Redcliffe City Planning Scheme
Volume 3 – Priority Infrastructure Plan

Part 1 – Priority Infrastructure Plan

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Part 1 – Priority Infrastructure Plan

1.1 Preliminary

1.1.1 INTRODUCTION

This priority infrastructure plan (PIP) has been prepared based on framework in the *Sustainable Planning Act 2009* (SPA).

As part of the *Redcliffe City Planning Scheme 2005*, this priority infrastructure plan applies to the area comprising the former Redcliffe City (both the planning scheme area and the PIP area).

1.1.2 PURPOSE

The primary purpose of this priority infrastructure plan is:

1) to integrate and coordinate land use planning and trunk infrastructure planning;
2) to establish a mechanism aimed at ensuring that the provision of trunk infrastructure is performed in an efficient and orderly manner; and
3) to establish a trunk infrastructure funding framework that is equitable and accountable.

1.1.3 STRUCTURE OF PRIORITY INFRASTRUCTURE PLAN

This priority infrastructure plan:-

1) identifies in s 1.2 (Applying the Priority Infrastructure Plan) how it will be applied to development;
2) outlines in s 1.3 (Planning Assumptions) the projections of future urban growth for the planning horizon of this priority infrastructure plan and the assumptions of demand for each trunk infrastructure network, which have informed the preparation of this plan;
3) identifies in s 1.4 (Priority Infrastructure Area) the area which will accommodate anticipated future urban growth up to the planning horizon of this plan;
4) states in s 1.5 (Desired Standards of Service) the desired standard of performance for each network of development infrastructure;
5) identifies in s 1.6 (Plans for Trunk Infrastructure) the existing and planned trunk infrastructure for each of the following networks:-
   A) Water supply;
   B) Sewerage;
   C) Stormwater;
   D) Transport; and
   E) Public open space.

1.2 Applying the Priority Infrastructure Plan

1.2.1 APPLYING THE PRIORITY INFRASTRUCTURE PLAN TO DEVELOPMENT

This priority infrastructure plan sets out the criteria and methodology used for:-

1) establishing infrastructure charge rates and calculating infrastructure charges applicable to a development; and
2) determining those instances where Council is likely to impose a condition on a development approval requiring:-
   A) the supply of necessary trunk infrastructure; and/or
   B) the payment of additional trunk infrastructure costs.

1.2.2 INFRASTRUCTURE CHARGES

Infrastructure charges applicable to a development are to be calculated in the manner prescribed in Council's Adopted Infrastructure Charges Resolution for that part of Council's local government area covered by the *Redcliffe City Planning Scheme 2005*.

1.2.3 SUPPLY OF NECESSARY TRUNK INFRASTRUCTURE

In those instances where a development approval includes a condition requiring the supply of necessary trunk infrastructure, the agreed value of the necessary trunk infrastructure supplied will be offset against an adopted infrastructure charge levied for that infrastructure in the manner agreed between the infrastructure provider and the development proponent.

1.2.4 TEST FOR INCONSISTENCY WITH ASSUMPTIONS

The Act allows that, in certain prescribed circumstances, a condition requiring the payment of additional infrastructure costs may be included in a development approval. Such circumstances include where the development is inconsistent with the planning assumptions used in this priority infrastructure plan, and/or is located wholly or partially outside the priority infrastructure area.

Development is inconsistent with the planning assumptions if:-

1) the calculated infrastructure demand rates corresponding to the scale and type of development proposed exceed the planned rates identified for the applicable zone and network type in table 1.2.1; or
2) the timing of the development is such that trunk infrastructure required to service the premises needs to be supplied earlier than planned under this PIP[1].

[1] In determining whether trunk infrastructure will need to be supplied earlier than planned, Council will give consideration to:-

   A) the amount of development projected for that development type for the relevant time period and location as reflected in the assumptions set out in tables 1.3.7 and 1.3.9; and
   B) the amount of infrastructure demand projected for the relevant time period and location as reflected in the assumptions set out in tables 1.3.10, 1.3.11, 1.3.12, 1.3.13, 1.3.14, 1.3.15, 1.3.16 and 1.3.17.

Table 1.2.1
Planned infrastructure demand factors for all trunk infrastructure networks

	Planned Infrastructure Demand Factors													
Planning Scheme Zone	**Water Supply**		**Sewerage**		**Stormwater Quality**		**Stormwater Quantity**		**Trunk Roads**		**Pathways**		**Open Space**	
Lot type	**EPW**	**Assessment Unit**	**EPS**	**Assessment Unit**	**CF_{QAL}**	**Assessment Unit**	**CF_{QTY}**	**Assessment Unit**	**CTE**	**Assessment Unit**	**CTE**	**Assessment Unit**	**EP**	**Assessment Unit**
Low Density Residential					1.32	Developable area (Ha)	0.13	Developable area (Ha)	6.5	Lot	6.5	Lot	2.9 1.3	detached dwelling attached dwelling
Lot Size < **501m²**	2	Lot	2.02	Lot										
Lot Size **501-1500 m²**	2.6	Lot	2.62	Lot										
Lot Size **>1500 m²**	30	Ha	30.26	Ha										
Mixed Residential					1.52	Developable area (Ha)	0.15	Ha	Developable area (Ha)	Lot	6.5	Dwelling unit	2.9 1.3	detached dwelling attached dwelling
Lot Size < **501m²**	2	Lot	2.02	Lot										
Lot Size **501-700 m²**	2.6	Lot	2.62	Lot										
Lot Size **>700 m²**	60	Ha	60.52	Ha										
Medium Density Residential					1.63	Developable area (Ha)	0.19	Ha	Developable area (Ha)	Lot	4	Dwelling unit	2.9 1.3	detached dwelling attached dwelling
< 3 Storeys														
Lot Size < **501m²**	2	Lot	2.02	Lot										
Lot Size	2.6	Lot	2.62	Lot										

	Planned Infrastructure Demand Factors													
Planning Scheme Zone	**Water Supply**		**Sewerage**		**Stormwater Quality**		**Stormwater Quantity**		**Trunk Roads**		**Pathways**		**Open Space**	
Lot type	**EPW**	**Assessment Unit**	**EPS**	**Assessment Unit**	**CF_{QAL}**	**Assessment Unit**	**CF_{QTY}**	**Assessment Unit**	**CTE**	**Assessment Unit**	**CTE**	**Assessment Unit**	**EP**	**Assessment Unit**
501-750 m^2														
Lot Size **>750 m^2**	60	Ha	60.52	Ha										
Lots that can accommodate up to 3 Storeys	120	Ha	121.05	Ha										
Lots that can accommodate up to 6 Storeys	175	Ha	176.53	Ha										
Lots that can accommodate up to 8 Storeys	220	Ha	221.92	Ha										
Community Purpose (not intended for education uses)	30	Ha	30.26	Ha	1.32	Developable area (Ha)	0.19	Developable area (Ha)	10	100m2 site area	10	100m2 site area	0.3	100 m2GFA
Community Purpose (intended for education uses)	30	Ha	30.26	Ha	1.32	Developable area (Ha)	0.19	Developable area (Ha)	3	Staff Member & Student	3	Staff Member & Student	0.3	100 m2GFA
Frame Business					1.74	Developable area (Ha)	0.19	Developable area (Ha)	10	100m2 site area	10	100m2 site area	0.3	100 m2GFA
Lots that can accommodate	30	Ha	30.26	Ha										

	Planned Infrastructure Demand Factors													
Planning Scheme Zone	**Water Supply**		**Sewerage**		**Stormwater Quality**		**Stormwater Quantity**		**Trunk Roads**		**Pathways**		**Open Space**	
Lot type	**EPW**	**Assessment Unit**	**EPS**	**Assessment Unit**	**CF_{QAL}**	**Assessment Unit**	**CF_{QTY}**	**Assessment Unit**	**CTE**	**Assessment Unit**	**CTE**	**Assessment Unit**	**EP**	**Assessment Unit**
1-2 storeys														
Lots that can accommodate up to 3 storeys	120	Ha	121.05	Ha										
Lots that can accommodate up to 6 storeys	175	Ha	176.53	Ha										
Lots that can accommodate up to 8 storeys	220	Ha	221.92	Ha										
Lots that can accommodate up to 12 storeys	260	Ha	262.27	Ha										
Health Services	30	Ha	30.26	Ha	1.74	Developable area (Ha)	0.19	Developable area (Ha)	20	100m2 site area			0.3	100 m2GFA
Industry	30	Ha	30.26	Ha	1.9	Developable area (Ha)	0.19	Developable area (Ha)	2.5	100m2 site area			0.3	100 m2GFA
Open Space and Recreation	5	Ha	5.04	Ha					6.5	Lot				
Retail Core		Ha		Ha	1.74	Developable area (Ha)	0.19	Developable area (Ha)	10	100m2 site area	10	100m2 site area	0.3	100 m2GFA
Lots that can accommodate 1-2 storeys	30	Ha	30.26	Ha										

	Planned Infrastructure Demand Factors													
Planning Scheme Zone	**Water Supply**		**Sewerage**		**Stormwater Quality**		**Stormwater Quantity**		**Trunk Roads**		**Pathways**		**Open Space**	
Lot type	**EPW**	**Assessment Unit**	**EPS**	**Assessment Unit**	**CF_{QAL}**	**Assessment Unit**	**CF_{QTY}**	**Assessment Unit**	**CTE**	**Assessment Unit**	**CTE**	**Assessment Unit**	**EP**	**Assessment Unit**
Lots that can accommodate up to 3 storeys	130	Ha	131.14	Ha										
Lots that can accommodate up to 6 storeys	190	Ha	191.66	Ha										
Lots that can accommodate up to 8 storeys	240	Ha	242.1	Ha										
Lots that can accommodate up to 12 storeys	290	Ha	292.53	Ha										

1.3 Planning Assumptions

1.3.1 SCOPE AND PURPOSE

The planning assumptions outline the projections of residential and non-residential development for the PIP area and also detail the projections of demand for each trunk infrastructure network. Those assumptions are used as the logical and consistent basis for the planning of those networks.

1.3.2 METHODOLOGY

1) Population and employment

Projections of population and employment growth expected to occur within the PIP area for each planning horizon year up to the year 2026 have been based on:-

A) 2006 medium series projection of estimated resident population (ERP) provided by the Planning and Information Forecasting Unit (PIFU) of the State Department of Infrastructure and Planning and Council's own development approvals data; and

B) forecasts of employment growth based on Council's own employment scenarios, the extent of business and industrial zoned land, as well as assumed plot ratios and employment density factors.

2) Dwellings and non-residential floor space

The distribution and timing of future development (residential dwelling and non-residential floor space) to accommodate projected population and employment growth have been estimated taking into account the following factors:-

A) Existing level of development as at 1 July 2010;

B) Development restricting physical constraints associated with the land;

C) Land use planning provisions of this planning scheme and other relevant planning instruments;

D) Current development applications and approvals;

E) Development trends;

F) Relative cost of providing infrastructure;

G) Average occupancy rate projections; and

H) Average floor space conversion rates.

Further details concerning the planning assumptions can be obtained from the material referenced in Part 2 of this Volume (Priority Infrastructure Plan Extrinsic Material).

1.3.3 PARAMETERS

1) Geographical areas

The planning assumptions for this PIP have been prepared in a manner that allows them to be aggregated into areas that reflect the different servicing patterns of the trunk infrastructure networks.

For the purposes of reporting, the planning assumptions have been categorised by statistical local area (SLA) for the whole of the PIP area. Each of these SLAs is shown on the map "Statistical Local Areas" in s 3.1 of this Volume of the planning scheme.

2) Time periods

The planning assumptions have been listed for the following time periods to align with the Australian Bureau of Statistics (ABS) census years:-

A) Mid 2010 (existing development) – mid 2011;

B) Mid 2011 – mid 2016;

C) Mid 2016 – mid 2021; and

D) Mid 2021 – mid 2026.

3) Development Categorisation

For purposes of this PIP, the planning assumptions have been stated for a range of residential land uses and typical employment categories. This means of categorisation has been chosen to reflect differences in the demand for infrastructure for the various forms of development.

Residential development has been categorised as either single detached houses or attached dwelling units to correspond to the format used by PIFU in its population projections up to the planning horizon year of 2026.

Residential development for this PIP is any of the following land uses:-

A) Accommodation unit;
B) Duplex dwelling;
C) House;
D) Multiple dwelling;
E) Relative's accommodation; and
F) Special needs housing.

Categorisation of non-residential development is by employment "use class" corresponding to the following:-

G) Commercial;
H) Retail;
I) Industry;
J) Community; and
K) Other.

1.3.4 FACTORS AFFECTING FUTURE DEVELOPMENT

1) Existing level of development

The existing level of residential and non-residential development has been estimated as at 1 July 2010 (the base date).

2) Physical constraints on the land

The land available for urban development (the developable area) is that land that is not affected in terms of development potential for urban purposes by the following constraints:-

A) Q100 flood inundation;
B) Slopes in excess of 25%; and
C) Endangered regional ecosystems or "of concern" regional ecosystems under the *Vegetation Management Act 1999 (the VMA)*.

