
Transient	816	2,447	2,447	2,447
Total City	10,300	30,901	30,901	30,901

Table 1-13 Distribution of Growth in Non-Residential Development Schedule of Growth Maps and Tables identifies the non-residential development growth by SLA by projection cohort.



Table 1-13 Distribution of Growth in Non-Residential Development Schedule of Growth Maps and Tables

SLA	Growth in Retail			Office			Industry			Education			Health			Other Community uses										
	Jobs to 2006	Jobs to 2016	Jobs to 2021	Jobs to 2006	Jobs to 2016	Jobs to 2021	Jobs to 2006	Jobs to 2016	Jobs to 2021	Jobs to 2006	Jobs to 2016	Jobs to 2021	Jobs to 2006	Jobs to 2016	Jobs to 2021	Jobs to 2006	Jobs to 2016	Jobs to 2021								
3461 Beenleigh	175	526	526	43	130	130	78	235	235	235	235	235	235	235	235	24	24	24	31	31	31	5	14	14	14	
3463 Bethania-Waterford	6	18	18	1	2	2	2	91	272	272	272	272	272	272	272	8	25	25	5	15	15	5	14	14	14	14
3466 Eagleby	8	23	23	4	12	12	12	-19	-56	-56	-56	-56	-56	-56	-56	3	10	10	3	10	10	6	18	18	18	
3471 Edens Landing-Holmview	2	5	5	0	1	1	1	104	311	311	311	311	311	311	311	1	3	3	1	2	2	2	0	1	1	1
3476 Mt Warren Park	1	4	4	1	2	2	2	0	0	0	0	0	0	0	0	5	15	15	3	10	10	1	4	4	4	
3494 Windaroo-Bamockburn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	
3498 Gold Coast (C) Bal in BSD	68	204	204	44	131	131	131	687	2,061	2,061	2,061	2,061	2,061	2,061	2,061	21	63	63	7	22	22	8	24	24	24	
3497 Arundel	0	1	1	1	2	2	2	41	123	123	123	123	123	123	123	3	10	10	2	7	7	3	8	8	8	
3501 Ashmore	41	122	122	15	44	44	44	52	155	155	155	155	155	155	155	6	17	17	5	14	14	4	11	11	11	
3504 Benowa	5	15	15	8	23	23	23	0	0	0	0	0	0	0	0	4	11	11	10	31	31	1	2	2	2	
3507 Biggera Waters	5	14	14	6	17	17	17	27	82	82	82	82	82	82	82	1	2	2	1	3	3	2	7	7	7	
3512 Blinga	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	
3513 Broadbeach	56	169	169	25	76	76	76	0	0	0	0	0	0	0	0	1	3	3	3	4	4	4	0	0	0	
3515 Broadbeach Waters	214	643	643	24	73	73	73	0	0	0	0	0	0	0	0	0	0	0	1	3	3	1	2	2	2	
3517 Bundall	95	286	286	97	290	290	290	0	0	0	0	0	0	0	0	0	0	0	3	8	8	0	1	1	1	
3521 Burleigh Heads	61	182	182	23	69	69	69	6	17	17	17	17	17	17	17	2	6	6	4	12	12	2	5	5	5	
3523 Burleigh Waters	23	68	68	10	30	30	30	30	89	89	89	89	89	89	89	2	7	7	7	0	0	0	10	10	10	
3525 Carrara-Merrimac	9	27	27	5	15	15	15	69	207	207	207	207	207	207	207	6	17	17	7	7	7	3	10	10	10	
3527 Coolangatta	29	88	88	8	25	25	25	33	99	99	99	99	99	99	99	3	8	8	5	15	15	3	9	9	9	
3531 Coombabah	1	3	3	1	2	2	2	7	20	20	20	20	20	20	20	2	5	5	5	0	1	1	0	1	1	
3532 Coomera-Cedar Creek	727	2180	2180	298	893	893	893	168	505	505	505	505	505	505	505	214	642	642	185	484	484	148	444	444	444	
3533 Currumbin	1	4	4	4	1	1	1	1	0	0	0	0	0	0	0	2	7	7	7	5	5	5	1	1	1	
3535 Currumbin Waters	1	4	4	3	10	10	10	133	398	398	398	398	398	398	398	1	2	2	2	3	3	3	4	4	4	
3537 Eanora	12	36	36	6	19	19	19	0	0	0	0	0	0	0	0	3	8	8	8	2	7	7	4	4	4	
3541 Ernest-Moleindar	4	11	11	3	10	10	10	59	177	177	177	177	177	177	177	1	1	1	1	0	1	0	1	1	1	
3542 Guanaba-Currumbin Valley	445	1336	1336	12	35	35	35	168	504	504	504	504	504	504	504	118	353	353	30	90	90	101	303	303	303	
3543 Helensvale	9	27	27	6	17	17	17	0	0	0	0	0	0	0	0	3	9	9	9	2	6	6	1	4	4	
3545 Hollywell	0	0	0	0	0	0	0	74	222	222	222	222	222	222	222	0	0	0	0	0	0	1	2	2	2	
3547 Hope Island	184	552	552	14	42	42	42	16	49	49	49	49	49	49	49	10	30	30	-7	-21	-21	2	6	6	6	
3553 Labrador	10	29	29	4	11	11	11	118	355	355	355	355	355	355	355	1	4	4	4	5	16	16	3	8	8	
3555 Main Beach-Broadwater	11	32	32	3	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	4	4	4	
3557 Mermaid Beach	14	42	42	8	24	24	24	3	9	9	9	9	9	9	9	0	0	0	3	9	9	1	2	2	2	
3562 Mermaid Wtrs-Clear Is. Wtrs	14	41	41	8	23	23	23	0	0	0	0	0	0	0	0	2	7	7	7	2	7	7	5	15	15	
3563 Miami	23	69	69	2	7	7	7	18	53	53	53	53	53	53	53	2	5	5	2	7	7	1	3	3	3	
3565 Mudgeeraba	6	17	17	4	12	12	12	0	0	0	0	0	0	0	0	3	8	8	8	2	7	7	1	4	4	
3567 Nerang	134	401	401	29	88	88	88	174	523	523	523	523	523	523	523	10	29	29	29	14	43	43	3	10	10	
3571 Oxenford	91	272	272	5	15	15	15	67	201	201	201	201	201	201	201	1	3	3	3	2	5	5	1	3	3	
3573 Palm Beach	11	34	34	34	20	59	59	0	0	0	0	0	0	0	0	2	6	6	6	3	8	8	1	3	3	
3575 Paradise Point	2	5	5	1	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	
3577 Parkwood	7	20	20	4	11	11	11	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	3	3	3	
3582 Robina	313	940	940	706	2,119	2,119	2,119	340	1,020	1,020	1,020	1,020	1,020	1,020	1,020	75	225	225	89	268	268	65	196	196	196	
3583 Runaway Bay	72	216	216	20	59	59	59	0	0	0	0	0	0	0	0	1	3	3	3	3	9	9	1	3	3	
3585 Southport	149	447	447	196	587	587	587	132	397	397	397	397	397	397	397	108	323	323	363	1088	1088	46	137	137	137	
3586 Stephens	0	0	0	0	0	0	0	43	128	128	128	128	128	128	128	1	3	3	3	1	2	2	0	0	0	
3587 Surfers Paradise	66	197	197	56	168	168	168	0	0	0	0	0	0	0	0	2	7	7	7	3	8	8	0	1	1	
3591 Tugun	6	18	18	3	9	9	9	3	8	8	8	8	8	8	8	0	0	0	0	89	268	268	0	1	1	
3593 Worongary-Tallai	5	15	15	3	8	8	8	0	0	0	0	0	0	0	0	1	3	3	3	1	2	2	3	8	8	
Total	3,114	9,343	9,343	1,728	5,183	5,183	5,183	2,722	8,165	8,165	8,165	8,165	635	1,904	1,904	846	1,904	1,904	2,638	2,638	2,638	440	1,320	1,320	1,320	



3.9 Schedule of Growth Maps

This section provides summaries of estimated residential and non-residential growth by Statistical Local Area (SLA).

Residential growth is divided into Detached Dwelling (DD) and Multi-Unit Dwelling (MUD). MUD growth projections include Tourist Accommodation.

The Schedule of Growth Maps and Schedule of Growth Planning Assumptions Tables includes all allotments with current **Planning Scheme** density designations.

MUD in the Schedule of Growth Maps and Schedule of Growth Planning Assumptions Tables includes all allotments with current **Planning Scheme** designation greater than 25 dwellings per hectare (refer to **Table 5** for **Planning Scheme** density provisions).

Non-residential growth is divided into the following categories:

- a) Retail
- b) Office
- c) Industry
- d) Community – Education
- e) Community – Health
- f) Community – Other Uses
- g) Rural
- h) Transient

The **Schedule of Growth Maps and Schedule of Growth Planning Assumptions Tables** identifies where retail, office, industry and community uses may occur within each SLA. Rural uses have not been shown in this section as they are outside the Priority Infrastructure Area (PIA). Transient uses are also not shown in the **Schedule of Growth Maps and Schedule of Growth Planning Assumptions Tables** as they are generally home-based or mobile employment which could occur in any part of the city.

The projected growth in Residential Development and Population and Non-Residential GFA and positions summarised in **Subclause 3.8** is further detailed in the following pages. **Table 1-14 Schedule of Growth Maps and Schedule of Growth Planning Assumption Table** lists the growth maps and tables included.

3.9.1 List of Growth Maps and Tables

Table 1-14 Schedule of Growth Maps and Schedule of Growth Planning Assumption Tables

Schedule of Growth Maps		Schedule of Growth Planning Assumption Tables	
IM1 – 1	Beenleigh, Bethania-Waterford, Eagleby, Edens Landing	3461	Beenleigh
		3463	Bethania-Waterford
		3466	Eagleby
		3471	Edens Landing-Holmview
IM1 – 2	Gold Coast (C) Bal in BSD	3496	Gold Coast (C) Bal in BSD
IM1 – 3	Coomera-Cedar Creek	3532	Coomera-Cedar Creek
IM1 – 4	Coombabah, Helensvale, Oxenford	3531	Coombabah
		3543	Helensvale
		3571	Oxenford
IM1 – 5	Nerang	3567	Nerang
IM1 – 6	Mt Warren Park, Windaroo-Bannockburn	3476	Mt Warren Park
		3494	Windaroo-Bannockburn



Schedule of Growth Maps		Schedule of Growth Planning Assumption Tables	
IM1 – 7	Hope Island, Paradise Point	3547	Hope Island
		3575	Paradise Point
IM1 – 8	Biggera Waters, Hollywell, Runaway Bay	3507	Biggera Waters
		3545	Hollywell
		3583	Runaway Bay
IM1 – 9	Benowa, Broadbeach, Broadbeach Waters, Bundall, Surfers Paradise	3504	Benowa
		3513	Broadbeach
		3515	Broadbeach Waters
		3517	Bundall
		3587	Surfers Paradise
IM1 – 10	Ashmore, Ernest-Molendinar, Southport	3501	Ashmore
		3541	Ernest-Molendinar
		3585	Southport
IM1 – 11	Arundel, Labrador, Parkwood	3497	Arundel
		3553	Labrador
		3577	Parkwood
IM1 – 12	Main Beach-Broadwater	3555	Main Beach-Broadwater
IM1 – 13	Guanaba-Currumbin Valley	3542	Guanaba-Currumbin Valley
IM1 – 14	Carrara-Merrimac	3525	Carrara-Merrimac
IM1 – 15	Worongary-Tallai	3593	Worongary-Tallai
IM1 – 16	Mudgeeraba	3565	Mudgeeraba
IM1 – 17	Mermaid Beach, Mermaid Waters-Clear Island Waters, Miami, Robina	3557	Mermaid Beach
		3562	Mermaid Waters-Clear Island Waters
		3563	Miami
		3582	Robina
IM1 – 18	Tugun, Bilinga, Coolangatta	3591	Tugun
		3512	Bilinga
		3527	Coolangatta
IM1 – 19	Currumbin, Currumbin Waters, Elanora, Palm Beach	3533	Currumbin
		3535	Currumbin Waters
		3537	Elanora
		3573	Palm Beach
IM1 – 20	Burleigh Heads, Burleigh Waters, Stephens (Varsity Lakes)	3521	Burleigh Heads
		3523	Burleigh Waters
		3586	Stephens (Varsity Lakes)



4.0 Desired Standards of Service (DSS)

The Desired Standards of Service (DSS) for the trunk infrastructure networks in the PIP are provided in this section. The DSS have been expressed in both qualitative and quantitative terms. Qualitative standards are planning criteria that are primarily about the performance of the network whilst quantitative standards are design criteria that are primarily about the capacity of the network.

4.1 Water Supply Network Desired Standard of Service

The Water Supply Network contains both the potable water and recycled water systems.

Desired Standards of Service for the Water Supply Network have been prepared for that part of the City planned to be provided with water supply. For those areas not planned to be serviced, there is no standard of service. **Table 1-15** summarises the planning criteria for both the potable and recycled water systems. **Table 1-16** summarises the design criteria for the potable water supply system, whilst **Table 1-17** summarises the design criteria for the recycled water system.