3) Scale of future development

The planned densities of development listed in this PIP reflect the realistic intensity of future development having regard to the land use planning provisions of all applicable planning instruments, site constraints, and current development trends.

Table 1.3.1 identifies the planned default densities for each of the residential zones expressed as number of dwelling units per hectare of developable site area.

Table 1.3.2 identifies the planned densities for non-residential zones expressed as a plot ratio (ratio of the building gross floor area to the developable area of the site).

Table 1.3.1
Planned default densities for residential zones

Planning scheme identification (Zone)	Planned Density (dwelling units / hectare of developable area)
Low Density Residential	30
Mixed Residential	60
Medium Density Residential – 3 storeys	75
Medium Density Residential – 6 storeys	109
Medium Density Residential – 8 storeys	137.5
Frame Business – Residential Uses – up to 2 storeys	30
Frame Business – Residential Uses – 3 storeys	75
Frame Business – Residential Uses – 6 storeys	109
Frame Business – Residential Uses – 8 storeys	137.5
Frame Business – Residential Uses – 12 storeys	162.5
Retail Core – Residential Uses – up to 2 storeys	30
Retail Core – Residential Uses – 3 storeys	81.25
Retail Core – Residential Uses – 6 storeys	118.75
Retail Core – Residential Uses – 8 storeys	150

Note: for building heights, refer to "Building Heights Plan" in Volume 1 of this planning scheme.

Table 1.3.2
Planned densities for non-residential zones

Planning scheme identification (Zone)	Plot ratio (m^2GFA/m^2 of developable area)
Retail Core	0.75
Frame Business	0.5
Industry	0.5
Health Services	0.5
Community Purposes	0.5
All Other Non-residential Zones	*

* Rates can vary significantly for this use class and, as indicated in Table 1.3.8, negligible employment growth in non-residential floor area is anticipated outside of the commercial, retail, industry and community "use classes".

4) Occupancy rates

Tables 1.3.3 and 1.3.4 outline the average occupancy rates used to convert projections of population into dwelling unit requirements. These projections reflect the PIFU 2006 estimates.

Table 1.3.3
Average occupancy rate projections for single detached houses (source PIFU)

		Occupancy Rate by horizon year (persons / dwelling unit)				
SLA No	**SLA Name**	**2010**	**2011**	**2016**	**2021**	**2026**
6201	Clontarf	2.49	2.46	2.40	2.37	2.33
6204	Margate-Woody Point	2.20	2.17	2.12	2.08	2.05
6206	Redcliffe-Scarborough	2.36	2.33	2.28	2.24	2.21
6208	Rothwell- Kippa-Ring	2.79	2.76	2.70	2.65	2.61
Average		**2.46**	**2.43**	**2.37**	**2.34**	**2.30**

Table 1.3.4
Average occupancy rate projections for attached dwelling units (source PIFU)

		Occupancy Rate by horizon year (persons / dwelling unit)				
SLA No	**SLA Name**	**2010**	**2011**	**2016**	**2021**	**2026**
6201	Clontarf	1.39	1.40	1.46	1.50	1.53
6204	Margate-Woody Point	1.43	1.42	1.45	1.47	1.48
6206	Redcliffe-Scarborough	1.33	1.33	1.35	1.37	1.38
6208	Rothwell- Kippa-Ring	1.74	1.74	1.72	1.71	1.70
Total		**1.47**	**1.48**	**1.49**	**1.51**	**1.52**

5) Floor space conversion rates

Council's estimates of employment were allocated by employment "use class" each of which is defined in schedule 7 within Volume 1 of this planning scheme. A conversion rate from employment numbers to corresponding floor area was subsequently derived resulting in the average floor space conversion rates provided in table 1.3.5.

Table 1.3.5
Average floor space conversion rates

Employment "Use Class"	Conversion Rate (m^2/Employee)#
Commercial	25
Retail	35
Industrial	100 except for SLA 6201 where 120 is adopted
Community	35
Other	*

*Rates can vary significantly for this use class and, as indicated in Table 1.3.8, negligible employment growth in non-residential floor area is anticipated outside of the commercial, retail, industry and community "use classes".

#Conversion rate derived from Redcliffe City Council's Business and Industry Register.

1.3.5 EXISTING AND PROJECTED POPULATION

The existing population and growth projections for planning horizon years up to 2026 are shown in table 1.3.6. The numbers shown in that table have been derived from PIFU's projections for the former local government area of Redcliffe City and Council's own development approvals data.

Table 1.3.6
Existing and projected population

		Existing and projected population by horizon year				
SLA No	**SLA Name**	**2010**	**2011**	**2016**	**2021**	**2026**
6201	Clontarf	8,317	8,427	8,806	9,115	9,424
6204	Margate-Woody Point	11,316	11,466	12,096	12,640	13,184
6206	Redcliffe-Scarborough	20,425	20,696	21,834	22,816	23,798
6208	Rothwell- Kippa-Ring	15,109	15,240	15,698	16,169	16,640
Total PIA		**55,167**	**55,829**	**58,434**	**60,740**	**63,046**
Total outside PIA		**0**	**0**	**0**	**0**	**0**
Total		**55,167**	**55,829**	**58,434**	**60,740**	**63,046**

1.3.6 EXISTING AND PROJECTED DWELLING UNITS

Existing dwelling unit and growth projection data for planning horizon years up to 2026 are shown in Table 1.3.7. The numbers shown in that table have been derived from PIFU's projections for the former local government area of Redcliffe City and rely on the population figures in table 1.3.6 as well as the occupancy ratios outlined in tables 1.3.3 and 1.3.4.

Table 1.3.7
Existing and projected dwelling units

		Existing and projected dwelling units by horizon year									
		Single Detached Houses					Attached Dwelling Units				
SLA No	SLA Name	2010	2011	2016	2021	2026	2010	2011	2016	2021	2026
6201	Clontarf	2,918	3,004	3,139	3,249	3,359	553	566	591	612	633
6204	Margate-Woody Point	3,649	3,757	3,963	4,141	4,320	1,485	1,514	1,597	1,669	1,740
6206	Redcliffe-Scarborough	6,271	6,454	6,809	7,115	7,422	2,647	2,731	2,880	3,010	3,140
6208	Rothwell- Kippa-Ring	4,654	4,770	4,913	5,060	5,207	1,027	1,054	1,086	1,119	1,151
Total PIA		**17,492**	**17,985**	**18,824**	**19,565**	**20,308**	**5,712**	**5,865**	**6,154**	**6,410**	**6,664**
Total outside PIA		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total		**17,492**	**17,985**	**18,824**	**19,565**	**20,308**	**5,712**	**5,865**	**6,154**	**6,410**	**6,664**

1.3.7 EXISTING AND PROJECTED EMPLOYMENT

The existing employment numbers and growth projections for planning horizon years up to 2026 are shown in table 1.3.8. The numbers shown in that table were informed by Council's current employment data and derived from direct extrapolation from population growth rates.

Table 1.3.8
Existing and projected employment

SLA No	SLA	Employment "Use Class"	Existing and projected employment numbers by horizon year				
			2010	2011	2016	2021	2026
6201	Clontarf	Commercial	498	501	516	532	548
		Retail	423	426	439	452	465
		Industrial	2,776	2,792	2,876	2,962	3,048
		Community	248	250	257	265	273
		Other	531	534	550	567	584
6204	Margate-Woody Point	Commercial	549	552	568	585	602
		Retail	711	715	737	759	781
		Industrial	30	30	31	32	33
		Community	168	169	174	180	186
		Other	114	115	118	122	126
6206	Redcliffe-Scarborough	Commercial	2,421	2,435	2,508	2,584	2,660
		Retail	1,884	1,895	1,951	2,010	2,069
		Industrial	233	234	241	249	257
		Community	493	496	511	526	541
		Other	190	191	197	203	209
6208	Rothwell – Kippa-Ring	Commercial	1,724	1,734	1,786	1,840	1,894
		Retail	1,923	1,934	1,992	2,052	2,112
		Industrial	1,288	1,296	1,335	1,375	1,415

SLA No	SLA	Employment "Use Class"	Existing and projected employment numbers by horizon year				
			2010	2011	2016	2021	2026
		Community	739	743	765	788	811
		Other	149	150	154	159	164
	Total PIA	Commercial	5,191	5,222	5,378	5,541	5,704
		Retail	4,941	4,970	5,119	5,273	5,427
		Industrial	4,326	4,352	4,483	4,618	4,753
		Community	1,648	1,658	1,707	1,759	1,811
		Other	984	990	1,019	1,051	1,083
		Cumulative Total	17,090	17,192	17,706	18,242	18,778
	Total outside PIA	**Outside PIA**	0	0	0	0	0
	Total	**Total**	17,090	17,192	17,706	18,242	18,778

1.3.8 EXISTING AND PROJECTED NON-RESIDENTIAL FLOOR AREA

The existing non-residential floor area data and growth projections for planning horizon years up to 2026 are shown in table 1.3.9. This data is a direct correlation between the average floor space conversion rates in table 1.3.5 and the employment numbers listed in table 1.3.8.

Table 1.3.9
Existing and projected non-residential floor area

SLA No	SLA	Employment "Use Class"	Existing and projected non-residential gross floor area (in m2) by horizon year				
			2010	2011	2016	2021	2026
6201	Clontarf	Commercial	12,450	12,525	12,900	13,300	13,700
		Retail	14,819	14,910	15,365	15,820	16,275
		Industrial	277,560	279,130	287,504	296,129	304,800
		Community	8,694	8,750	8,995	9,275	9,555
		Other	*	*	*	*	*
6204	Margate-Woody Point	Commercial	13,715	13,800	14,200	14,625	15,050
		Retail	24,878	25,025	25,795	26,565	27,335
		Industrial	2,980	3,000	3,100	3,200	3,300
		Community	5,880	5,915	6,090	6,300	6,510
		Other	*	*	*	*	*
6206	Redcliffe-Scarborough	Commercial	60,520	60,875	62,700	64,600	66,500
		Retail	65,933	66,325	68,285	70,350	72,415
		Industrial	23,260	23,400	24,100	24,900	25,700
		Community	17,255	17,360	17,885	18,410	18,935
		Other	*	*	*	*	*
6208	Rothwell- Kippa-Ring	Commercial	43,095	43,350	44,650	46,000	47,350
		Retail	67,291	67,690	69,720	71,820	73,920
		Industrial	128,840	129,600	133,500	137,500	141,500
		Community	25,851	26,005	26,775	27,580	28,385
		Other	*	*	*	*	*
	Total	Commercial	129,780	130,550	134,450	138,525	142,600
		Retail	172,921	173,950	179,165	184,555	189,945
		Industrial	432,640	435,200	448,300	461,800	475,300
		Community	57,680	58,030	59,745	61,565	63,385
		Other	*	*	*	*	*
		Cumulative Total	793,021	797,730	821,660	846,445	871,230
	Total outside PIA	**Outside PIA**	0	0	0	0	0
	Total	**Total**	793,021	797,730	821,660	846,445	871,230

*For this PIP, negligible growth in floor area for this employment "use class" is anticipated.

1.3.9 Existing and Projected Demand of the Water Supply Network

A summary of the projected demand on the water supply network expressed in "equivalent person – water supply" (EPW) is provided in table 1.3.10. For this PIP, one EPW is equivalent to the service demand from a single occupant of an average, occupied dwelling house.

Table 1.3.10

Water supply network – projected demand summary

Charge area (service catchment)	Cumulative demand in EPWs				
	2010	2011	2016	2021	2026
Margate	61,933	63,938	69,608	72384.31	75167.25
Rothwell	5,358	5,557	6,551	7570.651	8607.31
Totals	**67,291**	**69,495**	**76,159**	**79,955**	**83,775**

1.3.10 Existing and Projected Demand of the Sewerage Network

A summary of the projected demand on the sewerage network expressed in "equivalent person – sewerage" (EPS) is provided in table 1.3.11. For this PIP, one EPS is equivalent to the service demand from a single occupant of an average, occupied house.

Table 1.3.11

Sewerage network – projected demand summary

Charge area (service catchment)	Cumulative demand in EPSs				
	2010	2011	2016	2021	2026
SS1	20,725	21,423	23,563	24,817	26,080
SS2	14,463	14,865	15,911	16,308	16,702
SS3	15,902	16,366	17,632	18,194	18,754
SS4	16,789	17,448	19,719	21,335	22,971
Totals	**67,879**	**70,102**	**76,825**	**80,654**	**84,507**

1.3.11 Existing and Projected Demand of the Stormwater Network

A summary of the projected demand on the stormwater network's quantity and quality systems expressed in "equivalent contributing area" (ECA) is provided in tables 1.3.12 and 1.3.13. For this PIP, ECA is a product of the "contributing factor" (CF) applicable to the zone of the land and the area of the development site. Applicable "contributing factors" are listed in table 1.3.14.

Table 1.3.12

Stormwater Quantity network – projected demand summary

Charge area (service catchment)	Cumulative demand in ECA_{QTY}				
	2010	2011	2016	2021	2026
Bells Creek	34.79	34.86	34.93	35.01	35.08
Humpybong Creek	23.35	23.55	23.74	23.94	24.13

Charge area (service catchment)	Cumulative demand in ECA_{QTY}				
	2010	2011	2016	2021	2026
Margate Balance	15.56	15.66	15.76	15.87	15.97
Redcliffe	50.12	50.27	50.43	50.59	50.74
Rothwell Balance	42.29	45.19	48.09	50.99	53.89
Saltwater Creek	85.88	88.21	90.54	92.86	95.19
Scarborough Coastal	36.93	37.10	37.28	37.45	37.63
Woody Point Coastal	22.90	23.04	23.18	23.31	23.45
	311.82	317.88	323.95	330.02	336.08

Table 1.3.13

Stormwater Quality network – projected demand summary

Charge area (service catchment)	Cumulative demand in ECA_{QAL}				
	2010	2011	2016	2021	2026
Bells Creek	341.88	342.62	343.36	344.10	344.84
Humpybong Creek	219.50	221.28	223.06	224.83	226.61
Margate Balance	151.57	152.59	153.62	154.64	155.67
Redcliffe	487.70	489.28	490.87	492.45	494.04
Rothwell Balance	397.91	427.16	456.42	485.67	514.93
Saltwater Creek	826.41	849.33	872.25	895.17	918.08
Scarborough Coastal	361.05	362.82	364.59	366.36	368.12
Woody Point Coastal	226.23	227.56	228.89	230.22	231.55
	3,012.25	3,072.65	3,133.04	3,193.44	3,253.84

Table 1.3.14

Stormwater Quantity and Quality network – contributing factors

Land zone	Contributing factor quality (CF_{QAL}/Ha)	Contributing factor quantity (CF_{QTY}/Ha)
Community Purpose	1.32	0.19
Frame Business	1.74	0.19
Health Services	1.74	0.19
Industry	1.90	0.19
Low Density Residential	1.32	0.13
Medium Density Residential	1.63	0.19
Mixed Residential	1.52	0.15
Natural Values	0.00	0.00

Land zone	Contributing factor quality (CF_{QAL}/Ha)	Contributing factor quantity (CF_{QTY}/Ha)
Open Space and Recreation	*	*
Retail Core	1.74	0.19

*The" contributing factors" for specific land uses are to be determined by:-

1) establishing the land use corresponding to the development proposal;
2) determining the zone or zones in which that land use constitutes a "consistent" use from the "assessment criteria" tables in Part 5, Volume 1 of this planning scheme; and
3) adopting the corresponding "contributing factors" for that zone, or an average of the "contributing factors" where more than one zone could apply.

1.3.12 Existing and Projected Demand of the Transport Network

A summary of the projected demand on the transport network expressed in "chargeable trip ends" (CTE) is provided in tables 1.3.15 and 1.3.16. For this PIP, one "chargeable trip end" is the starting point or finishing point of a trip undertaken on at least one of the trunk roads (for vehicle trips) or trunk pathways (for pedestrian or cycle travel) shown on the maps in s 3.7 of this Volume of the planning scheme where that starting or finishing point is wholly within the planning scheme area.

Table 1.3.15

Trunk Roads network – projected demand summary

Charge area	Cumulative demand in CTEs				
	2010	2011	2016	2021	2026
L1	26,164	*26,297*	*26,430*	26,563	26,698
L2	35,247	*36,181*	*37,115*	38,049	39,058
L3	63,151	*62,093*	*61,036*	59,978	58,974
L4	51,955	*54,517*	*57,079*	59,642	62,583
L5	26,685	*26,749*	*26,813*	26,876	26,941
L6	7,564	*7,217*	*6,869*	6,522	6,223
L7	6,311	*6,487*	*6,663*	6,839	7,030
External	86,906	*77,937*	*68,968*	59,999	53,807
Total including external	**303,982**	***297,478***	***290,973***	**284,469**	**281,313**
Redcliffe City internal	**217,076**	***219,541***	***222,005***	**224,470**	**227,506**

Table 1.3.16

Trunk Pathways network – projected demand summary

Charge area	Cumulative demand in CTEs				
	2010	2011	2016	2021	2026
All	**303,982**	***297,478***	***290,973***	**284,469**	**281,313**

1.3.13 EXISTING AND PROJECTED DEMAND OF THE PUBLIC OPEN SPACE NETWORK

A summary of the projected demand on the public open space network expressed in "equivalent persons" (EP) is provided in table 1.3.17. For this PIP, a single EP is equivalent to the service demand from a single occupant of an average, occupied house.

Table 1.3.17

Public Open Space network – projected demand summary

Use Type for the entire PIP area	Cumulative demand in EP				
	2010	2011	2016	2021	2026
Residential	55,167	55,829	58,434	60,740	63,046
Non residential	2,379	2,393	2,465	2,539	2,614
Totals	57,546	58,222	60,899	63,279	65,660

1.4 Priority Infrastructure Area

1.4.1 PURPOSE

The priority infrastructure area (PIA) under this PIP identifies that part of the planning scheme area that is currently used for urban development and has capacity to accommodate future urban development such as residential, retail, commercial and industrial development as well as associated community and government purposes, until the planning horizon of 2026.

The primary purpose of the PIA is to encourage urban growth in areas where suitable and adequate development infrastructure exists, or where it can be provided efficiently.

1.4.2 THE PRIORITY INFRASTRUCTURE AREA

For all practical pursposes, the extent of the PIA under this PIP is the whole of the former local government area of Redcliffe City and is shown on the map "Statistical Local Areas" in s 3.1 of this Volume of the planning scheme. The PIA includes some areas where infrastructure agreements are in place. The future growth within those agreement areas will be in accordance with the terms and conditions of those infrastructure agreements, and this has been taken into account in the assessment of future infrastructure and revenue projections.

1.4.3 DEVELOPMENT OF PREMISES OUTSIDE THE PIA

As all of the former local government area of Redcliffe City, (other than some of its tidal waterways), is within the adopted PIA, there will be no development for purposes of this PIP which is outside of that PIA.

1.4.4 TRUNK INFRASTRUCTURE NETWORKS NOT PROVIDED WITHIN THE PIA

No planning commitment is made to service all premises within the PIA with all networks of trunk infrastructure. Those areas within which certain trunk infrastructure networks will not be provided are shown on the map "Locations within the PIA not serviced by the Sewerage Network" in s 3.2 of this Volume of the planning scheme.

1.5 Desired Standards of Service

1.5.1 WATER SUPPLY

For the water supply network, Council has adopted the following desired standards of service:-

1) Water supplied for human consumption complies with the National Health and Medical Research Council (NHMRC) Australian Drinking Water Guidelines for colour, turbidity and microbiology.
2) Potable water is collected, stored, treated and conveyed from source to consumers in the manner prescribed, and to the standards required, under the Water Act 2000.
3) Non-revenue water loss does not exceed industry best practice.
4) The water supply network is designed and constructed to the standards prescribed in this planning scheme and its associated planning scheme policies; i.e.; it achieves the levels for the "adopted design parameters" listed in table 1.5.1.

Table 1.5.1
Adopted Design Parameters for the Water Supply Network

Item	Description	Adopted Design Parameter
Water Demand		
1	Average Day Demand (AD)	Existing and Future Demand – 296 litres/equivalent person (water supply)/day (L/EPW/d) AD is calculated as follows: AD= (230 x 1.2) + System Losses Where: • 230 L/EPW/day is the demand target under SEQ 'permanent water conservation measures'; • 1.2 is an operational flexibility factor that provides sufficient capacity to maintain an adequate level of service in the event that an element of the trunk infrastructure fails; and • System Losses of up to 20 L/EPW/day are catered for. Note that for this PIP, one equivalent person (water supply) is equivalent to the service demand from a single occupant of an average occupied house.
Peaking Factors		
2	Mean Day Maximum Month (MDMM/AD)	1.2 x AD (355.2 L/EPW/day)
3	Maximum Day (MD/AD)	1.6 x AD (473.6 L/EPW/day)
4	Maximum Hour (MH/AD)	4.3 x AD (53.03 L/hr/EPW)
System Pressure		
5	Minimum Operating Pressure	At maximum hour demand, the minimum pressure at the water meter shall not be less than 22m of head. (In isolated high level areas, the minimum operating pressure may be reduced to 16 m above the highest elevation on any lot with the water level in the reservoir not more than 1.0 m above reservoir floor level.)
6	Maximum Operating Pressure	80m of head at the property's water meter
Fire Fighting Requirements		
7	System Pressure	12 m minimum pressure head at the hydrant/dedicated service location,

Item	Description	Adopted Design Parameter
		and minimum 6m pressure head at any location in the water supply zone during the fire event with model conditions as detailed in Items 8, 9 and 10.
8	Fire Flow	• For predominantly residential development no more than 3 storeys in height - 15 L/s simultaneous with the background demand prescribed in Item 9 for a period of 2 hours. • For predominantly commercial/industrial development or residential buildings greater than 3 storeys in height - 30 L/s simultaneous with the background demand prescribed in Item 9 for a period of 4 hours. Note that each special risk/hazard land use may require an even greater fire flow.
9	Background demand	• For predominantly Residential Area - 2/3 of MH demand • For predominantly Commercial/Industrial Area - MH demand (generally between 10 am to 4 pm)
10	Reservoir level	With the reservoir at an assumed Mid-Water Level at the commencement of the fire event, the reservoir must not empty during the event assuming a fire flow demand for the applicable context specified in item 8 with supply pumps turned off. Mid-Water Level = (Top Water Level + Floor Level) ÷ 2 (AHD).
Storage		
11	Design Condition	• Reservoirs must not empty in less than 3 consecutive days at MD demands. • During MDMM demand the reservoir shall have net positive inflow and shall be capable of continuous operation under this demand.
12	Ground Level Storage	Required Storage = [3 x (MD – MDMM)] + Fire Fighting Storage. Where: • Fire Fighting Storage = 4 hrs of MDMM demand or 0.5 ML whichever is the greater.
13	Elevated Storage	Required Storage Volume = Operating Volume + Fire Fighting Reserve Where: • Operating Volume = 6 x (MH – 1/12 MDMM) • Fire Fighting Reserve = 150 kL
Pumping Capacity		
14	Duty pump capacity to serve ground level reservoirs.	Supply MDMM demand in no more than 20 hours of operation in any 24 hour period.
15	Pumps serving elevated storage.	Pump must discharge not less than:- [(6 x MH) – Operating Volume]/(6 x 3600) Where: Operating Volume is as prescribed in item 13 above.
16	Standby Pump Capacity	Equal to the capacity of the largest duty pump
Pipeline Design		
17	Trunk Main Capacity	Sized for MDMM flows
18	Reticulation Capacity	Sized for Maximum Hour and Fire Flow
19	Friction Default Values	Hazen Williams Coefficients of Friction: • C = 100 (diameters ≤ 150 mm)

Item	Description	Adopted Design Parameter
		• C = 110 (diameters between 150 mm and 300 mm) • C = 120 (diameter ≥ 300 mm)
20	Maximum Flow Velocity	Not to exceed 2.5 m/s

1.5.2 SEWERAGE

For the sewerage network, Council has adopted the following desired standards of service:-

1) A reliable network that collects, stores and treats sewage from premises to industry best practice is provided;
2) The sewerage network is designed and constructed to the standards prescribed in:-
   A) Council's adopted standards identified in this planning scheme and its associated planning scheme policies;
   B) Water Services Association of Australia (WSAA) guidelines;
   C) Water Act 2000;
   D) all Environmental Protection Agency (EPA) licence conditions; and
   E) the adopted design parameters identified in table 1.5.2.