Table 1-15 Water Supply Network Planning Criteria

Measure	Desirable Outcomes
<ul style="list-style-type: none"> Drinking water will comply with the NHMRC Australian Drinking Water Guidelines – 2004, as referenced in the GCW Water Quality Management Manual and Hazard Analysis Critical Control Point (HACCP) Procedure. 	<ul style="list-style-type: none"> Receive drinkable water from the State Bulk Entities at the quality specified in the NHMRC Australian Drinking Water Guidelines – 1996.
<ul style="list-style-type: none"> Designs will provide the ability for all systems to comply with all licensing requirements. 	<ul style="list-style-type: none"> Compliance to all legal requirements regarding licensing.
<ul style="list-style-type: none"> The environment is not degraded by the impact of water supply infrastructure and/or treatment facilities. 	<ul style="list-style-type: none"> Protect the environment.
<ul style="list-style-type: none"> Systems design will aim to minimise energy consumption and optimise the use of green energy. 	<ul style="list-style-type: none"> Protect the environment. Minimise cost. Preserve natural resources.
<ul style="list-style-type: none"> System design will aim to achieve a minimum life cycle cost as defined in the Integrated Planning Act, 1997. 	<ul style="list-style-type: none"> Minimise cost.
<ul style="list-style-type: none"> The design of the water supply network shall provide specified water pressures. 	<ul style="list-style-type: none"> Conservation of water. Customer satisfaction.
<ul style="list-style-type: none"> The design of all parts of the network shall provide for flow rates as specified in GCW guidelines. 	<ul style="list-style-type: none"> An integrated network providing flow rates consistent with GCW guidelines.

Table 1-16 Water Supply Network Design Criteria (Potable Water System)

Measure	Values to be Achieved							
	Dev Type ¹	RSF	RMF	COM	PUB	IND	TOR	IRR
Water Demand								
Average Day Demand (L/ET/day) Distribution System	Case 1 ²	880						
	Case 2 ²	620	674	-	-	-	-	-
	Case 3 ²	490	671	541	541	936	728	260
	Case 4 ²	210	391	541	541	936	728	260
	Case 5 ²	400	573	541	541	936	728	260
Minimum Service Pressure								
Minimum Pressure	22 metres head							
Maximum Service Pressure								
Maximum Pressure	80 metres head							



Measure	Values to be Achieved
Fire Fighting Requirements	
Network Pressure	12 m minimum in the Water Supply network
Fire Flow Residential Lot	15 L/s for a duration of 2hrs
Fire Flow Industrial or Commercial Lot	30 L/s for a duration of 4hrs
Reservoir Storage	
Ground Level Storage Capacity	Reservoir Volume = Operating Volume + Emergency Storage Where, Operating Volume = A x MD Case 1A = 0.8 Case 2A = 1.2 Case 3A = 0.8 Case 4A = 1.75 Case 5A = 0.8 Emergency Storage = the greater of 4 hrs MDMM demand in zone or 0.5ML ³ whichever is the greater.
Elevated Storage Capacity (kL)	2.0 x MH + Fire Storage (of 150kL)
Pipeline Design	
Maximum Velocity	2.5 m/s
Treated Water Quality	
Turbidity	≤ 0.1 NTU
Apparent Colour	≤ 5 HU
Soluble Manganese	≤ 0.01 mg/L
Acid Soluble Aluminium	≤ 0.15 mg/L
pH	6.9 – 7.5
Alkalinity	> 35 mg/L
Free Chlorine residual	≥ 0.2 mg/L & ≤ 1.5 mg/L

Notes:

- 1 **RSF = Residential Single Family**
RMF = Residential Multi-Family
COM = Commercial
PUB = Public
IND = Industry
TOR = Tourist Residential
IRR = Irrigation
- 2 **Case 1 = Potable water only (Traditional reticulation areas)**
Case 2 = Potable water + rainwater tanks (Infill development areas)
Case 3 = Potable water + recycled water (Class A+) (Greenfield Scenario 1)
Case 4 = Potable water + rainwater tanks + recycled water (Class A+) (Aggressive case – Greenfield Scenario 2)
Case 5 = Potable water + rainwater tanks + recycled water (Class A+) (Conservative case – Greenfield Scenario 3)
- 3 **In zones where the serviced area < 350ET, the emergency storage can be reduced to 150 kL.**



Table 1-17 Water Supply Network Design Criteria (Recycled Water System)

Measure	Values to be Achieved							
	Dev Type	RSF	RMF	COM	PUB	IND	TOR	IRR
Water Demand								
Average Day Demand (L/ET/day) Distribution System	Case 3 ¹	550	369	499	499	104	312	780
	Case 4 ¹	550	369	499	499	104	312	780
	Case 5 ¹	525	352	499	499	104	312	780
Average Day Demand (L/ET/day) Treatment	Case 3 ¹	500	335	454	454	95	284	709
	Case 4 ¹	500	335	454	454	95	284	709
	Case 5 ¹	475	318	454	454	95	284	709
Average Day Demand (L/ET/day) Source of Supply	Case 3 ¹	500	335	454	454	95	284	709
	Case 4 ¹	500	335	454	454	95	284	709
	Case 5 ¹	475	318	454	454	95	284	709
Minimum Service Pressure								
Minimum Pressure	20 metres head							
Maximum Service Pressure								
Maximum Pressure	80 metres head							
Target Pressure								
Target Maximum Pressure	50 metres head							
Pressure Differential								
Target Pressure Differential	10 metres head							
Fire Fighting Requirements								
Network Pressure	12 m minimum in the Water Supply network							
Fire Flow Residential Lot	15 L/s for a duration of 2hrs							
Fire Flow Industrial or Commercial Lot	30 L/s for a duration of 4hrs							
Reservoir Storage								
Ground Level Storage Capacity	Reservoir Volume = Operating Volume + Emergency Storage Where, Operating Volume = 1.25 x MD Emergency Storage = the greater of 4 hrs MDMM demand in zone or 0.5ML ² whichever is the greater.							
Elevated Storage Capacity (kL)	2.0 x MH + Fire Storage (of 150kL)							
Pipeline Design								
Maximum Velocity	2.5 m/s							
Recycled Water Quality								
Dual Reticulation	Class A+ in accordance with The State of Queensland Environmental Protection Agency, 2005, Queensland Water Recycling Guidelines.							

Notes:

- 1 **Case 3 = Potable water + recycled water (Class A+) (Greenfield Scenario 1)**
Case 4 = Potable water + rainwater tanks + recycled water (Class A+)
(Aggressive case – Greenfield Scenario 2)
Case 5 = Potable water + rainwater tanks + recycled water (Class A+)
(Conservative case – Greenfield Scenario 3)
- 2 **In zones where the serviced area < 350ET, the emergency storage can be reduced to 150 kL.**



4.2 Wastewater Network Desired Standard of Service

Desired Standards of Service for the Wastewater Network have been prepared for that part of the City planned to be provided with a wastewater service. For those areas not planned to be serviced, there is no standard of service. **Table 1-18** summarises the planning criteria for the Wastewater Network. **Table 1-19** summarises the design criteria for the Wastewater Network.

Table 1-18 Wastewater Network Planning Criteria

Measure	Desirable Outcomes
<ul style="list-style-type: none"> Treatment processes will adopt appropriate technology to minimise energy and chemical use. 	<ul style="list-style-type: none"> Minimise use of natural resources. Minimise cost to ratepayers. Minimise risks to public health and the environment.
<ul style="list-style-type: none"> Treatment processes will achieve recycled water quality standards in accordance with the criteria listed in the Guidelines for Sewerage Systems Reclaimed Water, February 2000 for Class A Water. 	<ul style="list-style-type: none"> Reduce potable water consumption. Ensure the safe and efficient use recycled water. Ensure recycled water is used as a resource rather than discarded as a waste product.
<ul style="list-style-type: none"> Use of recycled water and biosolids will be optimised. 	<ul style="list-style-type: none"> Reduce potable water consumption. Provide greater beneficial reuse of recycled water thereby discharging less nutrients into local waterways.
<ul style="list-style-type: none"> The environment is not degraded by the impact of wastewater infrastructure. 	<ul style="list-style-type: none"> Minimise the impact on air, water and land resources.
<ul style="list-style-type: none"> System design will aim to minimise energy consumption and optimise the use of green energy. 	<ul style="list-style-type: none"> Minimise the use of natural resources. Minimise cost to ratepayers.
<ul style="list-style-type: none"> System design will aim to achieve minimum life cycle cost. 	<ul style="list-style-type: none"> Maximise operating efficiencies and minimise unnecessary costs and expenses. Minimise cost to ratepayers.
<ul style="list-style-type: none"> System designs will minimise the likelihood of odorous or corrosive gas generation. 	<ul style="list-style-type: none"> Minimise impact on air, water and land resources. Reduce the degeneration of pipes caused by corrosive gas therefore increasing their natural life. Minimise expenditure on maintenance and repairs.
<ul style="list-style-type: none"> Design transport system for flow rates, detention times and water quality specifications. 	<ul style="list-style-type: none"> Customers are provided with a reliable wastewater network that meets user requirements. Minimise the impact on air, water and land resources.



Table 1-19 Wastewater Network Design Criteria

Measure	Values to be Achieved
Wastewater Flows	
Average Dry Weather Flow (ADWF) for Category 2 Infrastructure	825 L/ET/day
Average Dry Weather Flow (ADWF) for Category 1 Infrastructure	750 L/ET/day
Peak Wet Weather Flow (PWWF)	5 x ADWF ¹
Gravity Sewer Design	
Minimum velocity @ PWWF	0.6 m/s
Minimum velocity @ PDWF	0.3 m/s
Depth of flow @ PWWF – Existing system	Up to 1.0 m below MH cover level and no spillage through overflow structures.
Depth of flow @ PWWF – Proposed sewers	Shall not exceed 75% depth full.
Sewage Pumping Station Design	
Wet Well Storage Requirements (Volume (m ³) between pump 'start' and 'stop' levels)	0.9 x Single Pump rate (L/s)/N Where, N = 12 starts for motors <100kW; 8 starts for motors 100kW-200kW; and 5 starts for motors >200kW
Emergency Storage	4 hours at ADWF
Total SPS Capacity	5 x ADWF (minimum) ²
Rising Main Design	
Maximum Velocity	Existing systems - 2.5 m/s Proposed systems – 2.0 m/s
Recycled Water Quality	
Existing WWTPs (Beenleigh, Elanora, Merrimac & Coombabah)	In accordance with EPA discharge licence.
Future WWTPs (Pimpama & Stapylton)	In accordance with requirements of EPA.
Biosolids Quality	
Contaminant Grade	B
Stabilisation Grade	B
Recycled Water Storage	
Water Storage Overflow Capacity	Contain a 1 in 5 year event.
Pumping Capacity Standby	100%

Notes:

- 1 RIGS network: PWWF = 4 x ADWF**
- 2 RIGS network: Total SPS Capacity = 4 x ADWF (minimum)**



4.3 Transport Network Desired Standard of Service

The Transport Network contains three integrated systems of:

- Local Government and State-controlled roads
- Public Transport
- Pedestrian and Cycle network

4.3.1 Road System Planning and Design Criteria

Table 1-20 and **Table 1-21** outline the planning and design criteria for the road system.

Table 1-20 Road System Planning Criteria

Measure	Desirable Outcomes
<ul style="list-style-type: none"> ▪ Provide a functional hierarchy of roads through the city in which the structured pattern and characteristics of travel derived from the structure of land use is carried upon a network appropriately planned and located to meet the range of operating characteristics whilst fulfilling amenity and environmental objectives 	<ul style="list-style-type: none"> ▪ Promote safety by separating different travel functions having different and conflicting operating characteristics and requirements ▪ Minimise fuel consumption, emissions and congestion by maintaining optimal operating speeds across the hierarchical network ▪ Protect residential amenity and efficient freight routes

Table 1-21 Road System Design Criteria

Measure	Values to be Achieved
<ul style="list-style-type: none"> ▪ Base the design capacity of roads on the efficient off-peak movement of goods and people ▪ Minimise peak congestion and safety problems ▪ Provide for the volume/ capacity ratio 	<ul style="list-style-type: none"> ▪ Reduce congestion and accidents and promote fuel efficiency ▪ Maintain efficient travel speeds in the network ▪ Maintain efficient freight distribution and costs
<ul style="list-style-type: none"> ▪ Ensure traffic on access streets does not exceed 3000 vehicles per day with less than 3% heavy goods vehicles 	<ul style="list-style-type: none"> ▪ Minimise the adverse impacts of safety and noise in residential streets
<ul style="list-style-type: none"> ▪ Ensure delays at intersections are maintained at acceptable levels 	<ul style="list-style-type: none"> ▪ Maximum degree of saturation and delay rate for intersections does not exceed 15 to 25 vehicle hours per hour for priority intersections and signalised intersections, respectively
<ul style="list-style-type: none"> ▪ Design criteria specified by relevant authority 	<ul style="list-style-type: none"> ▪ Land Development Guidelines (GCCC) ▪ Improve connectivity and network efficiency ▪ Encourage more sustainable transport patterns ▪ Respond to urbanisation pressures and adjacent land uses ▪ Improve amenity, serviceability and network efficiency ▪ Safety

Table 1-22 and **Table 1-23** define the planning characteristics attached to the functional hierarchy and operating design standards.