Table 1.5.2
Adopted Design Parameters for the Sewerage Network

Item	Description	Adopted Design Parameter
Sewage Loading		
1	Average Dry Weather Flow (ADWF).	185 litres / equivalent person (sewerage) / day (L/EPS/d). Note that for this PIP, one equivalent person (sewerage) is equivalent to the service demand from a single occupant of an average occupied house.
2	Peak Wet Weather Flow (PWWF).	6 x ADWF
3	Peak Dry Weather Flow (PDWF).	C_2 X ADWF where C_2 = Peaking factor shown on dgr no A3-99480 of the Queensland Department of Natural Resources, Mines and Energy (QDNRM&E) Guidelines
Gravity Sewer Design		
4	Flow calculation method.	Manning's Equation
5	Manning's 'n'.	0.013
6	Minimum velocity at PWWF.	0.6 m/s
7	Minimum velocity at PDWF.	0.3 m/s
8	Depth of Flow at PWWF – Existing system.	Maximum hydraulic grade level = 1.0 m below MH cover level and no spillage through overflow structures.
9	Depth of Flow at PWWF – Proposed sewers.	Full pipe capacity.
Pumping Station Design		
10	For Fixed Speed	0.9xQ

Item	Description	Adopted Design Parameter
	Pumps: Wet Well Operating Volume (kL).	N Where Q is the flow rate (L/s) of a single pump operating and N is the allowable number of pump starts (as per QDNRM&E Guidelines). The number of pump starts (N) should be not more than 10 for pumps less than 50 kW rating. For pumps greater than 50 kW rating, pumps start limits are to be in accordance with manufacturer's recommendations
11	For Variable Speed Pumps: Wet Well Operating Volume (kL).	0.9xQ N Where Q = discharge of a single pump (L/s) operating at 50 Hz N= maximum number of starts per hour recommended by the motor manufacturer.
12	Single pump capacity.	• C1 x ADWF where serving more than 1,000 EPs • 5 x ADWF where serving no more than 1,000 EPs C1 = Peaking Factor shown on dgr A3-99480 of the QDNRM&E guidelines
13	Emergency Storage.	6 hours of ADWF
14	Total Pump Station Capacity.	Not less than 5 x ADWF
Rising Main Design		
15	Flow Equation.	Hazen Williams.
16	Friction Factors.	Ks = 0.3mm
17	Minimum Velocity (on a Daily Basis).	0.75 m/s (but 1.2m/sec preferred minimum)
18	Maximum Velocity.	2.5 m/s

1.5.3 STORMWATER

For the stormwater network, Council has adopted the following desired standards of service:-

1) Stormwater flows for anticipated flood events from existing and planned future land use is collected and conveyed to a suitable point of discharge in a manner aimed at protecting life as well as preventing both unreasonable nuisance and inundation of habitable rooms;
2) The stormwater network is designed and constructed to a standard which complies with that identified in this planning scheme and its associated policies while also being in general accord with the Queensland Urban Drainage Manual (in particular, the design standards for stormwater drainage works dealt with in chapter 6 of the "Development Standards Manual" for the former Redcliffe City which forms part of Planning Scheme Policy 10 – "Works (Development Standards Manual)" are to be met);
3) Road crossing structures are designed and constructed to a standard that provides the level of flood immunity set out in chapter 6 of the "Development Standards Manual" for the former Redcliffe City which forms part of Planning Scheme Policy 10 – "Works (Development Standards Manual)";
4) Council's adopted water quality objectives as outlined in the following Catchment Management Plans and reports are met at all times:-
   A) Humpybong Creek Catchment Management Plan (CMP) - 2007 plan by Place Environmental;
   B) Saltwater Creek CMP – 2000 plan by GEO-ENG Australia Pty Ltd;
   C) Bells Creek Rehabilitation Options – 2009 report by Natural Solutions;
   D) Catchment D37 Stormwater Management Study – 1996 report by Willing and Partners;
5) The water quality system is designed and constructed in a manner aimed at ensuring that the water quality criteria set out in the documents entitled "Pine Rivers and Redcliffe Creeks Environmental Values and Water Quality Objectives" and "Moreton Bay, North Stradbroke, South Stradbroke, Moreton and Moreton Bay Islands Environmental Values and Water Quality Guidelines", published by the former Environmental Protection Agency in March 2007, are met.

1.5.4 TRANSPORT

For this PIP, the transport network comprises two separate categories, the trunk roads network and the pathways network.

1) For the trunk roads network, Council has adopted the following desired standards of service:-
   A) A functional urban road hierarchy that supports settlement patterns, commercial and economic activities, freight movement and public transport is provided; and
   B) The road network is designed and constructed to a standard that complies with the following:-
      i) Council's adopted standards identified in this planning scheme and its associated planning scheme policies;
      ii) all relevant Austroads guides;
      iii) Department of Main Roads Road Planning and Design Manual;
      iv) maximum road volume to capacity ratios identified in table 1.5.3; and
      v) maximum degree of saturation for intersections identified in table 1.5.4.

Table 1.5.3
Maximum desirable volume to capacity ratios for the road network

Road Class	Maximum desirable volume to capacity ratio
Arterial Road	90%
Sub-Arterial Road	90%
Collector Road	90%

Notes:-

1) The same desired standards of service identified in table 1.5.3 have been applied to the State controlled road network for purposes of assessing the local component of that network.

2) Capacity ratios identified in table 1.5.3 are derived / allocated in the manner prescribed in the Austroads Guide to Traffic Engineering Practice.
3) A sub-category of the road classes listed in this table is the "foreshore/tourist/CBD" class of roads shown in the transport network "plans for trunk infrastructure".

Table 1.5.4
Maximum desirable degree of saturation for road intersections

Road / Intersection Type	Maximum desirable degree of intersection saturation by road type
Signals	80%
Roundabout	80%
Give Way	80%

Notes:-

1) The same desired standards of service identified in table 1.5.4 have been applied to the State controlled road network for purposes of assessing the local component of that network.
2) Capacity ratios identified in table 1.5.4 are derived / allocated in the manner prescribed in the Austroads Guide to Traffic Engineering Practice.

2) For the pathways network, Council has adopted the following desired standards of service:-
   A) Trunk pathways are designed and constructed to a standard that provides a safe, attractive and convenient network that links residential areas to major activity nodes and public transport interchanges, thereby encouraging walking and cycling as acceptable travel alternatives; and
   B) Trunk pathways are designed and constructed to a standard that complies with Council's adopted standards identified in this planning scheme and its associated planning scheme policies.

1.5.5 PUBLIC OPEN SPACE

For the public open space network, Council has adopted the following desired standards of service:-

1) A connected and accessible network of parks, open space and land for community facilities that meets the reasonable needs of residents, visitors and employees of local businesses is provided at the rate of provision identified in table 1.5.5 and proximity standards outlined in table 1.5.6.
2) Each parcel of public open space land has an area of no less than that identified in table 1.5.7.
3) Public open space is embellished in a way that achieves the intended purpose and maximises its usability. The minimum level of embellishment sought for each park type is set out in table 1.5.8.
4) Each parcel of public open space land has a configuration, slope, road frontage attributes, orientation and a level of flood immunity which meets the standards set out in table 1.5.9.

Table 1.5.5
Rate of land provision for public open space facilities by type

Infrastructure Type	Rate of provision (Ha/1000 resident population)		
	Local	District	City
Recreation park	Local Park – 0.6 Neighbourhood Park – 0.7 Linkage park – not specified	District Park – 0.1	City Park – 0.1 Foreshore Park – 0.8
Sporting Facility	0.7	0.2	0.4

Table 1.5.6
Proximity standards for public open space facilities

Infrastructure Type	Proximity to Target Users – maximum travel distance (km)		
	Local	District	City
Recreation park	Local Park – 0.4 Neighbourhood Park – 0.7 Linkage Park – not specified	District – 1.5	City Park– 10 Foreshore Park – not specified
Sporting Facility	1	2	10

Table 1.5.7
Size of public open space facilities

Infrastructure Type	Minimum size (Ha)		
	Local	District	City
Recreation park	Local Park – 0.4 Neighbourhood Park – 0.7 Linkage Park – not specified	District Park – 4	City Park – 10 Foreshore Park – not specified
Sporting Facility	1.8	4	10

Table 1.5.8
Standard embellishments for public open space facilities

Embellishment type	Recreation Park						Sporting Facility		
	Local	Neighbourhood	District	City	Linkage	Foreshore	Local	District	City
Play Equipment	·	·	·	·		·		·	·
Softfall (mulch)	·	·				·		·	
Softfall (rubber)			·	·					·
Edging	·	·	·	·		·		·	·
Connecting pathways	·	·	·	·	·	·	·	·	·
Bikeway			·	·		·			·
Seating	·	·	·	·	·		·	·	·
Tab/Bubbler	·	·	·	·	·	·	·	·	·
Bin	·	·	·	·	·	·	·	·	·
Signage	·	·	·	·	·	·			·
Landscaping	·	·	·	·	·	·	·	·	
Shade Trees	·	·	·	·	·	·	·	·	·
Bollards	·	·	·	·	·	·	·	·	
Slip rail	·	·	·	·	·	·	·	·	
Electric BBQ		·	·	·		·			·
Shelter		·	·	·		·	·	·	
Picnic table		·	·	·	·	·		·	·

Embellishment type	Recreation Park						Sporting Facility		
	Local	Neighbourhood	District	City	Linkage	Foreshore	Local	District	City
Multi-use Court		·	·	·					
General Lighting		·	·	·		·			·
Public toilet			·	·				·	·
Irrigation			·	·			·	·	·
Feature Infrastructure									·
Feature Trees									
Hard pavement									
Dog off-leash area			·						
On-site car parking			·	·		·	·	·	·
On-site access road			·	·		·		·	·
Event space				·					
Hard courts							·	·	·
Playing fields (inc irrigation)							·	·	·
Sports field Lighting							·	·	·
Toilet/Change room						·	·	·	·
Court/Field Shelters								·	·
Maintenance compound								·	·
Beach Shower						·			
Beach Access						·			
Turf	·	·	·	·			·	·	·
Earthworks	·	·	·	·	·	·	·	·	·
Services	·	·	·	·		·	·	·	·

Table 1.5.9
Configuration, slope, road frontage, orientation and flood immunity criteria

	Recreation Park						Sporting Facility		
	Local	**Neighbourhood**	**District**	**City**	**Linkage**	**Foreshore**	**Local**	**District**	**City**
Configuration	Square / compact Average ratio (width-depth) at least 0.5 No less than 15m in width at any point	Square / compact Average ratio (width-depth) at least 0.5 No less than 30m in width at any point	Average ratio (width-depth) at least 0.75 No less than 30m in width at any point	Average ratio (width-depth) at least 0.75 No less than 30m in width at any point	For Linkage Parks along waterways, minimum width of 75m overall or 30m each side (measured from top of bank), whichever is the greater. In all other cases 30m minimum width.	Minimum width 50m at activity nodes (measured from the line of the highest astronomical tide)	Square, circular or other compact shape	Square, circular or similar compact shape	Square, circular or similar compact shape
Slope	Reasonably flat At least one area 15mx15m, < 5%	Reasonably flat At least one area 20mx20m, < 5%	Reasonably flat At least one area 25mx25m, < 5%	Reasonably flat At least one area 50mx50m, < 5%	-	Reasonably flat At least one area 25mx25m, < 5%	Contains at least one area 200m x 150m with a slope < 1:200 suitable for sporting fields	Contains several areas of 200x150m with a slope of <1:200 suitable for sporting fields	Contains several areas of 200x150m with a slope of <1:200 suitable for sporting fields
Road frontage	at least 50% of park perimeter	at least 40% of park perimeter	at least 40% of park perimeter	at least 30% of park perimeter	Sufficient for passive surveillance and maintenance access	at least 30% of park perimeter	at least 40% of park perimeter	at least 40% of park perimeter	at least 30% of park perimeter
Orientation	Private allotments address the park (where possible)	Private allotments address the park (where possible)	Private allotments address the park (where possible)	Private allotments address the park (where possible)	-	Private allotments address the park (where possible)	Able to accommodate formalised sporting activities and have minimal impact on residential amenity Long axis generally orientated north-south	Able to accommodate formalised sporting activities and have minimal impact on residential amenity Long axis generally orientated north-south	Able to accommodate formalised sporting activities and have minimal impact on residential amenity Long axis generally orientated north-south

	Recreation Park						Sporting Facility		
	Local	**Neighbourhood**	**District**	**City**	**Linkage**	**Foreshore**	**Local**	**District**	**City**
Flood immunity	At least 0.4 ha of park area above Q20	At least 0.7ha of park area above Q20	At least 4ha of park area above Q20	At least 10ha of park area above Q20	-	-	At least 1.8 ha of park area above Q20	At least 4ha of park area above Q20	At least 10ha of park area above Q20
Activity area location	At least 10m from private lots and 20m from roads	At least 10m from private lots and 20m from roads	At least 10m from private lots and 20m from roads	At least 20m from private lots and 50m from roads	At least 10m from private lots and 20m from roads	At least 10m from private lots and 20m from roads	At least 10m from private lots and 20m from roads	At least 20m from private lots and 50m from roads	At least 20m from private lots and 50m from roads

Notes:-

(1) For tables 1.5.5 to 1.5.9, recreation park covers the following sub-categories shown on the plans for trunk infrastructure:-
  (a) Local Park
  (b) Neighbourhood Park
  (c) District Park
  (d) City Park
  (e) Linkage Park
  (f) Foreshore Park

(2) For tables 1.5.5 to 1.5.9, sporting facility covers the following shown on the plans for trunk infrastructure:-
  (a) Local Sporting Facility
  (b) District Sporting Facility
  (c) City Sporting Facility

(3) Linkage Parks provide for connectivity between recreation and sport facilities as well as providing land for the construction of recreational trails and bikeways.

1.6 Plans for Trunk Infrastructure

1.6.1 PURPOSE

The plans for trunk infrastructure (PFTI) identify the existing and proposed trunk infrastructure networks intended to service the existing and anticipated development at the desired standard of service stated in this PIP, up to the planning horizon listed in table 1.6.1.

Table 1.6.1
Trunk infrastructure network planning horizons

Trunk infrastructure network	Planning horizon
Water supply	Full development of the former Redcliffe City
Sewerage	Full development of the former Redcliffe City
Stormwater (quality and quantity)	Full development of the former Redcliffe City
Transport	2026
Public open space	2026

1.6.2 TRUNK INFRASTRUCTURE NETWORKS, SYSTEMS AND ITEMS

Table 1.6.2 identifies each of the trunk infrastructure networks, systems and items covered by this PIP.