Table 1-22 Functional Planning Provisions in the Hierarchy

Road Element	Speed Environment	Provisions					
		Access	Public Transport	Intersections	Parking	Turning Traffic	Cyclists
Major Arterial	State Standards	State Standards	State Standards	State Standards	State Standards	State Standards	State Standards
Arterial	60 – 80 kph	Intersections	Indented stops	C – 0.5 – 1.0k	None	Protected and deceleration lanes	Cycle lanes and underpass/intersections
Sub Arterial	60 kph	Intersections	Indented stops	C – 0.2 – 0.5k	None	Protected and deceleration lanes	Cycle lanes and intersections
Trunk Collector	60 kph	Intersections	Indented stops	C/ P – 0.2k	Limited to commercial areas	Localised protection	Cycle lanes and intersections
Collector	50 – 60 kph	Frontage	In traffic	C/ P – 0.1k	On road	None	On road
Residential Access Street	30 – 50 kph	Frontage	In traffic	P – 0.06k	On road	None	On road

Note: *General Form of Intersection: C = Controlled Intersection, P = Priority Intersection*

Table 1-23 Road System Operating Design Standards

Road Element	Maximum Desirable Volume/ Capacity Ratio by Location			Maximum Desirable Daily Volume/ Lane in Urban/ Suburban Locations
	Rural	Suburban	Urban	
Major Arterial	0.7	0.75	0.75	11,000 vpd ¹
Arterial	0.75	0.8	0.85	9,500 vpd
Sub Arterial	0.75	0.8	0.85	8,000 vpd
Trunk Collector	0.8	0.9	0.90	7,000 vpd
Collector	0.85	0.9	0.9	4,000 vpd
Residential Access Street	2000 vpd	3000 vpd	3000 vpd	1,500 vpd

Note 1: *vpd = vehicles per day*

4.3.2 Public Transport System Planning and Design Criteria

This section details the planning and design criteria associated with public transport facilities managed and maintained by Gold Coast City Council.

Table 1-24 and **Table 1-25** outline the planning and design criteria for the public transport system.

Table 1-24 Public Transport System Planning Criteria

Measure	Desirable Outcomes
<ul style="list-style-type: none"> Make provision for integrating the (State) planning of rail and line haul and feeder bus services through the supply of facilities to enhance the use of public transport for the full range of travel needs 	<ul style="list-style-type: none"> Improve access to and integration of public transport services to increase its use to activity locations Increase the use of fuel-efficient modes of transport
<ul style="list-style-type: none"> Ensure new development accommodates the early supply of efficient public transport 	<ul style="list-style-type: none"> Reduce dependence on the private car and encourage the use of more sustainable transport modes
<ul style="list-style-type: none"> Ensure non-public transport provisions and policy support increasing the use of public transport to the city's activity areas 	<ul style="list-style-type: none"> Reduce emissions in activity centres and residential areas



Table 1-25 Public Transport System Design Criteria

Measure	Values to be Achieved
<ul style="list-style-type: none"> Locate bus stops on bus routes every 400 metres 	<ul style="list-style-type: none"> Improve access to and perception of public transport as a real alternative to car
<ul style="list-style-type: none"> Provide bus bays, weather protection, seating and bus information systems at all major stops 	<ul style="list-style-type: none"> Enhance the comfort and convenience qualities of public transport
<ul style="list-style-type: none"> Provide bus only facilities as required, to improve operating times and reliability 	<ul style="list-style-type: none"> Enhance the use of public transport

4.3.3 Cycle and Pedestrian System Planning and Design Criteria

The Cycle and Pedestrian System is made up of two types of facilities:

- In Road Reserve
- Off Road

The In Road Reserve cycle and pedestrian facilities include those facilities provided within the road pavement and the verges of Council's road network.

Table 1-26 and **Table 1-27** outline the planning and design criteria for the In Road Reserve Cycle and Pedestrian System.

Table 1-26 In Road Reserve Cycle and Pedestrian System Planning Criteria

Measure	Desirable Outcomes
<ul style="list-style-type: none"> Provide a network of safe 'on road' bike lanes and 'in road reserve' shared paths that connect all major cycle and walk trip generating activities of the city to their catchments and meet the range of cycle and walking travel patterns of the community 	<ul style="list-style-type: none"> Promote the use of healthy and energy efficient modes of travel Minimise fuel consumption, emissions and congestion by encouraging the use of non-motorised forms of travel Enhance safety in cycle and walk travel

Table 1-27 In Road Reserve Cycle and Pedestrian System Design Criteria

Measure	Values to be Achieved
<ul style="list-style-type: none"> Design of the 'in reserve' cycle and footpath facilities to be in accordance with Gold Coast City Land Development Guidelines 	<ul style="list-style-type: none"> Encourage walk and cycle travel as a safe and healthy alternative to car Ensure facilities are designed to appropriate and consistent standards and that the community has equal access to these facilities across the City

The Off Road cycle facilities include those facilities within open space areas, corridors and pathways.

Table 1-28 and **Table 1-29** outline the planning and design criteria for the Off Road Cycle and Pedestrian System.

Table 1-28 Off Road Cycle and Pedestrian System Planning Criteria

Measure	Desirable Outcomes
<ul style="list-style-type: none"> Provide a network of safe 'off-road' cycle and pedestrian paths that connect all major 'in road reserve', cycle and walk trip generating activities and recreational destinations of the City to their catchments and meet the range of cycle and walking travel patterns of the community 	<ul style="list-style-type: none"> Promote the use of healthy and energy efficient modes of travel Minimise fuel consumption, emissions and congestion by encouraging the use of non-motorised forms of travel Enhance safety in cycle and walk travel

Table 1-29 Off Road Cycle and Pedestrian System Design Criteria

Measure	Values to be Achieved
<ul style="list-style-type: none"> Design of the cycle and footpath facilities to be in accordance with Gold Coast City Land Development Guidelines 	<ul style="list-style-type: none"> Encourage walk and cycle travel as a safe and healthy alternative to car Ensure facilities are designed to appropriate and consistent standards and that the community has equal access to these facilities across the city



4.4 Stormwater Network Desired Standard of Service

The function of Council's Stormwater drainage systems is to collect and convey stormwater through respective catchment areas with minimal nuisance, danger or damage at a cost that is acceptable to the community.

Standards for local stormwater drainage systems within Gold Coast City have varied significantly over the past 30 years. As a result, some of the older areas of the city have drainage systems that are below the DSS and significant augmentation works are required. **IPA** stipulates that remediation costs to address existing deficiencies cannot be passed on the new development. This has been taken into account when developing the Stormwater Infrastructure Charges Schedule. In this regard, it needs to be recognised that the majority of drainage systems in the city are not deficient in providing the original drainage standard, noting that a vast portion of these systems were constructed by developers. The Stormwater Network ICS has been developed to equitably proportion the costs between existing and future development to upgrade the drainage system to the DSS.

Table 1-30 and **Table 1-31** outline the planning and design criteria for the Stormwater Network within Gold Coast City.

Table 1-30 Stormwater Network Planning Criteria

Measure	Desirable Outcomes
<ul style="list-style-type: none"> Collect and convey stormwater flows (both low flows and Q100 flows) to a lawful point of discharge in a safe manner that minimises nuisance, the inundation of habitable rooms and protects life 	<ul style="list-style-type: none"> The free and safe drainage of existing and future urban land Maximise the ecological health of waterways and minimise the economic cost of stormwater run-off from development Ensure protection of habitable rooms
<ul style="list-style-type: none"> Minimise the life cycle costs and adverse environmental impacts of an integrated system of natural channels and piped drainage with overland flow paths, regional detention and water quality infrastructure that maximises the use and retention of natural waterways 	<ul style="list-style-type: none"> Minimise the cost of maintaining the stormwater system Preserve existing and future storage capacity in the system Maintain and increase the recreational and scenic and ecological values of waterway corridors
<ul style="list-style-type: none"> Ensure trunk infrastructure takes into account the use of water sensitive urban design and other types of on site detention/ retention facilities and the conservation of natural waterways 	<ul style="list-style-type: none"> Minimise the impact of development on the existing local flood levels and waterway networks by maintaining the existing flow, velocity and flood storage parameters and control of peak flows Improve water quality at the receiving waters at minimum cost
<ul style="list-style-type: none"> Preserve buffers along waterways to promote ecological links, including fauna movement and riparian vegetation 	<ul style="list-style-type: none"> Retain ecological values, scenic amenity and cater for long-term morphological processes
<ul style="list-style-type: none"> Meet water quality objectives for receiving waters at all times through an appropriate balance of regional infrastructure and on site treatment 	<ul style="list-style-type: none"> Provide for primary and secondary water contact Minimise the amount of public land required for the stormwater system Maintain and improve the quality of water in the city's rivers and the Broadwater



Table 1-31 Stormwater Network Design Criteria

Measure	Values to be Achieved
<ul style="list-style-type: none"> ▪ Design of all elements of the stormwater system will comply with established codes and standards 	<ul style="list-style-type: none"> ▪ Queensland Urban Drainage Manual (QUDM) ▪ GCCC Land Development Guidelines ▪ Environmental Protection Agency (EPA) requirements ▪ Natural Channel Design Guidelines ▪ Water Resources Act requirements
<ul style="list-style-type: none"> ▪ Employ no net worsening (no adverse impact) criteria on all new development or redevelopment site 	<ul style="list-style-type: none"> ▪ Urban development does not create an adverse impact on any land within the catchment
<ul style="list-style-type: none"> ▪ Provide sufficient space in waterway corridors to accommodate wetlands and stormwater quality improvement devices 	<ul style="list-style-type: none"> ▪ Minimise the quantity of water quality devices ▪ Improve water quality at minimum cost to the community
<ul style="list-style-type: none"> ▪ Ensure that overland flow paths combine with all elements of the stormwater system to carry both low and high flow events 	<ul style="list-style-type: none"> ▪ Optimise the balance between natural channels, the piped network and overland flow
<ul style="list-style-type: none"> ▪ Utilise a system of regional and local on site detention facilities to minimise the adverse impact of peak run off for the full range of events from Q1 to Q100 	<ul style="list-style-type: none"> ▪ Minimise adverse impacts from flooding ▪ Reduce potential sediments and impacts of scour ▪ Maintain public safety
<ul style="list-style-type: none"> ▪ Design cross road structures to provide the appropriate level of flood immunity 	<ul style="list-style-type: none"> ▪ Maintain appropriate levels of access and promote safety ▪ Allow for planning disaster management strategies
<ul style="list-style-type: none"> ▪ Ensure major crossroad structures maintain fauna and recreation linkages 	<ul style="list-style-type: none"> ▪ Maintain ecological and recreation values
<ul style="list-style-type: none"> ▪ Employ water sensitive urban design criteria to maximise on site quantity and quality treatment and limit discharges off site 	<ul style="list-style-type: none"> ▪ Maximise the water quality on site ▪ Minimise the cost to the community of dealing with water quantity off site



4.5 Recreation Facilities Network Desired Standard of Service

The DSS for the Recreation Facilities Network have been prepared based on the following three planning zones:

- Northern Planning Zone
- Southern Planning Zone
- Coastal Planning Zone

These planning zones were determined having regard to similarities in the existing standards of service, projected growth, management of user demand, opportunity for co-functional use between residential and commercial catchments, cost of supplying recreation facilities infrastructure and opportunities for users to benefit from the infrastructure.

The boundaries of these planning zones are shown in **Subclause 5.6 – Plans For Trunk Infrastructure Maps**.

Table 1-32 and **Table 1-33** outline the planning and design criteria for the Recreation Facilities Network.