Table 1.6.2
Trunk infrastructure networks, systems and items

Network	System	Items
Water	Active Assets (mainly above ground visible assets)	Reservoirs, tanks, pumping stations, telemetry systems. (Note that all other active assets have now transferred to State control under the SEQ Water Reforms.)
	Passive Assets (underground assets)	Trunk delivery and distribution mains at least 300mm diameter as well as pipe fittings.
Sewerage	Active Assets (mainly above ground visible assets)	Treatment plants, pumping stations, telemetry systems.
	Passive Assets (underground assets)	Gravity mains at least 225mm diameter and fittings, pressure mains at least 150mm diameter and fittings, manholes.
Stormwater management	Stormwater Quality Infrastructure	(1) corridor revegetation and rehabilitation together with any necessary ancillary infrastructure and works (excluding those facilities associated with trunk infrastructure for the public open space network); and (2) land and works for stormwater treatment including bioretention systems, gross pollutant traps, trash racks, sedimentation basins, wetlands and swales.
	Stormwater Quantity Infrastructure	(1) facilities for conveyance and detention of stormwater flows including any necessary land component; (2) underground piped drainage, overland flow paths and any necessary land acquisition (excluding those facilities associated with trunk infrastructure for the transport network); and (3) crossing upgrades including bridges and culverts

Network	System	Items
		(excluding those facilities associated with trunk infrastructure for the transport network).
Transport	Local government controlled roads	Council controlled arterial roads, sub-arterial roads and collector roads (including the sub-category designated "foreshore/tourist/CBD roads").
	State controlled roads	State controlled roads
	Pathways	All routes designated as being of "regional significance".
Public open space	Parks	• Local Park • Neighbourhood Park • District Park • City Park • Linear Linkage Park • Foreshore Park
	Sporting Facilities	Sporting Facilities

1.6.3 PLANS FOR TRUNK INFRASTRUCTURE

Plans showing the location and extent of existing trunk infrastructure as well as anticipated future trunk infrastructure for each infrastructure network are shown on the following maps:-

1) Water Supply – "Trunk Water Supply Network" located in s 3.3 of this Volume of the planning scheme.
2) Sewerage – "Trunk Sewerage Network" located in s 3.4 of this Volume of the planning scheme.
3) Stormwater – "Stormwater Network" located in s 3.5 of this Volume of the planning scheme.
4) Transport – "Transport Network" and "Transport Network Pathways" located in s 3.6 of this Volume of the planning scheme.
5) Public open space – "Public Open Space and Community Purposes Network" located in s 3.7 of this Volume of the planning scheme.

Further details concerning the plans for trunk infrastructure are provided in the documents referenced in Part 2 of this Volume (Priority infrastructure plan extrinsic material).

Statements of Intent for all State controlled road links are available from the Department of Transport & Main Roads[2].

1.6.4 SCHEDULE OF LAND/WORKS

Tables 1.6.3 to 1.6.8 provide a summary of the proposed trunk infrastructure which will be required to service anticipated growth up until the planning horizons identified in table 1.6.1.

Table 1.6.3
Schedule of proposed land / works —Water supply network

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Estimated Construction Cost ($) at 01.07.10)
Pumping Stations			
RPIPWS0001	Emergency Power Supply for Rothwell Pumps	2010	$150,000.00

[2] As 1 July 2010, the Department had copies of these statements at its Regional Offices at 5 James Street Caboolture Qld 4510 phone (07) 5316 0202 and 183 Wharf Street Spring Hill Qld 4000 phone (07) 3137 8344

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Estimated Construction Cost ($) at 01.07.10)
RPIPWS0002	Petrie Main Booster pumps upgrade	2010	$20,000.00
MAINS			
RPIPWS0003	Remaining work on Cathodic protection of Petrie main	2010	$50,000.00
RPIPWS0004	Upgrade of Nathan Road Main up to Newport development connection(225mm pipe 700m and two section valves)	2010	$500,000.00
Total			**$720,000.00**

Table 1.6.4
Schedule of proposed land / works —Sewerage network

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Infrastructure Level	Estimated Construction Cost ($) (at 01.07.10)
PUMPING STATIONS -				
PIPS00001	SPS 19X Hercules road (Renewal of existing pumps as interim solution)	2010	Local	$220,000
PIPS00002	SPS 19X Hercules road (Design of upgrade to cater for Newport Development)	2010	Local	$30,000
PIPS00003	SPS 19X Hercules road (Upgrading to cater for Newport Development)	2010	Local	$1,000,000
PIPS00004	SPS 16X, Grice street Decommission	2010	Local	$20,000
PIPS00005	Duplication of pumps(3x2.1 Kw,9Kw,2x4.5Kw)	2010	Regional	$125,000
PIPS00006	SPS23 & 23A, McGahy St West Decommissioning	2010	Local	$10,000
PIPS00015	Hercules road New PS for Newport(43L/s, 3255EP)	2011	Local	$1,100,000
PIPS00009	SPS 5 - Humpybong Creek	2010	Local	$20,000
PIPS00010	SPS 21 - Nathan Road	2010	Local	$62,500
PIPS00011	SPS9 Whitecliffe Parade-Renewal of pumps, Converting PS to submersible type and add emergency storage	2011	Local	$625,000
PIPS00012	SPS 2 X Landsborough Avenue	2010	Local	$250,000
GRAVITY SEWERS/PRESSURE MAINS				
PIPS00013	Rising mains replacement/upgrades	2018	Regional	$2,650,000
PIPS00014	Hercules road (Newport main 250mmx330m)	2010	Local	$100,000
Totals				**$6,212,500**

Table 1.6.5: Schedule of proposed land / works —Stormwater network

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Quality/ Quantity Infrastructure	Estimated Construction Cost ($) (at 01.07.10)
BEL_BIO_1	Bells Creek Bioretention Basin	2010	Quality	$627,820
HUM_BIO_1	Humpybong Creek Bioretention Basin	2011	Quality	$1,087,835

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Quality/ Quantity Infrastructure	Estimated Construction Cost ($) (at 01.07.10)
HUM_BIO_2	Humpybong Creek Bioretention Basin	2012	Quality	$194,797
HUM_BIO_3	Humpybong Creek Bioretention Basin	2014	Quality	$225,715
HUM_BIO_4	Humpybong Creek Bioretention Basin	2015	Quality	$121,628
HUM_BIO_5	Humpybong Creek Bioretention Basin	2013	Quality	$596,347
HUM_BIO_6	Humpybong Creek Bioretention Basin	2016	Quality	$174,701
BEL_SW_1	Bells Creek Bioswale	2011	Quality	$133,506
BEL_GPT_1	Bells Creek GPT	2017	Quality	$49,356
BEL_GPT_2	Bells Creek GPT	2012	Quality	$38,466
BEL_GPT_3	Bells Creek GPT	2012	Quality	$155,152
BEL_GPT_4	Bells Creek GPT	2018	Quality	$47,572
BEL_GPT_5	Bells Creek GPT	2019	Quality	$26,581
BEL_GPT_6	Bells Creek GPT	2020	Quality	$61,804
HUM_GPT_1	Humpybong Creek GPT	2019	Quality	$62,332
HUM_GPT_2	Humpybong Creek GPT	2020	Quality	$33,147
HUM_GPT_3	Humpybong Creek GPT	2021	Quality	$31,243
HUM_GPT_4	Humpybong Creek GPT	2010	Quality	$536,400
HUM_GPT_5	Humpybong Creek GPT	2012	Quality	$515,651
HUM_GPT_6	Humpybong Creek GPT	2013	Quality	$361,937
HUM_GPT_7	Humpybong Creek GPT	2017	Quality	$71,316
HUM_GPT_8	Humpybong Creek GPT	2018	Quality	$458,098
HUM_GPT_9	Humpybong Creek GPT	2019	Quality	$449,151
MGT_GPT_1	Margate Balance GPT	2015	Quality	$486,024
MGT_GPT_2	Margate Balance GPT	2013	Quality	$505,580
MGT_GPT_3	Margate Balance GPT	2013	Quality	$505,580
MGT_GPT_4	Margate Balance GPT	2016	Quality	$341,141
MGT_GPT_5	Margate Balance GPT	2017	Quality	$467,224
MGT_GPT_6	Margate Balance GPT	2018	Quality	$33,148
MGT_GPT_7	Margate Balance GPT	2019	Quality	$137,655
MGT_GPT_8	Margate Balance GPT	2020	Quality	$137,922
RED_GPT_1	Redcliffe GPT	2011	Quality	$57,695
RED_GPT_10	Redcliffe GPT	2018	Quality	$85,767
RED_GPT_11	Redcliffe GPT	2018	Quality	$85,767
RED_GPT_12	Redcliffe GPT	2018	Quality	$35,544
RED_GPT_13	Redcliffe GPT	2018	Quality	$66,080
RED_GPT_14	Redcliffe GPT	2018	Quality	$75,781
RED_GPT_15	Redcliffe GPT	2017	Quality	$77,290
RED_GPT_2	Redcliffe GPT	2011	Quality	$57,695
RED_GPT_3	Redcliffe GPT	2012	Quality	$56,568

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Quality/ Quantity Infrastructure	Estimated Construction Cost ($) (at 01.07.10)
RED_GPT_4	Redcliffe GPT	2012	Quality	$74,382
RED_GPT_5	Redcliffe GPT	2013	Quality	$39,228
RED_GPT_6	Redcliffe GPT	2013	Quality	$83,635
RED_GPT_7	Redcliffe GPT	2013	Quality	$83,635
RED_GPT_8	Redcliffe GPT	2016	Quality	$78,830
RED_GPT_9	Redcliffe GPT	2016	Quality	$89,218
ROT_GPT_1	Rothwell Balance GPT	2016	Quality	$48,740
ROT_GPT_2	Rothwell Balance GPT	2016	Quality	$66,078
ROT_GPT_3	Rothwell Balance GPT	2017	Quality	$108,125
ROT_GPT_4	Rothwell Balance GPT	2017	Quality	$34,070
ROT_GPT_5	Rothwell Balance GPT	2018	Quality	$46,086
ROT_GPT_6	Rothwell Balance GPT	2020	Quality	$44,550
ROT_GPT_7	Rothwell Balance GPT	2021	Quality	$43,680
ROT_GPT_8	Rothwell Balance GPT	2021	Quality	$44,163
SAL_GPT_24	Saltwater Creek GPT	2013	Quality	$505,580
SAL_GPT_25	Saltwater Creek GPT	2018	Quality	$133,202
SAL_GPT_26	Saltwater Creek GPT	2016	Quality	$476,531
SAL_GPT_27	Saltwater Creek GPT	2012	Quality	$515,651
SAL_GPT_28	Saltwater Creek GPT	2018	Quality	$458,098
SAL_GPT_29	Saltwater Creek GPT	2017	Quality	$100,113
SAL_GPT_30	Saltwater Creek GPT	2010	Quality	$536,400
SAL_GPT_31	Saltwater Creek GPT	2011	Quality	$139,717
SAL_GPT_32	Saltwater Creek GPT	2012	Quality	$515,651
SAL_GPT_33	Saltwater Creek GPT	2018	Quality	$133,202
SAL_GPT_34	Saltwater Creek GPT	2019	Quality	$449,151
SAL_GPT_35	Saltwater Creek GPT	2012	Quality	$110,490
SAL_GPT_36	Saltwater Creek GPT	2020	Quality	$59,834
SAL_GPT_37	Saltwater Creek GPT	2020	Quality	$45,338
SAL_GPT_38	Saltwater Creek GPT	2021	Quality	$100,598
SAL_GPT_39	Saltwater Creek GPT	2021	Quality	$101,081
SAL_GPT_40	Saltwater Creek GPT	2011	Quality	$139,717
SCA_GPT_1	Scarborough Coastal GPT	2012	Quality	$119,332
SCA_GPT_10	Scarborough Coastal GPT	2012	Quality	$38,120
SCA_GPT_11	Scarborough Coastal GPT	2012	Quality	$42,504
SCA_GPT_12	Scarborough Coastal GPT	2012	Quality	$43,369
SCA_GPT_13	Scarborough Coastal GPT	2012	Quality	$76,117
SCA_GPT_14	Scarborough Coastal GPT	2013	Quality	$70,389
SCA_GPT_15	Scarborough Coastal GPT	2013	Quality	$150,990