Table 1-32 Recreation Facilities Network Planning Criteria

Measure	Desirable Outcomes
<ul style="list-style-type: none"> ▪ Provision of a freely accessible, diverse and connected network of publicly owned parks and community facilities 	<ul style="list-style-type: none"> ▪ Provide opportunities for the community to access parks and freely participate in recreational pursuits ▪ Increase park usage ▪ Encourage community health
<ul style="list-style-type: none"> ▪ Maximise the co-location of recreation facilities within proximity to other social infrastructure (eg. schools and shops), and transport hubs, and valued environmental and cultural assets such as waterways and conservation estates 	<ul style="list-style-type: none"> ▪ Protect and enhance valued environmental assets ▪ Maximise the efficient utilisation of natural resources ▪ Integrate land for recreation facilities with social services and physical and symbolic environmental and heritage values
<ul style="list-style-type: none"> ▪ Ensure recreational facilities are centrally located and accessible to the catchment they serve 	<ul style="list-style-type: none"> ▪ Equitable distribution for user access ▪ Promote cycle and walk trips for recreational purposes ▪ Improve access to recreation facilities ▪ Provide accessible local parks for pedestrians and cyclists
<ul style="list-style-type: none"> ▪ Provision of a network of city, district and local level sporting, outdoor recreation and recreation parks and community facilities, which have potential to be augmented to accommodate changes in demand and recreational and sporting trends 	<ul style="list-style-type: none"> ▪ Increase range of recreation facilities ▪ Provide recreation facilities that can be adapted to accommodate emergent user demands and recreational and sporting trends



Table 1-33 Recreation Facilities Network Design Criteria

Measure	Values to be Achieved
<ul style="list-style-type: none"> The standard of provision for recreation and sporting parks varies between the coastal area and the balance of the city in accordance with Table 1-34 to Table 1-39, which outline other planning and design data for the Recreation Facilities Network 	<ul style="list-style-type: none"> A standard of service that balances the high cost of supplying coastal land with demand for oceanside parkland
<ul style="list-style-type: none"> Access to different types of recreation facilities varies in accordance with Table 1-35 	<ul style="list-style-type: none"> Opportunity for reasonable access different types of recreation facilities
<ul style="list-style-type: none"> Works to be undertaken to ensure parks are 'fit for purpose' and augmentation in accordance with Table 1-39 	<ul style="list-style-type: none"> Recreation facilities that can be used for their intended purposes whilst retaining potential for augmentation
<ul style="list-style-type: none"> Size and configuration of recreation facilities are provided in accordance with Table 1-35 	<ul style="list-style-type: none"> Recreation facilities are of such a size and configuration that use is optimised
<ul style="list-style-type: none"> Post development flood immunity is in accordance with Table 1-37 	<ul style="list-style-type: none"> Ensures recreation facilities are safe and usable
<ul style="list-style-type: none"> Maximum grade is in accordance with Table 1-38 	<ul style="list-style-type: none"> Slope does not restrict use of the recreation facility
<ul style="list-style-type: none"> Recreation facilities are to contain a range of embellishments in accordance with Land Development Guidelines and Recreation Facilities Design Guidelines 	<ul style="list-style-type: none"> Enhance the attractiveness of parks with embellishments that address a range of community activities and improve the services provided

Table 1-34 to Table 1-39 outline other planning and design data for the Recreation Facilities Network.

Table 1-34 Area of Land Per 1000 People

Recreation Facilities Category	Coastal Zone (Ha/ 1000 Residents)			Northern and Southern Zones (Ha/1000 Residents)			All Zones for Commercial Uses (Ha/1000 Employees)
	Local	District	City	Local	District	City	Local
Recreation	1	1	0.5	1.5	1	0.5	0.25
Sport	n/a	0.3	0.2	n/a	1	0.4	n/a
Community Facilities	n/a	0.2	n/a	n/a	0.2		n/a
Outdoor Recreation	n/a	n/a	0.5	n/a	n/a	0.5	n/a
Total	3.7			5.1			0.25

Table 1-35 Access to Recreation Facilities

Recreation Facilities Category	Coastal Zone for Residential Uses			Northern and Southern Zones for Residential Uses			All Zones for Commercial Uses
	Local	District	City	Local	District	City	Local
Recreation	5 mins walk	10 mins drive	20 mins drive	5 mins walk	10 mins drive	20 mins drive	15 mins walk
Sport	n/a	10 mins drive	20 mins drive	n/a	10 mins drive	15 mins drive	n/a
Community Facilities	n/a	10 mins drive	n/a	n/a	10 mins drive		n/a
Outdoor Recreation	n/a	n/a	45 mins drive	n/a	n/a	30 mins drive	n/a



Table 1-36 Minimum Recreation/ Community Facilities Sizes

Recreation Facilities Category	Local	District	City
Recreation	1ha round or square	5ha round or square	15ha round or square
Sport	n/a	10ha round or square	15ha round or square
Community Facilities	n/a	0.2ha square	0.2ha square
Outdoor Recreation	n/a	n/a	5ha round or square

Note: *Linkage parks and trails should be linear.*

Table 1-37 Minimum Post-Development Flood Immunity

Recreation Facilities Category	>Q5	>Q50	>Q100
Local Recreation	25%	75%	0%
District Recreation	0%	90%	10%
City Recreation	50%	40%	10%
District Sport	0%	90%	10%
City Sport	50%	40%	10%
Community Facilities	0%	0%	100%
Outdoor Recreation	50%	40%	10%

Table 1-38 Maximum Areas for Maximum Grades (V:H)

Recreation Facilities Category	Maximum Grade (1:X) for Maximum % of site		
	Local	District	City
Recreation	1:10 for 20%	1:10 for 10%	1:10 for 20%
Sport	n/a	1:10 for 20%	1:10 for 20%
Community Facilities	n/a	1:10 for 2%	1:10 for 0%
Outdoor Recreation	n/a	n/a	1:10 for 50%

Table 1-39 Miscellaneous Criteria

Quality
<ul style="list-style-type: none"> ▪ 10% District land above Q100
<ul style="list-style-type: none"> ▪ 100% parkland above Q5
<ul style="list-style-type: none"> ▪ 0% encumbered by easement(s) of any type or form, or be known to be subject of planned or programmed future easement encumbrance(s)
<ul style="list-style-type: none"> ▪ 0% detention basin in part or whole, or be stormwater infrastructure, landscape, visual, odour, noise or other type of buffer, or be known to be subject of planned or programmed future use for such purposes
<ul style="list-style-type: none"> ▪ 0% contaminated or potentially hazardous, or situated in a hazardous area or in proximity to an approved, but undeveloped hazardous activity, such as a quarry
<ul style="list-style-type: none"> ▪ 0% less than 15m wide
<ul style="list-style-type: none"> ▪ Not to be planned or programmed for future use that is inconsistent with, or likely to compromise the purpose for which the land is dedicated



5.0 Plans For Trunk Infrastructure (PFTI)

5.1 Water Supply Network Plans For Trunk Infrastructure

5.1.1 Systems Included in the Water Supply Network

The systems included in the trunk Water Supply Network are:

- Potable water supply
- Recycled water supply

5.1.2 Water Supply Network Elements

The trunk infrastructure elements included in the Water Supply Network are described in **Table 1-40 – Water Supply Trunk Infrastructure Elements**.

Table 1-40 Water Supply Trunk Infrastructure Elements

Trunk Infrastructure System	Description
Potable water supply	<ul style="list-style-type: none"> ▪ Distribution mains ▪ Balance reservoirs and Seasonal storages (Not transferred to the State) ▪ Trunk mains for potable water from ground level reservoirs to the reticulation generally having a minimum size of 250 mm equivalent diameter (not transferred to the State) ▪ Elevated reservoirs ▪ Non-centralised ground level reservoirs ▪ Pump stations ▪ Rechlorination facilities ▪ Flow metering ▪ Telemetry and instrumentation systems
Recycled water supply	<ul style="list-style-type: none"> ▪ Recycled Water Treatment Plants ▪ Distribution mains ▪ Balance reservoirs and Seasonal storages ▪ Trunk mains for recycled water from ground level reservoirs to the reticulation generally having a minimum size of 200 mm equivalent diameter ▪ Pump stations ▪ Flow metering ▪ Telemetry and instrumentation systems

5.1.3 Basis for Future Planning

The basis for future planning detailed in the PFTI is outlined in the network planning reports referenced in **Division 3 Reference Documentation**.

5.1.4 Plans for Trunk Infrastructure

The PFTI for the Water Supply Network are shown in **Subclause 5.6 - Plans for Trunk Infrastructure Maps, Water Supply Network - Infrastructure Maps**. The schedule of proposed work is provided in the planning reports referenced in **Division 3 Reference Documentation**.

5.1.5 Infrastructure External to the Priority Infrastructure Area

The PFTI identifies trunk infrastructure that is located outside the PIA boundary



5.2 Wastewater Network Plans For Trunk Infrastructure

5.2.1 Systems Included in the Wastewater Network

The Wastewater Network comprises the wastewater system

5.2.2 Wastewater Network Elements

The trunk infrastructure elements included in the Wastewater Network are described in **Table 1-41 – Wastewater Trunk Infrastructure Elements**.

Table 1-41 Wastewater Trunk Infrastructure Elements

Trunk Infrastructure System	Description
Wastewater	<ul style="list-style-type: none"> ▪ Wastewater Treatment Plants ▪ Wastewater Release Systems ▪ Wastewater Storages ▪ Gravity sewers (generally having a minimum size of 300 mm equivalent diameter) ▪ Manholes ▪ Rising mains (generally having a minimum size of 225 mm equivalent diameter) ▪ Wastewater pumping stations (with rising mains generally having a minimum size of 225 mm equivalent diameter) ▪ Odour control and corrosion control systems ▪ Telemetry and instrumentation systems

5.2.3 Basis for Future Planning

The basis for future planning detailed in the PFTI is outlined in the network planning reports referenced in **Division 3 Reference Documentation**.

5.2.4 Plans for Trunk Infrastructure

The PFTI for the Wastewater Network are shown in **Subclause 5.6 - Plans for Trunk Infrastructure Maps, Wastewater Network - Infrastructure Maps**. The schedule of proposed work is provided in the planning reports referenced in **Division 3 Reference Documentation**.

5.2.5 Infrastructure External to the Priority Infrastructure Area

The PFTI identifies trunk infrastructure that is located outside the PIA boundary



5.3 Transport Network Plans For Trunk Infrastructure

5.3.1 Systems Included in the Transport Network

The Transport Network contains three integrated systems:

- a) Local Government and State-controlled roads;
- b) Public Transport; and
- c) Pedestrian and Cycle systems.

5.3.2 Transport Network Elements

The Transport Network trunk infrastructure elements are shown in **Table 1-42 Transport Network Trunk Infrastructure Elements**.

Table 1-42 Transport Network Trunk Infrastructure Elements

Trunk Infrastructure Element	Description
Trunk Road System	<ul style="list-style-type: none"> ▪ Elements consist of Arterial, Sub-Arterial and Distributor function roads. These roads are generally constructed to a profile as indicated within Council's Land Development Guidelines 2005
Public Transport System	<ul style="list-style-type: none"> ▪ Bus stops and shelters to be provided on the major bus routes every 400m
Pedestrian and Cycle System	<ul style="list-style-type: none"> ▪ In Road Reserve and Off Road urban and district pathways, coordinated with paths associated with trunk roads

5.3.3 Basis for Future Planning

The basis for future planning detailed in the **PFTI** is outlined in the network planning reports contained in the **PIP Extrinsic Material, Gold Coast Priority Infrastructure Plan – Derivation of Trunk Road Infrastructure Network Charges Report, June 2006 VLC Consulting**.

Planning is based on providing a functional hierarchy of roads through the City in which the structured pattern and characteristics of travel carried out upon the network are appropriately planned and located. This planning, aims to meet the range of operating characteristics carried out whilst fulfilling amenity and environmental objectives.

5.3.4 Plans For Trunk Infrastructure

Road System

The **PFTI** for the road system is shown in **Subclause 5.6 – Plans For Trunk Infrastructure Maps**. The trunk infrastructure components of the **PFTI** are detailed in the **Extrinsic Material**. The schedule of proposed work is provided in the **Table 1-43 Transport Network Schedule of Road System Works**.