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Quality/ Quantity Infrastructure	Estimated Construction Cost ($) (at 01.07.10)
SCA_GPT_2	Scarborough Coastal GPT	2013	Quality	$115,814
SCA_GPT_3	Scarborough Coastal GPT	2013	Quality	$50,863
SCA_GPT_4	Scarborough Coastal GPT	2013	Quality	$50,863
SCA_GPT_5	Scarborough Coastal GPT	2019	Quality	$44,935
SCA_GPT_6	Scarborough Coastal GPT	2019	Quality	$44,935
SCA_GPT_7	Scarborough Coastal GPT	2019	Quality	$117,559
SCA_GPT_8	Scarborough Coastal GPT	2019	Quality	$102,636
SCA_GPT_9	Scarborough Coastal GPT	2019	Quality	$75,595
WPT_GPT_1	Woody Point GPT	2020	Quality	$103,094
WPT_GPT_2	Woody Point GPT	2020	Quality	$45,043
WPT_GPT_3	Woody Point GPT	2020	Quality	$32,555
WPT_GPT_4	Woody Point GPT	2020	Quality	$31,373
WPT_GPT_5	Woody Point GPT	2021	Quality	$98,183
WPT_GPT_6	Woody Point GPT	2021	Quality	$31,243
WPT_GPT_7	Woody Point GPT	2021	Quality	$44,646
MGT_PD_1	Margate Balance Pipe Drainage	2014	Quantity	$16,698,659
MGT_PD_2	Margate Balance Pipe Drainage	2015	Quantity	$9,308,604
BEL_REV_1	Bells Creek Revegetation	2011	Quality	$62,240
BEL_REV_2	Bells Creek Revegetation	2011	Quality	$62,240
RED_TR_1	Redcliffe Trash Rack	2013	Quality	$746
RED_TR_2	Redcliffe Trash Rack	2020	Quality	$649
RED_TR_3	Redcliffe Trash Rack	2020	Quality	$649
RED_TR_4	Redcliffe Trash Rack	2021	Quality	$637
BEL_WET_1	Bells Creek Wetland	2010	Quality	$203,662
SAL_WET_19	Saltwater Creek Wetland	2013	Quality	$777,598
SAL_WET_20	Saltwater Creek Wetland	2018	Quality	$657,598
SAL_WET_21	Saltwater Creek Wetland	2016	Quality	$1,139,357
SAL_WET_22	Saltwater Creek Wetland	2018	Quality	$610,627
SAL_WET_23	Saltwater Creek Wetland	2017	Quality	$1,820,466
SAL_WET_24	Saltwater Creek Wetland	2010	Quality	$715,000
SAL_WET_25	Saltwater Creek Wetland	2011	Quality	$2,282,041
SAL_WET_26	Saltwater Creek Wetland	2016	Quality	$1,054,960
SAL_WET_27	Saltwater Creek Wetland	2018	Quality	$140,914
SAL_WET_28	Saltwater Creek Wetland	2019	Quality	$690,809
SAL_WET_29	Saltwater Creek Wetland	2017	Quality	$622,791
TOTAL				**$53,058,201**

Table 1.6.6
Schedule of proposed land / works — Transport network

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Category (Intersection / Road / Pathway)	Construction Cost ($) (01.07.10)
RPIPRD0003	Buchanan Rd extension Bremner rd to Gynther Rd	2018	Road	$2,650,000
RPIPRD0012	Klingner Rd/Broadman Rd Intersection	2010	Intersection	$1,185,000
RPIPRD0013	Klingner Rd/Prince Edward Pde	2011	Intersection	$1,185,000
RPIPRD0014	Grifith Road/Newport Dr	2011	Intersection	$1,185,000
RPIPRD0015	MacDonnell Rd/Victoria Av Roundabout	2012	Intersection	$300,000
RPIPRD0016	Klinger Rd/Scarborough Rd Roundabout	2013	Intersection	$300,000
RPIPRD0017	Duffield Rd/Victoria Av	2013	Intersection	$1,185,000
RPIPRD0018	Duffield Rd/Maine Rd Roundabout	2014	Intersection	$300,000
RPIPRD0019	Victoria Av/King St	2014	Intersection	$1,185,000
RPIPRD0020	Klingner Rd/Ashmole Rd Roundabout	2015	Intersection	$300,000
RPIPRD0021	Morris Rd/Cambridge St	2015	Intersection	$300,000
RPIPRD0022	Hercules Rd northern connection to Anzac Av	2016	Road	$1,185,000
RPIPSP0200	Klingner Road	2024	Pathway	$1,013,265
RPIPSP0201	Klingner Road	2023	Pathway	$1,013,265
RPIPSP0202	Oxley Avenue	2013	Pathway	$825,413
RPIPSP0203	Scarborough Road	2010	Pathway	$1,423,125
RPIPSP0204	Griffith Road	2016	Pathway	$1,707,750
RPIPSP0205	Boardman Road	2011	Pathway	$711,563
RPIPSP0206	Ashmole Road	2019	Pathway	$455,400
RPIPSP0207	Recreation Street	2011	Pathway	$307,395
RPIPSP0208	Victoria Avenue	2012	Pathway	$1,707,750
RPIPSP0209	Macdonnell Road	2020	Pathway	$1,565,438
RPIPSP0210	Duffield Road	2022	Pathway	$1,565,438
RPIPSP0211	Maine Road	2017	Pathway	$1,366,200
RPIPSP0212	King Street	2021	Pathway	$384,244
RPIPSP0213	Duffield Road	2026	Pathway	$142,313
RPIPSP0214	Macdonnell Road	2013	Pathway	$118,119
RPIPSP0215	Elizabeth Avenue	2021	Pathway	$128,081
RPIPSP0216	Bell Street	2012	Pathway	$106,734
RPIPSP0217	Cornelius Street	2014	Pathway	$106,734
RPIPSP0218	Georgina Street	2014	Pathway	$177,891
RPIPSP0219	Lilla Street	2026	Pathway	$32,732
RPIPSP0220	Earnest Street	2021	Pathway	$135,197
RPIPSP0221	Kate Street	2019	Pathway	$89,657
RPIPSP0222	Dover Road	2011	Pathway	$116,696

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Category (Intersection / Road / Pathway)	Construction Cost ($) (01.07.10)
RPIPSP0223	Balmoral Street	2014	Pathway	$49,809
RPIPSP0224	Magnolia Street	2019	Pathway	$68,310
RPIPSP0225	Kirkwood Street	2019	Pathway	$56,925
RPIPSP0226	Trilby Street	2018	Pathway	$86,811
RPIPSP0227	Plume Street	2015	Pathway	$106,734
RPIPSP0228	Porter Street	2025	Pathway	$106,734
RPIPSP0229	Portwood Street	2006	Pathway	$46,109
RPIPSP0230	Shields Street	2011	Pathway	$65,464
RPIPSP0231	Eversleigh Road	2010	Pathway	$170,775
RPIPSP0232	Ashmole Road	2009	Pathway	$130,643
RPIPSP0233	George Street	2007	Pathway	$109,979
RPIPSP0234	Oxley Avenue	2014	Pathway	$199,238
RPIPSP0235	Donkin Street	2019	Pathway	$56,925
RPIPSP0236	Sunnyside Road	2019	Pathway	$142,313
RPIPSP0237	Michel Road	2025	Pathway	$95,349
RPIPSP0238	Jeays Street	2019	Pathway	$75,426
RPIPSP0239	Scarborough Road	2025	Pathway	$152,274
RPIPSP0240	Rock Street	2026	Pathway	$59,771
RPIPSP0241	Miller Street	2025	Pathway	$126,658
RPIPSP0242	Cascade Street	2019	Pathway	$75,426
RPIPSP0243	Ballina Street	2015	Pathway	$44,117
RPIPSP0244	Hercules Road	2026	Pathway	$213,469
RPIPSP0245	Euston Street	2011	Pathway	$54,079
RPIPSP0246	Nottingham Street	2013	Pathway	$78,272
RPIPSP0247	Regency Street	2025	Pathway	$48,386
RPIPSP0248	Chelsea Street	2021	Pathway	$76,849
RPIPSP0249	Nathan Road	2008	Pathway	$19,127
RPIPSP0250	Morris Road	2014	Pathway	$263,278
RPIPSP0251	Cambridge St	2010	Pathway	$119,059
RPIPSP0252	Kelliher Streeet	2015	Pathway	$58,348
RPIPSP0253	Drysdale Street	2015	Pathway	$71,156
RPIPSP0254	Dobell Street	2015	Pathway	$68,310
RPIPSP0255	Gynther Road	2013	Pathway	$61,194
RPIPSP0256	Wattle Road	2008	Pathway	$29,373
Totals				**$29,647,088**

Table 1.6.7
Schedule of proposed land / works — State controlled road network

Project ID	Trunk Infrastructure Item	Estimated Construction Completion Date	Category (Intersection / Road)	Estimated Construction Cost ($) (at 01.07.10)
RPIPLF0001	Anzac Avenue (Elizabeth Street to Marine Pde)	2017	Road	$4,788,925
RPIPLF0002	Deception Bay Road (Anzac Avenue to former Redcliffe City Boundary)	2011	Road	$1,262,716
RPIPLF0003	Anzac Avenue (Elizabeth Avenue to Klingner Road)	2011	Road	$8,530,951
Totals				**$14,582,592**

Note: "Statements of Intent for all State controlled road links are available from the Department of Transport & Main Roads. At at 1 July 2010, the Department had copies of these statements at its Regional Offices at 5 James Street Caboolture Qld 4510 phone 5316 0202 and 183 Wharf Street Spring Hill Qld 4000 phone 3137 8344"

Table 1.6.8
Schedule of proposed land / works — Public open space network

Project ID	Trunk Infrastructure Item	Estimated Completion Date	Infrastructure Type	Estimated Construction Cost ($) (at 01.07.10)
RPIPPK00001	A.J. (Jock) Kelly Park	2015	Local Sporting Facility	$338,093
RPIPPK00029	Amity Park	2015	Neighbourhood Park	$120,307
RPIPPK00031	Apex Park	2019	Neighbourhood Park	$94,200
RPIPPK00032	Atkinson Park	2020	Neighbourhood Park	$174,403
RPIPPK00060	Atlanta Court Park	2013	Local Park	$325,565
RPIPPK00033	Barry Bolton Park	2018	District Park	$4,330,175
RPIPPK00081	Beacon Park	2025	Local Park	$731,744
RPIPPK00034	Bellevue Park	2021	Neighbourhood Park	$1,383,089
RPIPPK00035	Bells Beach Park	2020	Foreshore Park	$505,226
RPIPPK00095	Bell's Paddock Recreation & Caravan Park	2020	Linkage Park	$428,859
RPIPPK00083	Bertie Dow Park	2013	Local Park	$231,275
RPIPPK00016	Bicentennial Park	2015	Foreshore Park	$152,202
RPIPPK00036	Bill Rogers Park	2019	Neighbourhood Park	$491,810
RPIPPK00086	Boama Park	2026	Linkage Park	$449,599
RPIPPK00003	Bradley Park	2014	Local Sporting Facility	$593,348
RPIPPK00038	Carrick Park	2019	Local Park	$57,605
RPIPPK00039	Charlish Park	2020	Foreshore Park	$830,709
RPIPPK00090	Clontarf Beach Park	2019	Foreshore Park	$1,269,699
RPIPPK00092	Cooper Park	2014	Local Park	$5,630
RPIPPK00093	Corscadden Park	2018	Neighbourhood Park	$167,127
RPIPPK00017	Crockatt Park	2022	Foreshore Park	$5,335,129
RPIPPK00004	Dalton Park	2015	Local Sporting Facility	$1,228,217

Project ID	Trunk Infrastructure Item	Estimated Completion Date	Infrastructure Type	Estimated Construction Cost ($) (at 01.07.10)
RPIPPK00096	Daphne Carpenter Park	2018	Local Park	$743,458
RPIPPK00040	Dobell Park	2018	Neighbourhood Park	$110,726
RPIPPK00097	Donkin Street Park	2018	Local Park	$187,142
RPIPPK00030	Duffield Road Park 2	2015	Local Park	$250,235
RPIPPK00041	Endeavour Park	2023	Foreshore Park	$10,236,954
RPIPPK00005	Filmer Park	2019	Local Sporting Facility	$311,912
RPIPPK00042	Gayundah Arboretum Park	2015	Foreshore Park	$799,704
RPIPPK00082	Grant Park	2021	Local Park	$306,869
RPIPPK00043	Greg Enright Park	2026	Local Park	$120,145
RPIPPK00080	Griffith Road Park	2018	Neighbourhood Park	$370,907
RPIPPK00077	Halamka Park	2026	Neighbourhood Park	$85,121
RPIPPK00079	Ham Street Park	2025	Local Park	$368,879
RPIPPK00089	Hawk Canal Park	2012	Linkage Park	$8,306
RPIPPK00044	Henry Pieper Park	2023	Neighbourhood Park	$460,579
RPIPPK00045	Humpybong Park	2020	Linkage Park	$22,395
RPIPPK00111	Intrepid Park	2014	Local Park	$26,815
RPIPPK00112	Jabiru Canal Park	2011	Linkage Park	$4,053
RPIPPK00047	Jamieson Park	2026	Neighbourhood Park	$1,002,627
RPIPPK00114	Jim Mcgahey Park	2021	Local Park	$1,298,680
RPIPPK00115	John Oxley Park	2012	Local Park	$100,365
RPIPPK00008	K.r. Benson Park	2013	Local Sporting Facility	$1,002,777
RPIPPK00048	Kalowen Park	2020	Local Park	$145,887
RPIPPK00049	Kirami Park	2022	Neighbourhood Park	$284,973
RPIPPK00117	Kirkwood Square	2025	Local Park	$66,369
RPIPPK00099	Kite Canal Park	2010	Linkage Park	$6,805
RPIPPK00050	Kroll Gardens	2015	Local Park	$267,553
RPIPPK00051	Lahore Park	2025	Neighbourhood Park	$1,698,785
RPIPPK00052	Lancaster Park	2015	Local Park	$128,461
RPIPPK00009	Langdon Park	2013	Local Sporting Facility	$333,461
RPIPPK00053	Langtree Park	2020	Local Park	$473,494
RPIPPK00118	Leslie Slaughter Park	2014	Local Park	$37,748
RPIPPK00061	Lionheart Crescent Park	2026	Linkage Park	$49,482
RPIPPK00120	Macfarlane Park	2026	Local Park	$594,967
RPIPPK00121	Mackenzie Park	2026	Local Park	$62,766
RPIPPK00122	Madeleine Court Park	2026	Local Park	$35,473
RPIPPK00123	Magnolia Park	2018	Linkage Park	$54,066
RPIPPK00124	Mahogany Park	2021	Local Park	$124,785