Table 1-43 Transport Network Schedule of Road System Works

Road	From	To	Classification	Upgrade Works	Total Cost (\$)
Construction Period – 2005-2006					
Abraham Road	Reserve Road	Weir Drive	Four Lane – Urban	Total reconstruction	447,166
Abraham Road	Weir Drive	BP service road connection	Two Lane – Urban	Total reconstruction	1,733,073
Beattie Road	M1 Service Road	Dreamworld Parkway	Two Lane – Rural	New road link	1,132,560
Beattie Road	Dreamworld Parkway	Ford Road	Four Lane – Urban	Total reconstruction	3,485,922
Cheltenham Drive	Laver Drive	Thorngate Drive	Four Lane – Urban	Duplication	3,744,104
Foxwell Road	Cunningham Drive South	Oakey Creek Road	Four Lane – Urban	Total reconstruction	7,134,932
Jessica Drive	Reserve Road	Jacob Court	Residential Collector – Bus	New road link	2,726,461
McLaren Road	Gilston Road	Oakdale Avenue	Four Lane – Urban	Duplication	1,774,225
Reserve Road	Old Coach Road	Abraham Road	Four Lane – Urban	Total reconstruction	7,805,141
Robina Parkway	Gooding Drive	Markeri Street	Four Lane – Urban	Duplication	7,820,288
Robina Town Centre Drive	Pacific Motorway	Investigator Drive	Four Lane – Urban	Duplication	5,453,993
Stevens Street/ High Street intersection	High Street			Intersection improvement	214,400
Wuruga Road (int'n)	Dairy Creek Road	Prangley Road	Two Lane – Urban	Total reconstruction	3,429,240
Construction Period – 2007-2011					
Abraham Road	Days Road	BP service road connection	Four Lane – Urban	Total reconstruction	2,267,733
Amity Road/ Kerkin Road	Yawalpah Road	Foxwell Road	Two Lane – Urban	Total reconstruction	5,487,892
Ashmore Road	Geoff Wolter Drive	Smith Street	Four Lane – Urban	New road & duplication	8,468,258
Bahrs Scrub Road	Prangley Road	Beenleigh Beaudesert Road	Two Lane – Urban	Total reconstruction	3,256,065
Bermuda Street extension	Pacific Motorway	Tallebudgera Creek Road	Four Lane – Urban	New road link & upgrade	10,140,066
Binstead Way/ Kopps Road	Manra Way	Maudsland Road	Four Lane – Urban	Duplication	7,341,694
Bonogin Road	Tolga Road	Carrington Road	Two Lane Road – Urban	Upgrade/ realign	677,285
Bonogin Road	Somerset Drive	Riverina Court	Two Lane Road – Urban	Upgrade	545,591
Bonogin Road	Gunsynd Drive	Existing	Two Lane Road – Urban	Widening one side	290,188
Bonogin Road	Hardys Road	Existing	Two Lane Road – Urban	Total reconstruction	526,777
Bonogin Road	Roxby Court	Existing	Two Lane Road – Urban	Widening one side	181,367
Bonogin Road	Roxby Court	Bonogin Road East	Two Lane Road – Urban	Total reconstruction	5,165,489
Bonogin Road	Broadoak Court	Fairy Wren Court	Two Lane Road – Urban	Total reconstruction	4,835,064



Road	From	To	Classification	Upgrade Works	Total Cost (\$)
Christine Avenue	Scottsdale Drive	Regensberg Close	Four Lane – Urban	Duplication	3,853,273
Coomera Service Road	Foxwell Road	'Le Mans' connection	Four Lane – Urban	Total reconstruction	6,900,421
Coomera Service Road	Foxwell Road	Road 'G' connection road	Four Lane – Urban	New road link	9,251,610
Coomera Service Road	Beattie Road	Oxenford Hope Island Road	Four Lane – Urban	Upgrade and duplication	14,202,530
Coomera Service Road	Reserve Road	Abraham Road	Two Lane – Urban	New road link	4,500,678
Cunningham Drive North	Yawalpah Road	New road linking to 'Le Mans' I/C	Two Lane – Urban	Total reconstruction	3,780,730
Days Road	Old Coach Road	Abraham Road	Four Lane – Urban	Duplication & upgrade	3,508,913
Depot Road	Old Pacific Highway	Pimpama Jacobs Well Road	Two Lane – Urban	New road link	793,674
Discovery Drive	Gold Coast Highway	Millaroo Drive	Four Lane – Urban	Duplication, new road & upgrade	150,000
Finnegan Way	Northern end	Amity Road	Two Lane – Urban	New road link	5,234,833
Foxwell Road	Abraham Road	Cunningham Drive South	Six Lane Road – Urban	Total reconstruction	9,833,227
Foxwell Road	Oakey Creek Road	Colman Road	Two Lane – Urban	Total reconstruction	5,575,706
Gardiner Road	Brisbane Beenleigh Road	Dairy Creek Road	Two Lane – Urban	Total reconstruction	2,833,118
Gilston Road	Weedens Crossing Road	Cayuga Street	Four Lane – Urban	Duplication & upgrade	4,785,060
Hinkler Drive	Barrine Drive	Dormello Drive	Two Lane – Urban	New road link	1,323,982
Hinkler Drive	South of Alkira Way	North of Mudgeeraba Road	Two Lane – Urban	New road link	870,564
Hope Island Northern Service Road	Sickle Avenue	Crescent Avenue	Res Coll – bus route	New road link	5,318,236
Inner Ring Road	James Street	Kent Street	Four Lane – Urban	New road link	3,277,377
Millaroo Drive	Gold Coast Highway	Millaroo Drive M1 underpass connection	Two Lane – Urban	New road link	150,000
Mudgeeraba Road	Pacific Motorway	Worongary Road	Four Lane – Urban	Duplication & upgrade	5,041,775
Old Coach Road	Days Road	Existing	Four Lane – Urban	Duplication & upgrade	2,980,667
Old Coach Road	Reserve Road	Gannon Way	Two Lane – Urban	Total reconstruction	1,597,114
Ormeau Service Road	Pascoe Road	Peachey Road	Two Lane – Urban	New road link	5,056,523
Pacific Motorway Service Road	KP McGrath Drive	Cowell Drive	Two Lane Road – Urban	New road link	17,013,699
Pappas Way extension	Pappas Way	Alexander Drive	Two Lane – Urban	New road link	2,394,158
Peanaba Park Road	Bridie Drive	Existing	Two Lane – Urban	New road link	1,006,589
Pearson Road	Computer Road	Darlington Drive	Indust. Collector	Upgrade	1,834,860
Pimpama western Service Road	Mirambeena Drive M1 interchange	Hotham Creek Road	Two Lane – Urban	New road link	7,986,220
Pranglely Road	Wuraga Road	Bahrs Scrub Road	Two Lane – Urban	Total reconstruction	2,785,576



Road	From	To	Classification	Upgrade Works	Total Cost (\$)
Reserve Road	Hart Street	Old Coach Road	Four Lane – Urban	Total reconstruction	10,259,737
Smith Street	Pacific Pines Boulevard	Pacific Motorway	Four Lane – Urban	Duplication & upgrade	1,922,729
Somerset Drive	Gold Coast Springbrook Road	Bonogin Road	Four Lane – Urban	Duplication & upgrade	4,250,290
Stanmore Road	Beenleigh Beaudesert Road	Peachey Road	Four Lane – Urban	Upgraded alignment	19,230,357
Stanmore Road	Peachey Road	Elderslie Road	Four Lane – Urban	Second carriageway	9,274,968
Tolga Road	Bonogin Road	Observatory Drive	Two Lane Road – Urban	New road link	3,971,946
Via Roma	Salerno Street	Remembrance Drive	Four Lane – Urban	Duplication	7,164,246
Yawalpah Road	Pacific Motorway	Rail corridor	Four Lane – Urban	Duplication	2,792,970
Yawalpah Road	Rail corridor	IRTC	Four Lane – Urban	Initial two lanes	11,561,055

Construction Period – 2012-2016

Beattie Road	Dreamworld Parkway	Reserve Road	Two Lane – Urban	New road link	14,267,674
Christensen Road	Burnside Road	Existing Christensen Road	Indust. Collector	New road link	6,568,671
Coomera New Link	Cunningham Road North	'Le Mans' Interchange	Four Lane – Urban	New road link	27,647,416
Coomera New Link	Cunningham Road North	Edwardson Drive	Two Lane – Urban	New road link	6,728,429
Coomera New Link	Cunningham Road South	'Le Mans' connection road	Four Lane – Urban	New road link	9,658,333
Coomera Road 'G'	Service Road	Cunningham Drive Link Road	Four Lane – Urban	New road link	10,764,756
Dixon Drive	Yawalpah Road	Cunningham Drive	Two Lane – Urban	Total reconstruction	4,506,420
Eggersdorf Road Ormeau	Pacific Motorway	Jacobs Ridge Road	Four Lane – Urban	Duplication	3,209,086
Gilston Road	Weedens Crossing Road	McLaren Road	Four Lane – Urban	Duplication & upgrade	2,080,694
Helensvale Road	Discovery Drive	Hope Island Road	Four Lane – Urban	Duplication	11,055,244
Musgrave Avenue	Olsen Avenue	Kumbari Avenue	Four Lane – Urban	Duplication	3,363,577
Pearson Road – Sandy Creek Road	Pearson Road	Sandy Creek Road	Indust. Collector	New road link	3,964,836
Pearson Road	Peachey Road	Computer Road	Indust. Collector	New road link & upgrade	6,236,752
Quarry Connection Road	Rudman Parade	Bermuda Street	Indust. Collector	New road link	2,341,738
Reedy Creek Road	Rothcote Court	Ambassador Drive	Added lane to existing	West bound exit onto Reedy Creek Road	607,581
Reserve Road deviation	Tamborine Oxenford Road	Hart Street	Four Lane – Urban	New road link	4,226,814
Scottsdale Drive	Reedy Creek M1 Interchange	Christine Avenue	Four Lane – Urban	Duplication	3,517,187
Southern Service Road	Helensvale Road	Crescent Avenue	Res Coll – bus route	New road link	4,950,762
Teys Road	Brisbane Beenleigh Road	Tallagandra Road	Two Lane – Urban	Total reconstruction	2,921,033



Road	From	To	Classification	Upgrade Works	Total Cost (\$)
Teys Road	Tallagandra Road	Wuruga Road	Two Lane – Urban	Total reconstruction	850,889
Thomas Drive	Ferry Road	Existing	Bridge Widening	Additional lane	1,440,000
Wongawallan Drive	Stephens Street	Existing Wongawallan Drive	Two Lane – Urban	New road link	5,241,972
Wyllie Way connection	Lancashire Drive	Observatory Drive	Two Lane Road – Urban	New road link	9,923,287

Construction Period – 2017-2021

Baileys Mountain Road	Old Coach Road	Ruffles Road	Two Lane – Urban	Upgrade	3,960,238
Benowa Road	Cotlew Street	Drury Avenue	Four Lane – Urban	Duplication	1,588,523
Boyd Street	Gold Coast Highway	State border	Four Lane – Urban	Duplication & upgrade	6,128,177
Bundall Service Road	Commercial development		7.5m Service Road	New road links	4,583,158
Coolangatta Railway Cutting Connection	Miles Street	Musgrave Street	Two Lane Road – Urban	New road link	871,815
Coomera Road 'G'	Kristins Lane	Service Road	Two Lane – Urban	New road link	9,768,786
Darlington Drive	Stanmore Road	Cuthbert Drive/ Elderslie Drive	Four Lane – Urban	Duplication	2,970,069
Dine Court Bridge connection	Dine Court	Andalusian Drive	Residential Collector	New road link	2,568,075
Doubleview/ Simpsons/ Guineas Creek Road	Intersection			Intersection improvement	1,000,000
Eggersdorf Road Ormeau	Jacobs Ridge Road	IRTC	Four Lane – Urban	Initial two lanes	5,717,110
Elysium Drive Western connector	Pacific Motorway	Evanita Drive	Two Lane – Urban	New road link	12,647,859
Gateway Drive	Existing	Opp Telford Place intersection	10m wide Industrial Coll	New road link	1,371,123
Gaven Arterial	Binstead Way	Smith Street	Four Lane – Urban	Initial two lanes & four lane formation	6,705,990
Ghilgai Road extension	Existing	Laver Drive	Two Lane – Urban	New road link	11,616,192
Ghostgum Grove	Tamborine Oxenford Road	Brygon Creek Drive	Two Lane – Urban	New road link	20,599,451
Harburg Drive – Teys Road connection	Harburg Drive	Teys Road	Two Lane – Urban	New road link	3,839,726
Heins Road connection	Heins Road	Pranglely Road	Two Lane – Urban	New road link	4,092,683
Hickey Way extension	Hickey Way	Gooding Drive	Two Lane – Urban	New road link	5,781,878
Hotham Creek Road	Rifle Range Road	Ruffles Road	Two Lane – Urban	Upgrade	3,715,662
Intra Regional Transport Corridor (IRTC)	Foxwell Road	Yawalpah Road	Two Lane – Urban	New road link	11,874,872
Nerang by-pass	Nerang Beaudesert Road	Nerang Connection Road	Four Lane – Urban	New road link & upgrade	10,222,569
Old Coach Road	Gold Coast Springbrook Road	Tallai Road	Four Lane – Urban	Duplication & upgrade	4,825,692



Road	From	To	Classification	Upgrade Works	Total Cost (\$)
Ormeau Eastern Service Road	Eggersdorf Road	Mirambeena Drive	Two Lane – Urban	New road link	12,091,353
Pacific Motorway Crossing	The Link Road	The Glade	Two Lane – Urban	New road link	4,783,037
Pacific Motorway Service Road	Guineas Creek Road	Stewart Road	Two Lane Road – Urban	New road link	10,984,227
Reedy Creek Road	Billabong Site	Sunlight Drive	Indust. Collector	Service Road extension	733,830
Ruffles Road	Baileys Mountain Road	Crystal Creek Road	Two Lane – Urban	Upgrade	2,323,465
Ruffles Road	Hotham Creek Road	Crystal Creek Road	Two Lane – Urban	Upgrade	2,229,397
Santa Barbara Road	Hope Island Road	Caseys Road	Four Lane – Urban	Duplication	1,039,524
Teys – Gardiner connection	Teys Road	Gardiner Road	Two Lane – Urban	New road link	5,827,246
Teys Road to new connection road	Teys Road	New Road	Two Lane – Urban	New road link	1,398,492
Upper Ormeau Road	Mirambeena Road Interchange	Past Cliff Barrons Road	Four Lane – Urban	Total reconstruction	30,654,534
Total					654,942,289

Public Transport System

PFTI for public transport system are included in the above Schedule of Road System Works.

Cycle and Pedestrian System

The PFTI for the off road pedestrian/ cycle pathway system are shown in **Subclause 5.6 – Plans For Trunk Infrastructure Maps**.

The schedule of proposed works is provided in **Table 1-44 Bikeways Schedule**, **Table 1-45 Off Road Pathway Schedule** and **Table 1-46 Off Roads Cycle and Pedestrian Path Program**.

Table 1-44 Bikeways Schedule

Identifier	Road Name	Construction Cost (\$)	Structure Cost (\$)	Total Cost (\$)
Construction Period – 2005-2006				
B-1-012	River Hills Road Eagleby	144,452		144,452
B-2-002	Pascoe Road Ormeau	190,441		190,441
B-8-001	Nerang-Beaudesert Road Nerang	183,794		183,794
B-9-001	Oceanic Drive Mermaid Waters	60,139		60,139
B-9-002	Seabeach Avenue Mermaid Beach	31,838		31,838
B-9-003	Bourton Road Merrimac	339,610		339,610
B-9-004	Margaret Avenue Broadbeach	37,145		37,145
B-11-001	Somerset Drive Mudgeeraba	316,213		316,213
Total				1,303,632



Identifier	Road Name	Construction Cost (\$)	Structure Cost (\$)	Total Cost (\$)
Construction Period – 2007-2011				
B-1-003	Fryar Road Eagleby	97,874		97,874
B-1-006	Milne Street Beenleigh	179,828		179,828
B-1-007	James Street Beenleigh	106,128		106,128
B-1-008	Beaudesert-Beenleigh Road Beenleigh	332,534		332,534
B-1-013	Main Street Beenleigh	141,504		141,504
B-3-001	Foxwell Road Coomera	385,598		385,598
B-3-002	Mirambeena Road Ormeau	227,210		227,210
B-4-001	Michigan Drive Oxenford	232,302		232,302
B-5-001	Morala Avenue Runaway Bay	110,845		110,845
B-5-002	Morala Avenue Runaway Bay	58,960		58,960
B-5-003	Morala Avenue Runaway Bay	77,827		77,827
B-5-006	Musgrave Avenue Southport	159,192		159,192
B-6-001	Charlton Street Southport	64,266		64,266
B-7-004	Brolga Avenue Southport	175,111		175,111
B-10-001	Guineas Creek Road Elanora	141,504		141,504
			Total	2,490,683
Construction Period – 2012-2016				
B-1-005	Boundary Street Beenleigh	193,389		193,389
B-1-009	Carl Heck Boulevard Windaroo	188,672		188,672
B-2-001	Peachey Road Ormeau	693,370		693,370
B-5-004	Napper Road Parkwood	104,359		104,359
B-5-005	Captain Cook Drive Arundle	136,198		136,198
B-7-001	Anne Street Southport	139,735		139,735
B-7-002	Benowa Road Benowa	60,729		60,729
B-10-002	Durrant Street Tugun	73,110		73,110
B-10-003	Coolangatta Road Kirra	471,680		471,680
			Total	2,061,242
Construction Period – 2017-2021				
B-1-001	Station Street Bethania	97,284		97,284
B-1-002	River Hills Road Eagleby	140,325		140,325
B-1-004	Logan Street Eagleby	100,822		100,822
B-1-010	Castile Crescent Edens Landing	193,978		193,978
B-1-011	Castile Crescent Edens Landing	112,614		112,614
B-4-002	Helensvale Road Helensvale	220,698		220,698
B-5-007	Central Street Labrador	7,075		7,075
B-5-007	Central Street Labrador	20,046		20,046
B-5-007	Central Street Labrador	130,302		130,302
B-5-008	Smith Street Parkwood	124,406		124,406
B-6-002	Etna Street Surfers Paradise	45,989	607,500	653,489
B-7-003	Benowa Road Benowa	58,370	585,000	643,370
B-7-005	Campbell Street Bundall	197,516		197,516
			Total	2,641,925



Table 1-45 Off Road Pathway Schedule

Identifier	GH & D Route No.	Street Name	Width (m)	Length (m)	RATE (\$/m)	Cost (\$)	Total Cost (\$)
Construction Period – 2005-2006							
B-1-012	N6	River Hills Road Eagleby	2	1225	117.92	144,452	144,452
B-2-002	N9	Pascoe Road Ormeau	2	1615	117.92	190,441	190,441
B-8-001	Hinterland	Nerang-Beaudesert Road Nerang	2	1270	144.72	183,794	183,794
B-9-001	D62	Oceanic Drive Mermaid Waters	2	510	117.92	60,139	60,139
B-9-002	D67	Seabeach Avenue Mermaid Beach	2	270	117.92	31,838	31,838
B-9-003	N45	Bourton Road Merrimac	2	2880	117.92	339,610	339,610
B-9-004	T7	Margaret Avenue Broadbeach	2	315	117.92	37,145	37,145
B-11-001	Service Road	Somerset Drive Mudgeeraba	2	2185	144.72	316,213	316,213
Construction Period – 2007-2011							
B-1-003	D2	Fryar Road Eagleby	2	830	117.92	97,874	97,874
B-1-006	D4	Milne Street Beenleigh	2	1525	117.92	179,828	179,828
B-1-007	D5	James Street Beenleigh	2	900	117.92	106,128	106,128
B-1-008	D5	Beaudesert Beenleigh Road	2	2820	117.92	332,534	332,534
B-1-013	T24	Main Street Beenleigh	2	1200	117.92	141,504	141,504
B-3-001	D11	Foxwell Road Coomera	2	3270	117.92	385,598	385,598
B-3-002	N10	Mirambeena Drive Ormeau	2	1570	144.72	227,210	227,210
B-4-001	D16 (A)	Michigan Drive Oxenford	2	1970	117.92	232,302	232,302
B-5-001	D22	Morala Avenue Runaway Bay	2	940	117.92	110,845	110,845
B-5-002	D23	Morala Avenue Runaway Bay	2	500	117.92	58,960	58,960
B-5-003	D23	Morala Avenue Runaway Bay	2	660	117.92	77,827	77,827
B-5-006	D28	Musgrave Avenue Southport	2	1100	144.72	159,192	159,192
B-6-001	D40	Charlton Street Southport	2	545	117.92	64,266	64,266
B-7-004	N25	Brolga Avenue Southport	2	1485	117.92	175,111	175,111
B-10-001	D85	Guineas Creek Road Elanora	2	1200	117.92	141,504	141,504



Identifier	GH & D Route No.	Street Name	Width (m)	Length (m)	RATE (\$/m)	Cost (\$)	Total Cost (\$)
Construction Period – 2012-2016							
B-1-005	D3	Boundary Street Beenleigh	2	1640	117.92	193,389	193,389
B-1-009	D8	Carl Heck Boulevard Windaroo	2	1600	117.92	188,672	188,672
B-2-001	D8	Peachey Road Ormeau	2	5880	117.92	693,370	693,370
B-5-004	D24	Napper Road Parkwood	2	885	117.92	104,359	104,359
B-5-005	D25	Captain Cook Drive	2	1155	117.92	136,198	136,198
B-7-001	D36	Anne Street Southport	2	1185	117.92	139,735	139,735
B-7-002	D38	Benowa Road Benowa	2	515	117.92	60,729	60,729
B-10-002	D91	Durrant Street Tugun	2	620	117.92	73,110	73,110
B-10-003	D92	Coolangatta Road Kirra	2	4000	117.92	471,680	471,680
Construction Period – 2017-2021							
B-1-001	D1	Station Street Bethania (Concrete)	2	825	117.92	97,284	97,284
B-1-002	D2	River Hills Road Eagleby	2	1190	117.92	140,325	140,325
B-1-004	D2	Logan Street Eagleby	2	855	117.92	100,822	100,822
B-1-010	D94	Castile Crescent Edens Landing	2	1645	117.92	193,978	193,978
B-1-011	D94	Castile Crescent Edens Landing	2	955	117.92	112,614	112,614
B-4-002	D17	Helensvale Road Helensvale	2	1525	144.72	220,698	220,698
B-5-007	D30	Central Street Labrador	2	60	117.92	7,075	7,075
B-5-007	D30	Central Street Labrador	2	170	117.92	20,046	20,046
B-5-007	D30	Central Street Labrador	2	1105	117.92	130,302	130,302
B-5-008	D32	Smith Street Parkwood	2	1055	117.92	124,406	124,406
B-6-002	D53	Etna Street Surfers Paradise (Plus bridge of 135m – \$607,500)	2	390	117.92	45,989	653,489
B-7-003	D43	Benowa Road Benowa (Plus bridge of 130m – \$585,000)	2	495	117.92	58,370	643,370
B-7-005	D47	Campbell Street Bundall	2	1675	117.92	197,516	197,516
Total							8,497,483



Table 1-46 Off Roads Cycle and Pedestrian Path Program

	Year 2007-2011		Year 2012-2016		Year 2017-2021
Off road paths and cycle list	2,490,683	Off road paths and cycle list	2,061,242	Off road paths and cycle list	2,641,925
Improving shared path access around schools	500,000	Improving shared path access around schools	500,000	Improving shared path access around schools	500,000
Improve bikeway/ walkway Ocean Way (Nerang Southport – Gold Coast Highway)	1,000,000	Improve bikeway/ walkway Ocean Way (Broadbeach/ Margaret Av)	1,000,000	Improve bikeway/ walkway Ocean Way (Burleigh to Palm Beach)	1,000,000
Frank Street off road pathways	500,000	Nerang Broadbeach – Pacific Motorway to Ross Street	1,000,000	Grade separation of cycleway/ ped at Gooding Drive roundabout	3,000,000
Olsen Avenue link to Griffith University	1,000,000	Currumbin Creek ped/ cycle bridge on Gold Coast Hwy	5,000,000	Tallebudgera Road bridge link to West Burleigh Road linking ped/ cyclists to Tallebudgera Creek Conservation park	5,000,000
Upgrade to V1	500,000	Upgrade to V1	500,000	Upgrade to V1	500,000
Southport Bridge link and upgrade to Spit	1,000,000	Federation Walk 4 kms	1,000,000	Ped/ cycle link Campbell to Nerang Broadbeach	5,000,000
Linking Robina to Merrimac through Greenheart	3,000,000	Linking Merrimac to Carrara	3,000,000	Linking Carrara to Botanic Gardens	5,000,000
Linking Carrara to Gilston from Greenheart	3,000,000	Siganto/ Gwyor bridge ped/ cycle	1,000,000	Off road path on Old Coach Road – Reedy Creek	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Map 1	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 1	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 1	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Map 2	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 2	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 2	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Map 3	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 3	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 3	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Map 4	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 4	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 4	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Map 5	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 5	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 5	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Map 6	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 6	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 6	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Map 8	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 8	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 8	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Map 10	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 10	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Map 10	1,000,000
Provide missing links and widen sub-standard cycleways in Cycle Guide Rest of City Maps	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Rest of City Maps	1,000,000	Provide missing links and widen sub-standard cycleways in Cycle Guide Rest of City Maps	1,000,000
				Saltwater/ Coomera River walks and cycle paths	2,000,000
Total	21,990,000	Total	24,061,000	Total	34,641,000

Overall Total from 2007 – 2021 will be \$80,692,000.



Based on GHD report, **Integrated Regional Cycle Network Plan for South East Qld**, budget and long term planning for projected annual expenditure of \$4.5M.

5.3.5 Infrastructure External to the Priority Infrastructure Area

The **PFTI** includes trunk infrastructure that is located outside the PIA boundary.

5.3.6 State Infrastructure

The State-controlled road network is shown in **Subclause 5.6 – Plans For Trunk Infrastructure Maps**.

The Functional Road Hierarchy network indicating ‘Arterial’, ‘Sub-Arterial’ and ‘Distributor’ roads for State and Local roads are indicated in **Subclause 5.6 – Plans For Trunk Infrastructure Maps**.

The planning for State-controlled roads is based on DSS and considers the Statement of Intent descriptions developed for the District. Current Statements of Intent for all State-controlled road links are available at the Main Roads Office at 36 Cotton Street, Nerang, Telephone Number: 5596 9500.



5.4 Stormwater Network Plans For Trunk Infrastructure

5.4.1 Systems included in the Stormwater Network

The following drainage systems are included in the Stormwater Network:

- underground drainage systems (ie. pipes, box culverts, manholes, inlets, etc.)
- engineered flow paths (ie. overland flow paths and reserves)
- natural flow paths (ie. overland flow paths, waterways, creeks and rivers)
- stormwater quality improvement facilities

5.4.2 Stormwater Network Elements

Table 1-47 Stormwater Network Trunk Infrastructure Elements describes elements included and excluded from Stormwater Quantity and Quality.