Project ID	Trunk Infrastructure Item	Estimated Completion Date	Infrastructure Type	Estimated Construction Cost ($) (at 01.07.10)
RPIPPK00019	Margate Beach Park	2026	Foreshore Park	$2,508,526
RPIPPK00125	Marsala Park	2019	Local Park	$65,998
RPIPPK00091	Marsala Street Park	2018	Linkage Park	$12,155
RPIPPK00037	McDonnell Road Park	2017	Local Park	$93,848
RPIPPK00055	McKillop Park	2015	Neighbourhood Park	$287,422
RPIPPK00054	Mj Brown Park	2016	Linkage Park	$86,836
RPIPPK00056	Morgan Park	2021	Neighbourhood Park	$1,286,442
RPIPPK00101	Morris Road	2021	District Sporting Facility	$18,798,149
RPIPPK00057	Mungara Park	2021	Local Park	$491,308
RPIPPK00006	Newport Park	2026	Local Park	$88,700
RPIPPK00059	Owens Park	2021	Local Park	$641,404
RPIPPK00100	Oxley Avenue Park	2019	Local Sporting Facility	$118,137
RPIPPK00131	Paradise Park	2018	Local Park	$71,077
RPIPPK00132	Parsons Park	2019	Neighbourhood Park	$873,978
RPIPPK00133	Pask Park	2014	Local Park	$22,592
RPIPPK00011	Pearson Park	2013	Neighbourhood Park	$1,230,935
RPIPPK00020	Pelican Park	2016	Foreshore Park	$1,909,141
RPIPPK00062	Peter Morris Park	2017	District Park	$388,910
RPIPPK00063	Pikett Street Park	2020	Local Park	$239,958
RPIPPK00136	Plume Street Park	2025	Linkage Park	$61,573
RPIPPK00098	Portwood Street Park	2021	District Sporting Facility	$1,930,557
RPIPPK00064	Queens Beach Park	2021	Foreshore Park	$4,807,464
RPIPPK00012	Ray Frawley Fields	2013	Local Sporting Facility	$424,284
RPIPPK00065	Redcliffe Botanic Gardens Wallum	2026	City Park	$2,646,762
RPIPPK00021	Redcliffe Foreshore	2016	Foreshore Park	$103,460
RPIPPK00084	Redcliffe Peninsula Lions Memorial	2017	Local Park	$48,389
RPIPPK00013	Redcliffe Showgrounds	2015	Local Sporting Facility	$4,928,808
RPIPPK00010	Regency Park	2026	Linkage Park	$249,215
RPIPPK00067	Robert Dalton Park	2013	Local Park	$69,688
RPIPPK00068	Roma Street Park	2011	Neighbourhood Park	$406,262
RPIPPK00014	Rothwell Park	2015	Local Sporting Facility	$1,137,910
RPIPPK00069	Sandpiper Canal Park	2014	Local Park	$6,728
RPIPPK00022	Scarborough Beach Park	2014	Foreshore Park	$6,457,997
RPIPPK00070	Scotts Point Progress Park	2023	Foreshore Park	$1,078,877
RPIPPK00071	Seacrest Park	2016	Linkage Park	$141,469
RPIPPK00023	Settlement Cove Park	2020	Foreshore Park	$4,173,436
RPIPPK00072	Southern Cross Park	2014	Local Park	$251,357

Project ID	Trunk Infrastructure Item	Estimated Completion Date	Infrastructure Type	Estimated Construction Cost ($) (at 01.07.10)
RPIPPK00094	Stanley Jones Reserve	2021	Local Park	$279,885
RPIPPK00073	Sunstate Park	2020	Neighbourhood Park	$744,471
RPIPPK00024	Suttons Beach Park	2021	Foreshore Park	$5,955,976
RPIPPK00087	Sydney Street Park	2021	Linkage Park	$68,782
RPIPPK00074	Tacoma Park	2014	Neighbourhood Park	$322,418
RPIPPK00015	Talobilla Sporting Reserve	2026	City Sporting Facility	$23,255,918
RPIPPK00107	Taradale Park	2026	Neighbourhood Park	$412,543
RPIPPK00026	Teak Street Park	2026	Local Park	$233,824
RPIPPK00025	Thurecht Park	2018	Foreshore Park	$2,414,907
RPIPPK00150	Tingira Park	2012	Local Park	$39,845
RPIPPK00151	Tom Curry Park	2018	Local Park	$45,342
RPIPPK00152	Tom Wallace Park	2025	Local Park	$255,053
RPIPPK00058	Vista Court Park	2022	Linkage Park	$26,563
RPIPPK00076	Walker Park	2014	Local Park	$155,227
RPIPPK00007	Walsh Street Park	2016	Local Park	$884,808
RPIPPK00156	Wattle Park	2015	Neighbourhood Park	$697,487
RPIPPK00028	Woodland Street Park	2024	Neighbourhood Park	$478,962
RPIPPK00078	Woody Point Park	2019	Local Park	$188,667
RPIPPK00157	Yourell Park	2015	Local Park	$95,098
RPIPPK00027	Youth Park	2021	Neighbourhood Park	$323,266
			TOTAL	**$136,446,530**

Note: All Trunk Infrastructure Items for the Public Open Space network listed in the Schedule above are for embellishment works only.

Redcliffe City Planning Scheme
Volume 3 – Priority Infrastructure Plan
Part 2 – Extrinsic Material

2.1 Extrinsic Material

The documents identified in table 2.1.1 assist in the interpretation of this priority infrastructure plan, and are extrinsic material under the *Statutory Instruments Act 1992*.

Table 2.1.1

Extrinsic material to priority infrastructure plan

Trunk Infrastructure Network	Title of Document
Planning assumptions and PIP (for all networks)	• Residential and Non-residential Development Projections, Redcliffe City Council, October 2007
Water supply	• Derivation of Water Supply & Sewerage Infrastructure Charges report by MWH, May 2004 • Moreton Bay Water, Hydraulic Solution and Capital Works Program 2008/09 • Moreton Bay Water, 'Water Supply Network Master Plan", Draft, September 2008 • Redcliffe City Council Water and Sewerage Infrastructure Charges Schedule – Desired Standards of Service, MWH, May 2004 • Redcliffe ICS Study – Water Supply System Master Plan, MWH, March 2004
Sewerage	• Desired Standards of Service and Design Criteria for Water and Sewerage Infrastructure, MWH Australia Pty. Ltd., July 2003 • Redcliffe City Council Water and Sewerage Infrastructure Charges Schedule – Desired Standards of Service, MWH, May 2004 • Redcliffe ICS Study – Sewerage Collection System Master Plan, MWH Australia Pty. Ltd., March 2004 • Moreton Bay Water, Hydraulic Solution and Capital Works Program 2008/09
Stormwater	• Saltwater Creek Catchment Management Plan, Geo-Eng Australia Pty. Ltd., June 2000 • Bells Creek Rehabilitation Options, Natural Solutions, February 2009 • Humpybong Creek Catchment Management Plan, Place Environmental, February 2007 • Catchment D37 Stormwater Management Study, Willing & Partners, September 1996
Transport (including bikeways and State-Controlled roads)	• MBRC, Redcliffe Transport Network Charging Analysis, September 2009
Open space	• Background Planning Paper for the Pubic Parks and Land for Community Facilities Network, Integrated Infrastructure Planning, October 2008

Redcliffe City Planning Scheme
Volume 3 – Priority Infrastructure Plan
Part 3 – Priority Infrastructure Plan Maps

3.1 – Statistical Local Areas

3.2 – Locations within the PIA not serviced by the Sewerage Network

3.3 – Trunk Water Supply Network

3.4 – Trunk Sewerage Network

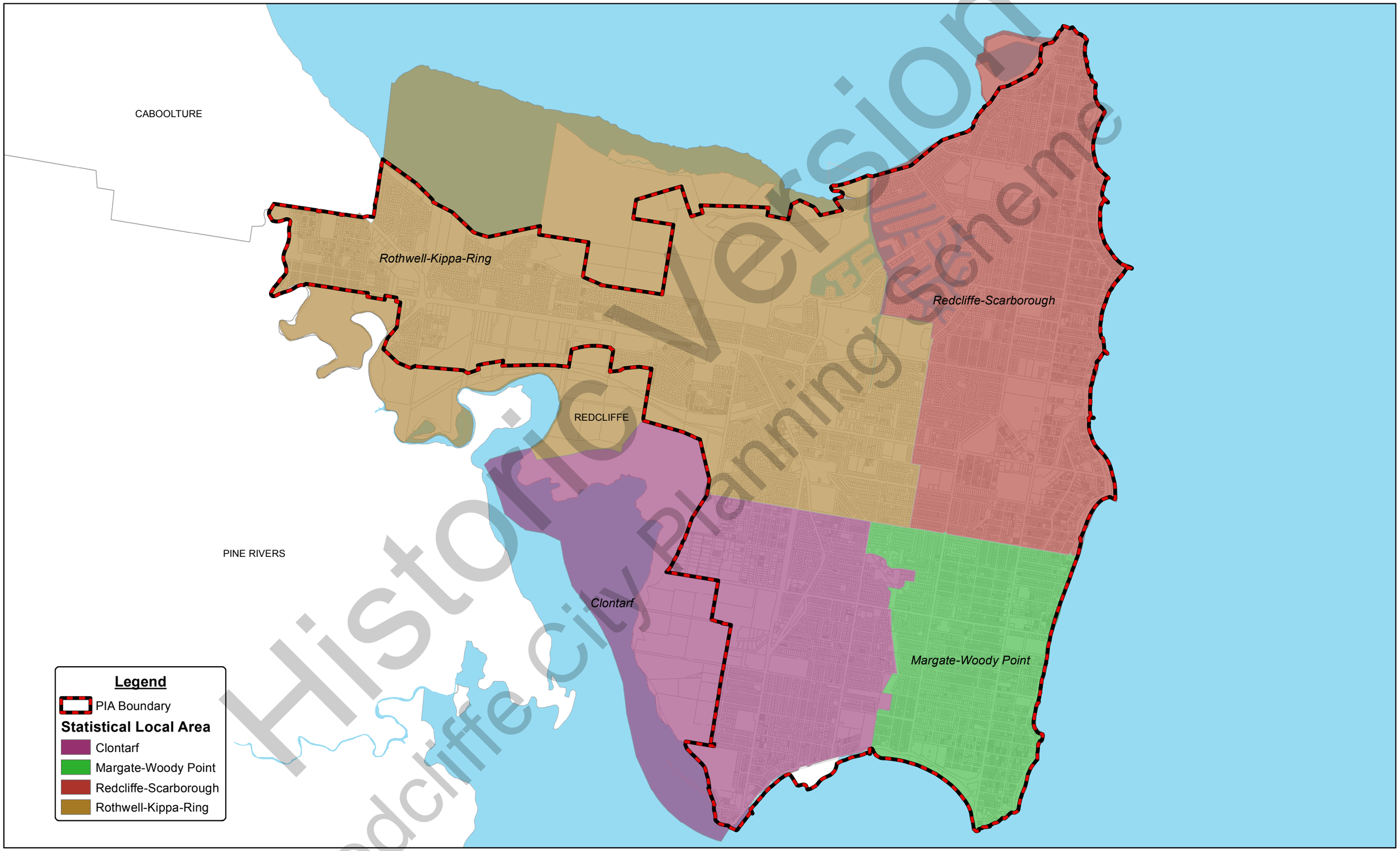
3.5 – Stormwater Network (Maps 1-3)

3.6.1 – Transport Network (Maps 1-3)

3.6.2 – Transport Network Pathways (Maps 1-3)

3.7 – Public Open Space and Community Purposes Network (Maps 1-3)