Table 1-47 Stormwater Network Trunk Infrastructure Elements

Network Type	Includes	Excludes
Stormwater Quantity	<p>Council controlled components:</p> <ul style="list-style-type: none"> ▪ conventional stormwater drainage systems, ie. all pipes, box culverts, manholes and inlets ▪ detention and retention facilities ▪ cross road culverts ▪ engineered overland flow paths/ drains/ channels ▪ natural waterways 	<ul style="list-style-type: none"> ▪ private assets that will be retained by private ownership ▪ road crossings for new or proposed roads (as this is considered part of the road asset) ▪ privately owned/ controlled natural waterways, riparian corridors and natural wetlands ▪ local road swale drains ▪ kerb and channel ▪ drainage systems contained within development sites
Stormwater Quality	<p>Council controlled facilities:</p> <ul style="list-style-type: none"> ▪ wetlands ▪ ponds ▪ gross pollutant traps (GPT) ▪ bio-retention facilities ▪ gully pit GPTS ▪ all other such devices that service a catchment 	<ul style="list-style-type: none"> ▪ privately owned/ controlled on-site detention/retention facilities or on-site stormwater quality treatment facilities ▪ swale drains ▪ table drains ▪ treatment systems contained within private property that does not service neighbouring properties ▪ stormwater treatment facilities provided by development

5.4.3 Basis of Future Planning

The completion of detailed catchment studies is the most appropriate method to determine trunk drainage infrastructure requirements and respective infrastructure charges. With over 600 local drainage catchments identified within the city, the completion of these studies is a costly and time consuming process and cannot be completed for all catchments in the short term. Therefore, Council has elected to use the Like Catchment assessment provisions in the **IPA Infrastructure Guidelines** to determine the likely drainage works and infrastructure charges in all catchments.

The Like Catchment assessment process allows the findings of detailed works/studies in one catchment to be applied to other catchments with similar characteristics. In the knowledge that numerous catchments in the city were developed using various superseded drainage standards, Council has developed a simplified Like Catchment assessment for the determination of stormwater trunk infrastructure.

The following principles are considered in the Like Catchment methodology:

- a) trunk infrastructure assets or components within the catchment will be the only parts included in the infrastructure charge;
- b) the methodology adopted is utilised to broadly estimate likely infrastructure costs; and
- c) apportioning costs on a Like Catchment basis averages the infrastructure cost across catchments.



The Like Catchment approach also provides the following benefits:

- a) it is a simplified approach that should be understandable by the general public;
- b) there are linkages between the users within a catchment and the benefits from stormwater management within the catchment; and
- c) it allows broad infrastructure costs to be established to facilitate the collection of infrastructure charges and the apportionment of costs across all users of the infrastructure.

The Like Catchment approach considers the engineering, physical and development characteristics of each catchment and applies a consistent estimation process to determine likely infrastructure requirements, associated costs and infrastructure charge rates. This approach incorporates 'sketch' planning methodologies, which include:

- a) applying concepts from literature to estimate likely trunk infrastructure asset requirements;
- b) applying 'engineering and planning' commonsense to the likely infrastructure requirements within the catchment;
- c) factoring the value of the existing drainage system to arrive at a likely future stormwater trunk infrastructure value. The factor is a product (ie. a multiplication) of the respective scores for the following catchment characteristics;
- d) average age of the catchment's infrastructure (the older the development, the lower the existing drainage standard);
- e) whether canal estates are predominant features in the catchment (canal estates generally include shorter trunk drainage lengths);
- f) if it is a catchment with significant stormwater systems discharging to the beach front (where possible, beach catchments are to be diverted to inland waterways);
- g) whether the catchment is predominantly brownfield or greenfield development;
- h) the predominant land use of the catchment;
- i) the receiving waters of the catchment;
- j) the general catchment grade (ie. steep or flat); and
- k) whether overland flow paths are generally sufficient within the catchment.

Scores for the above catchment characteristics are based upon Council's experience, known local drainage problems, previous studies and/or drainage works and engineering judgement. This is an approximation method, and it has been tested against actual stormwater drainage projects that provide the DSS. It is important to note that it is not an exact method, but a method aimed at estimating the likely quantum of trunk infrastructure costs to facilitate the DSS for the city's holding capacity.

The resulting estimated trunk infrastructure costs are considered interim until fully detailed engineering investigations (ie. catchment studies) are completed to obtain a detailed assessment of stormwater infrastructure needs across the city. Detailed planning is provided in **Extrinsic Material**, the **GCCC Stormwater Charges Report by JWP February 2006**.

5.4.4 Assessment of Stormwater Trunk Infrastructure Requirements

The assessment of trunk infrastructure requirements in greenfield and brownfield areas was completed using the Like Catchment approach, as described in **Subclause 5.4.3** incorporating variations to account for contributed greenfield assets. The methodologies used to determine trunk infrastructure requirements in these areas are described below.

Greenfield Methodology

- a) Stormwater Quantity:

The Gold Coast **Planning Scheme** and **GCCC Land Development Guidelines** provide sufficient detail on the stormwater management infrastructure required to provide the DSS for the holding capacity of the city. In greenfield areas, developers will provide the majority of stormwater drainage assets as part of the conditions of development.

The Like Catchment assessment of the future drainage works for greenfield developments only accounts for potential augmentation of existing drainage systems to facilitate the city's holding capacity. It does not account for the majority of drainage systems that will be provided by developers.



b) Stormwater Quality:

The **Planning Scheme** and **GCCC Land Development Guidelines** provide sufficient detail on the stormwater management infrastructure required to provide the DSS for holding capacity. In greenfield areas, developers will provide the majority of stormwater quality assets as part of the conditions of development. A preliminary Like Catchment assessment for holding capacity stormwater quality infrastructure in greenfield areas was completed by Council. However, it is not appropriate to introduce a charge for the provision of all stormwater quality assets in greenfield areas when the majority of these required assets are provided by development. Detailed stormwater quality planning reports and interim stream bank stabilisation works in greenfield catchments will be funded by infrastructure charges.

c) Road Cross-Culverts:

Road cross-culverts are required to convey floodwaters to ensure that they provide adequate flood immunity to the road. The approach to develop the Stormwater Infrastructure Charges Schedule includes a Like Catchment assessment for road cross-culverts based upon the finding of several catchment reports.

The methodology adopted for road cross-culverts is as follows:

- i) Identify existing road cross-culvert and bridge infrastructure in greenfield catchments from GIS resources using the following criteria:
 - culverts are to be within greenfield catchments;
 - culverts do not cross Main Roads (that is, not across State Government roads);
- ii) Group the culverts to align all infrastructure to a cost per catchment;
- iii) Determine the value of future culverts using existing studies, current unit rates and engineering estimation techniques; and
- iv) Add the determined culvert values to the holding capacity stormwater quantity infrastructure value for the respective financial charge areas for inclusion in the **Stormwater Infrastructure Charges Schedule**.

Brownfield Methodology

a) Stormwater Quantity:

The Like Catchment assessment as described in Subclause 5.4.3 will account for the future brownfield stormwater quantity trunk infrastructure.

b) Stormwater Quality:

In certain brownfield circumstances, there are opportunities to retrofit Stormwater Quality Improvement Devices (SQIDs) such as gross pollutant traps, wetlands, bio-retention systems and urban stream rehabilitation to manage stormwater quality.

The estimation of the future stormwater quality trunk infrastructure was undertaken using the following approach:

- i) From Council's past Capital Expenditure Programs, the cost of SQID projects (\$/impervious hectare) in brownfield catchments was established.
- ii) The estimated value of future SQIDs that can be retrofitted in each catchment was determined using the \$/ha rate.
- iii) The capital expenditure program for stormwater quality trunk infrastructure is based on the program for stormwater quantity trunk infrastructure works. This will allow stormwater quality infrastructure construction works to coincide with the respective planning and construction of stormwater quantity trunk infrastructure.



5.4.5 Plans For Trunk Infrastructure

Plans For Trunk Infrastructure have been prepared of all areas of city using suburbs as financial catchment areas. This approach was taken for the following reasons:

- a) there are in excess of 600 local drainage catchments within the city and development of 600 plans for trunk infrastructure is not practical;
- b) suburbs were generally developed using consistent superseded drainage standards which fits well with the Like Catchment assessment process adopted for the planning of stormwater infrastructure and associated charges;
- c) water-shed catchments generally cross suburb boundaries and can contain various drainage standards due to the development sequence of respective suburbs; and
- d) the public and developers can easily identify the suburb in which a development is located.

PFTI for the Stormwater Network are shown in **Subclause 5.6 – Plans For Trunk Infrastructure Maps** and include details on the existing drainage system and time frames for drainage works.

5.4.6 Infrastructure External to the Priority Infrastructure Area

The **PFTI** identifies trunk infrastructure that is located outside the PIA boundary.

The **PFTI** identifies trunk infrastructure that is planned to be supplied beyond the 2021 planning horizon of the PIP but which will be used by development that occurs prior to 2021.

5.4.7 State Infrastructure

State Government stormwater infrastructure is integrated with Council's stormwater infrastructure to facilitate the management of stormwater in all catchments. As such, existing State and Council controlled stormwater infrastructure are shown on the **PFTI**. However, all future stormwater infrastructure funded through the ICS for stormwater will be Council assets, not State assets.



5.5 Recreation Facilities Network Plans For Trunk Infrastructure

5.5.1 Systems Included in the Recreation Facilities Network

The Recreation Facilities Network comprises an integrated system of:

- local and district/city recreation parks
- local and district/city sporting parkland
- city outdoor recreation parks
- land only for other community facilities

5.5.2 Recreation Facilities Network Elements

The trunk infrastructure elements included in the Recreation Facilities Network are described in **Table 1-48 Recreation Facilities Network Trunk Infrastructure Elements**.

Table 1-48 Recreation Facilities Network Trunk Infrastructure Elements

Trunk Infrastructure Element	Description
Recreation Parks	<ul style="list-style-type: none"> ▪ Local, District and Citywide Recreation Parks, Linkage Parks and associated works and embellishments
Sporting Parkland	<ul style="list-style-type: none"> ▪ District or Citywide Sporting Parks, and associated works and embellishments
Land for Community Facilities	<ul style="list-style-type: none"> ▪ The land only component on which future community facilities will be built, such as community centres and halls, swimming pools, changing facilities, libraries, clubhouses, and scout and guide halls, etc
Outdoor Recreation Parks	<ul style="list-style-type: none"> ▪ Citywide Outdoor Recreation Parks, Recreational Trails, and associated works

Figure 1-3 Trunk and Non-Trunk Recreation Facilities Infrastructure identifies the relationship between trunk (shaded and bolded) and non-trunk infrastructure. This diagram identifies the relationship between Public Open Space and the components for which charges are derived in the Recreation Facilities Network ICS.

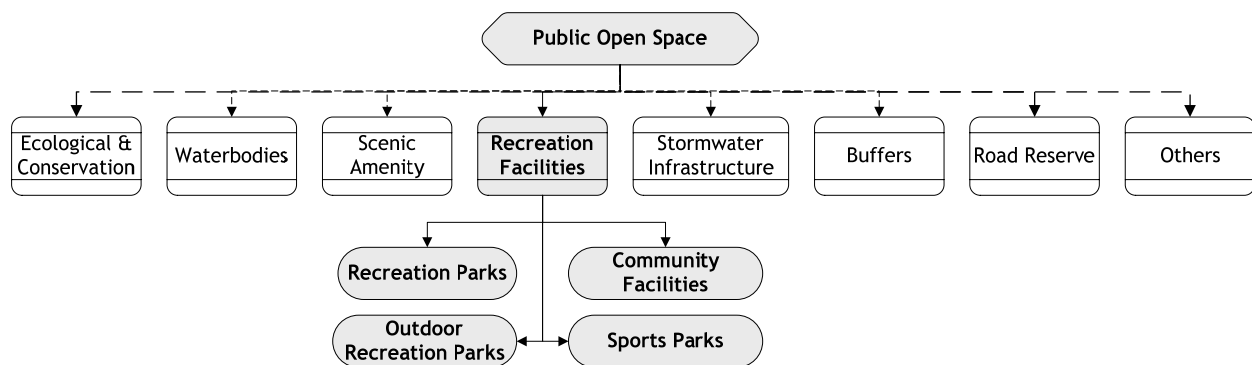


Figure 1-3 Trunk and Non-Trunk Recreation Facilities Infrastructure

5.5.3 Basis for Future Planning

A Demand Management approach underpins planning for future recreation facilities. The basis for future planning detailed in the **PFTI** is outlined in the network planning reports contained in the **Extrinsic Material**:

- **Recreation, Sport & Open Space Plan 2005**
- **Northern Growth Corridor Recreation, Sport & Open Space Plan 2005**

The **PFTI** also identifies trunk infrastructure that is planned to be supplied beyond the 2021 planning horizon of the PIP but which will be used by development that occurs prior to 2021.



5.5.4 Plans For Trunk Infrastructure

Plans for trunk Infrastructure are shown in **Subclause 5.6 – Plans For Trunk Infrastructure Maps**. These maps should be read in conjunction with **Table 1-33 Recreation Facilities Network Design Criteria**.

5.5.5 Infrastructure External to the Priority Infrastructure Area

An informal trails system and other components of the Recreation Facilities Network exist outside the PIA.

5.5.6 State Infrastructure

The Queensland State Government also plans and delivers Recreation Infrastructure in addition to the **PFTI** under this PIP. GCCC may provide the land for State Government Recreation Infrastructure and/or may maintain embellishments on State land used for Recreation.



5.6 Plans For Trunk Infrastructure Maps

5.6.1 List of Plans For Trunk Infrastructure Maps

Table 1-49 Infrastructure Maps Group 2 – Transport PFTI

Transport Plans For Trunk Infrastructure Maps
Transport Network – Infrastructure Map – IM2 Index
Transport Network – Infrastructure Map – IM2-1 Road System
Transport Network – Infrastructure Map – IM2-2 Beenleigh
Transport Network – Infrastructure Map – IM2-3 Carrara-Burleigh
Transport Network – Infrastructure Map – IM2-4 Central
Transport Network – Infrastructure Map – IM2-5 Coastal Core
Transport Network – Infrastructure Map – IM2-6 Coastal North
Transport Network – Infrastructure Map – IM2-7 Coomera
Transport Network – Infrastructure Map – IM2-8 Hinterland South
Transport Network – Infrastructure Map – IM2-9 Hinterland West
Transport Network – Infrastructure Map – IM2-10 Jacobs Well
Transport Network – Infrastructure Map – IM2-11 Nerang
Transport Network – Infrastructure Map – IM2-12 Pacific Pines-Hope Island
Transport Network – Infrastructure Map – IM2-13 South
Transport Network – Infrastructure Map – IM2-14 Yatala
Trails Network – Infrastructure Map – IM2-15
Trails Network – Infrastructure Map – IM2-16
Trails Network – Infrastructure Map – IM2-17
Trails Network – Infrastructure Map – IM2-18
Trails Network – Infrastructure Map – IM2-19
Trails Network – Infrastructure Map – IM2-20
Trails Network – Infrastructure Map – IM2-21
Trails Network – Infrastructure Map – IM2-22
Trails Network – Infrastructure Map – IM2-23
Trails Network – Infrastructure Map – IM2-24
Trails Network – Infrastructure Map – IM2-25
Trails Network – Infrastructure Map – IM2-26
Trails Network – Infrastructure Map – IM2-27
Trails Network – Infrastructure Map – IM2-28
Trails Network – Infrastructure Map – IM2-29
Trails Network – Infrastructure Map – IM2-30
Trails Network – Infrastructure Map – IM2-31



Table 1-50 Infrastructure Maps Group 3 – Stormwater PFTI

Stormwater Plans For Trunk Infrastructure Maps
Stormwater Network – Infrastructure Map – IM3 Index
Stormwater Network – Infrastructure Map – IM3-1 Advancetown
Stormwater Network – Infrastructure Map – IM3-2 Alberton
Stormwater Network – Infrastructure Map – IM3-3 Arundel
Stormwater Network – Infrastructure Map – IM3-4 Ashmore
Stormwater Network – Infrastructure Map – IM3-5 Austinville
Stormwater Network – Infrastructure Map – IM3-6 Bahrs Scrub
Stormwater Network – Infrastructure Map – IM3-7 Bannockburn
Stormwater Network – Infrastructure Map – IM3-8 Beenleigh
Stormwater Network – Infrastructure Map – IM3-9 Belivah
Stormwater Network – Infrastructure Map – IM3-10 Benowa
Stormwater Network – Infrastructure Map – IM3-11 Bethania
Stormwater Network – Infrastructure Map – IM3-12 Biggera Waters
Stormwater Network – Infrastructure Map – IM3-13 Bilinga
Stormwater Network – Infrastructure Map – IM3-14 Bonogin
Stormwater Network – Infrastructure Map – IM3-15 Broadbeach
Stormwater Network – Infrastructure Map – IM3-16 Broadbeach Waters
Stormwater Network – Infrastructure Map – IM3-17 Bundall
Stormwater Network – Infrastructure Map – IM3-18 Burleigh Heads
Stormwater Network – Infrastructure Map – IM3-19 Burleigh Waters
Stormwater Network – Infrastructure Map – IM3-20 Carrara
Stormwater Network – Infrastructure Map – IM3-21 Cedar Creek
Stormwater Network – Infrastructure Map – IM3-22 Clagiraba (no map available)
Stormwater Network – Infrastructure Map – IM3-23 Clear Island Waters
Stormwater Network – Infrastructure Map – IM3-24 Coolangatta
Stormwater Network – Infrastructure Map – IM3-25 Coombabah
Stormwater Network – Infrastructure Map – IM3-26 Coomera
Stormwater Network – Infrastructure Map – IM3-27 Currumbin
Stormwater Network – Infrastructure Map – IM3-28 Currumbin Valley
Stormwater Network – Infrastructure Map – IM3-29 Currumbin Waters
Stormwater Network – Infrastructure Map – IM3-30 Eagleby
Stormwater Network – Infrastructure Map – IM3-31 Edens Landing
Stormwater Network – Infrastructure Map – IM3-32 Elanora
Stormwater Network – Infrastructure Map – IM3-33 Gaven
Stormwater Network – Infrastructure Map – IM3-34 Gilberton
Stormwater Network – Infrastructure Map – IM3-35 Gilston
Stormwater Network – Infrastructure Map – IM3-36 Guanaba
Stormwater Network – Infrastructure Map – IM3-37 Helensvale
Stormwater Network – Infrastructure Map – IM3-38 Highland Park



Stormwater Plans For Trunk Infrastructure Maps

Stormwater Network – Infrastructure Map – IM3-39 Hollywell

Stormwater Network – Infrastructure Map – IM3-40 Holmview

Stormwater Network – Infrastructure Map – IM3-41 Hope Island

Stormwater Network – Infrastructure Map – IM3-42 Jacobs Well

Stormwater Network – Infrastructure Map – IM3-43 Kingsholme

Stormwater Network – Infrastructure Map – IM3-44 Labrador

Stormwater Network – Infrastructure Map – IM3-45 Lower Beechmont

Stormwater Network – Infrastructure Map – IM3-46 Luscombe

Stormwater Network – Infrastructure Map – IM3-47 Main Beach

Stormwater Network – Infrastructure Map – IM3-48 Maudsland

Stormwater Network – Infrastructure Map – IM3-49 Mermaid Beach

Stormwater Network – Infrastructure Map – IM3-50 Mermaid Waters

Stormwater Network – Infrastructure Map – IM3-51 Merrimac

Stormwater Network – Infrastructure Map – IM3-52 Miami

Stormwater Network – Infrastructure Map – IM3-53 Molendinar

Stormwater Network – Infrastructure Map – IM3-54 Mount Nathan

Stormwater Network – Infrastructure Map – IM3-55 Mount Warren Park

Stormwater Network – Infrastructure Map – IM3-56 Mudgeeraba

Stormwater Network – Infrastructure Map – IM3-57 Natural Bridge (no map available)

Stormwater Network – Infrastructure Map – IM3-58 Nerang

Stormwater Network – Infrastructure Map – IM3-59 Norwell

Stormwater Network – Infrastructure Map – IM3-60 Numinbah Valley (no map available)

Stormwater Network – Infrastructure Map – IM3-61 Ormeau

Stormwater Network – Infrastructure Map – IM3-62 Ormeau Hills

Stormwater Network – Infrastructure Map – IM3-63 Oxenford

Stormwater Network – Infrastructure Map – IM3-64 Pacific Pines

Stormwater Network – Infrastructure Map – IM3-65 Palm Beach

Stormwater Network – Infrastructure Map – IM3-66 Paradise Point

Stormwater Network – Infrastructure Map – IM3-67 Parkwood

Stormwater Network – Infrastructure Map – IM3-68 Pimpama

Stormwater Network – Infrastructure Map – IM3-69 Reedy Creek

Stormwater Network – Infrastructure Map – IM3-70 Robina

Stormwater Network – Infrastructure Map – IM3-71 Runaway Bay

Stormwater Network – Infrastructure Map – IM3-72 South Stradbroke Island

Stormwater Network – Infrastructure Map – IM3-73 Southern Moreton Bay Islands (no map available)

Stormwater Network – Infrastructure Map – IM3-74 Southport

Stormwater Network – Infrastructure Map – IM3-75 Springbrook (no map available)

Stormwater Network – Infrastructure Map – IM3-76 Stapylton

Stormwater Network – Infrastructure Map – IM3-77 Steiglitz

Stormwater Network – Infrastructure Map – IM3-78 Surfers Paradise



Stormwater Plans For Trunk Infrastructure Maps

Stormwater Network – Infrastructure Map – IM3-79 Tallai
Stormwater Network – Infrastructure Map – IM3-80 Tallebudgera
Stormwater Network – Infrastructure Map – IM3-81 Tallebudgera Valley
Stormwater Network – Infrastructure Map – IM3-82 Tugun
Stormwater Network – Infrastructure Map – IM3-83 Upper Coomera
Stormwater Network – Infrastructure Map – IM3-84 Varsity Lakes
Stormwater Network – Infrastructure Map – IM3-85 Waterford
Stormwater Network – Infrastructure Map – IM3-86 Willow Vale
Stormwater Network – Infrastructure Map – IM3-87 Windaroo
Stormwater Network – Infrastructure Map – IM3-88 Wolffdene
Stormwater Network – Infrastructure Map – IM3-89 Wongawallan
Stormwater Network – Infrastructure Map – IM3-90 Woongoolba
Stormwater Network – Infrastructure Map – IM3-91 Worongary
Stormwater Network – Infrastructure Map – IM3-92 Yatala

Table 1-51 Infrastructure Maps Group 4 – Recreation Facilities PFTI

Recreation Facilities Plans For Trunk Infrastructure Maps

Recreation Facilities Network – Infrastructure Map – IM4 Index
Recreation Facilities Network – Infrastructure Map – IM4a Planning Zones
Recreation Facilities Network – Infrastructure Map – IM4-1
Recreation Facilities Network – Infrastructure Map – IM4-2
Recreation Facilities Network – Infrastructure Map – IM4-3
Recreation Facilities Network – Infrastructure Map – IM4-4
Recreation Facilities Network – Infrastructure Map – IM4-5
Recreation Facilities Network – Infrastructure Map – IM4-6
Recreation Facilities Network – Infrastructure Map – IM4-7
Recreation Facilities Network – Infrastructure Map – IM4-8
Recreation Facilities Network – Infrastructure Map – IM4-9
Recreation Facilities Network – Infrastructure Map – IM4-10
Recreation Facilities Network – Infrastructure Map – IM4-11
Recreation Facilities Network – Infrastructure Map – IM4-12
Recreation Facilities Network – Infrastructure Map – IM4-13
Recreation Facilities Network – Infrastructure Map – IM4-14
Recreation Facilities Network – Infrastructure Map – IM4-15
Recreation Facilities Network – Infrastructure Map – IM4-16
Recreation Facilities Network – Infrastructure Map – IM4-17
Recreation Facilities Network – Infrastructure Map – IM4-18
Recreation Facilities Network – Infrastructure Map – IM4-19
Recreation Facilities Network – Infrastructure Map – IM4-20
Recreation Facilities Network – Infrastructure Map – IM4-21
Recreation Facilities Network – Infrastructure Map – IM4-22



Table 1-52 Infrastructure Maps Group 5 – Water Supply PFTI

Water Supply Plans For Trunk Infrastructure Maps
Water Supply Network – Infrastructure Map – IM5 Index
Water Supply Network – Infrastructure Map – IM5-1
Water Supply Network – Infrastructure Map – IM5-2
Water Supply Network – Infrastructure Map – IM5-3
Water Supply Network – Infrastructure Map – IM5-4
Water Supply Network – Infrastructure Map – IM5-5
Water Supply Network – Infrastructure Map – IM5-6
Water Supply Network – Infrastructure Map – IM5-7
Water Supply Network – Infrastructure Map – IM5-8
Water Supply Network – Infrastructure Map – IM5-9
Water Supply Network – Infrastructure Map – IM5-10
Water Supply Network – Infrastructure Map – IM5-11
Water Supply Network – Infrastructure Map – IM5-12
Water Supply Network – Infrastructure Map – IM5-13
Water Supply Network – Infrastructure Map – IM5-14



Table 1-53 Infrastructure Maps Group 6 – Wastewater PFTI

Wastewater Plans For Trunk Infrastructure Maps
Wastewater Network – Infrastructure Map – IM6 Index
Wastewater Network – Infrastructure Map – IM6-1
Wastewater Network – Infrastructure Map – IM6-2
Wastewater Network – Infrastructure Map – IM6-3
Wastewater Network – Infrastructure Map – IM6-4
Wastewater Network – Infrastructure Map – IM6-5
Wastewater Network – Infrastructure Map – IM6-6
Wastewater Network – Infrastructure Map – IM6-7
Wastewater Network – Infrastructure Map – IM6-8
Wastewater Network – Infrastructure Map – IM6-9
Wastewater Network – Infrastructure Map – IM6-10
Wastewater Network – Infrastructure Map – IM6-11
Wastewater Network – Infrastructure Map – IM6-12
Wastewater Network – Infrastructure Map – IM6-13
Wastewater Network – Infrastructure Map – IM6-14
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Wastewater Network – Infrastructure Map – IM6-31