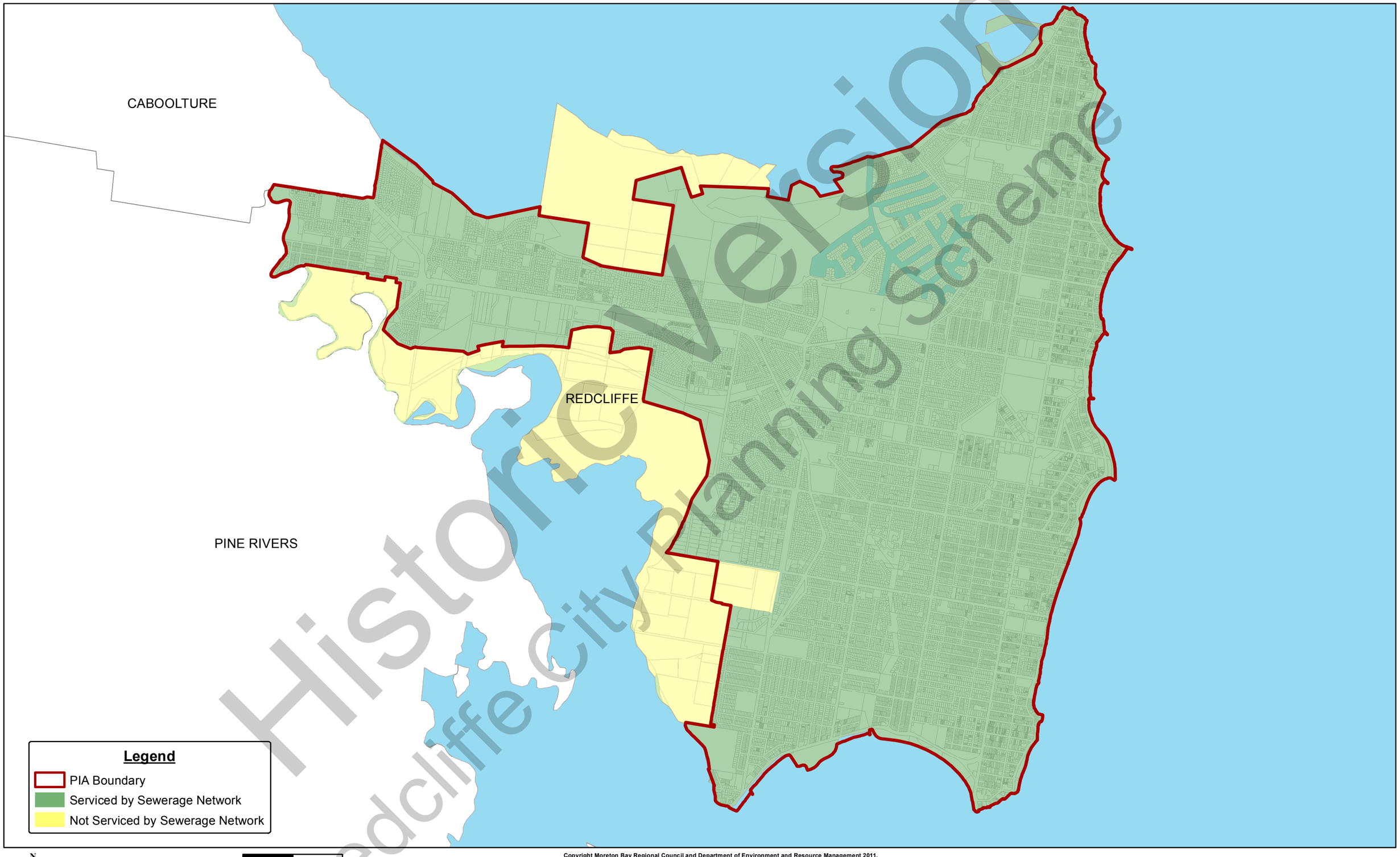
3.1 Statistical Local Areas



MORETON BAY REGIONAL COUNCIL
Redcliffe District

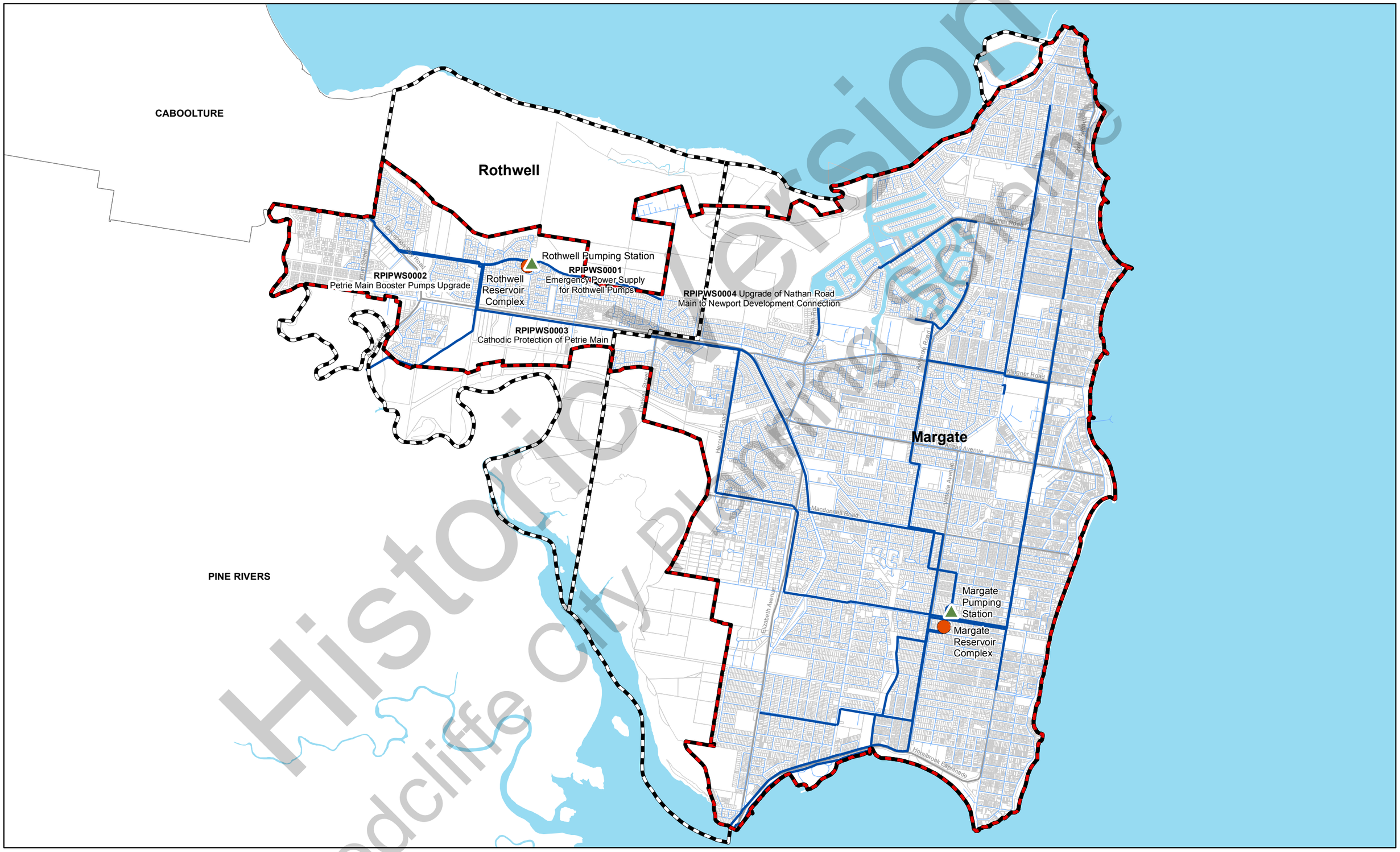
Effective from 08.04.13

3.2 Locations within the PIA not serviced by the Sewerage Network



MORETON BAY REGIONAL COUNCIL
Redcliffe District
Effective from 08.04.13

3.3 Trunk Water Supply Network



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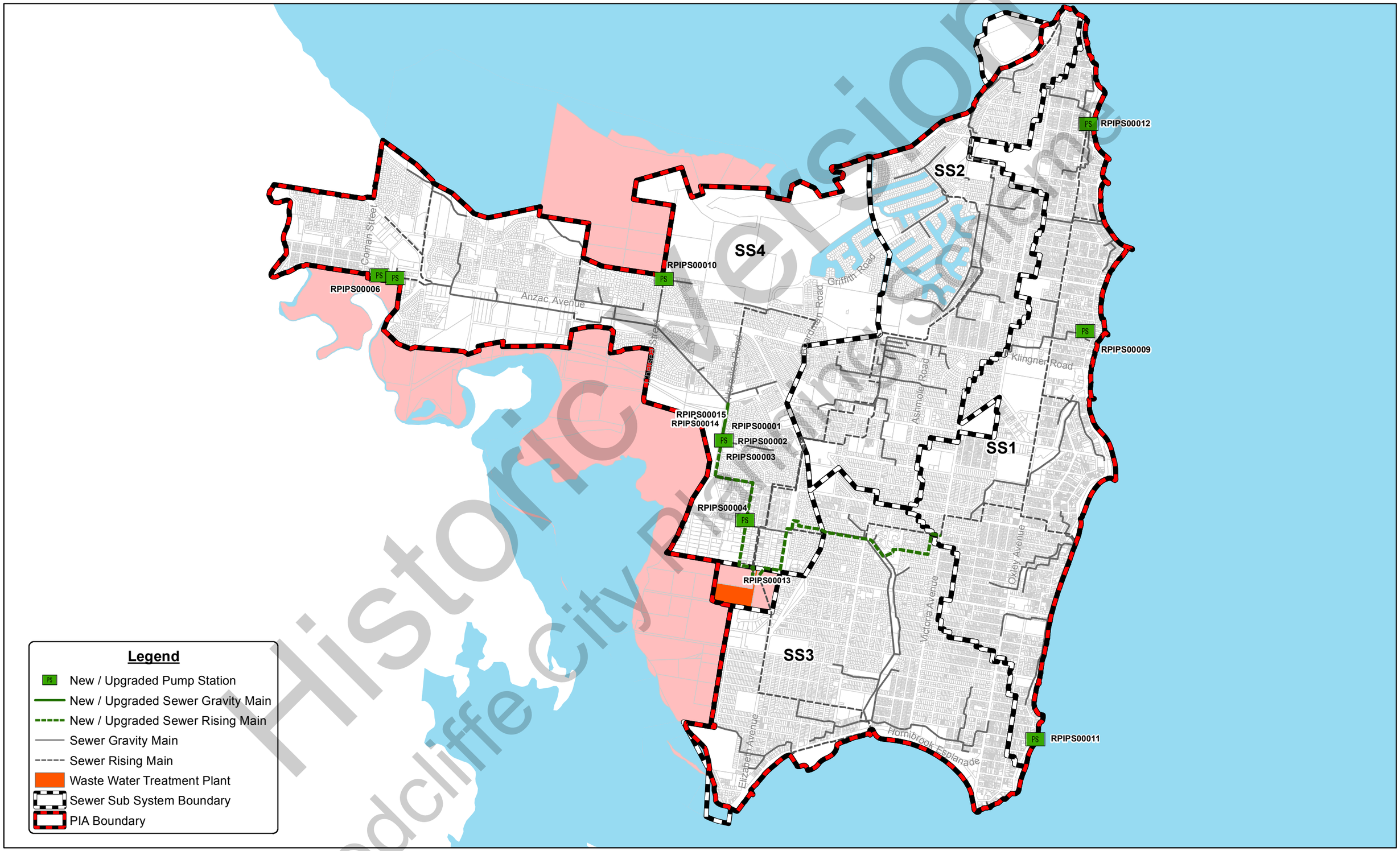
MORETON BAY REGIONAL COUNCIL
Redcliffe District

Effective from 08.04.13

3.4 Trunk Sewerage Network



MORETON BAY REGIONAL COUNCIL
Redcliffe District
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3.5 Stormwater Network

Legend

- Stormwater Catchments
- PIA Boundary

FUTURE INFRASTRUCTURE

- Bioretention Basin
- GPT
- Trash Rack
- Wetland
- Bioswale
- Pipe Drainage
- Revegetation

EXISTING INFRASTRUCTURE

- Existing GPT
- Existing Box Culverts
- Existing Trunk Stormwater Mains

SAL_WET_29
SAL_GPT_35
SAL_WET_28
SAL_GPT_34
SAL_GPT_33
SAL_WET_27
SAL_WET_26
SAL_GPT_32
SAL_WET_25
SAL_GPT_31
SAL_GPT_40
SAL_WET_24
SAL_GPT_30
SAL_GPT_29
SAL_WET_23
SAL_GPT
Saltwater Creek
Anzac Avenue
Duffield Road

Redcliffe Catchment Detail

RED_GPT_13
RED_GPT_14
RED_GPT_12
RED_TR_2
RED_GPT_11
RED_GPT_10
RED_GPT_15
RED_GPT_9
RED_GPT_8
RED_GPT_7
RED_GPT_6
RED_TR_1
RED_GPT_5
RED_GPT_4
RED_GPT_3
RED_GPT_2
RED_GPT_1
Klingner Road
Bianco Street, Kippa-Ring
Mccosker Street, Kippa-Ring
Yalumba Street
Marsala Street
Cabernet Street, Kippa-Ring
Tequila Street, Kippa-Ring
Mcpherson Street, Kippa-Ring
Dalton Street
Beach Street
Norcott Street, Kippa-Ring
Sparkes Street, Kippa-Ring
Oleander Street, Kippa-Ring
High Street

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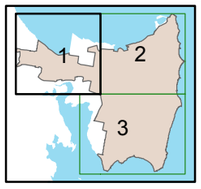
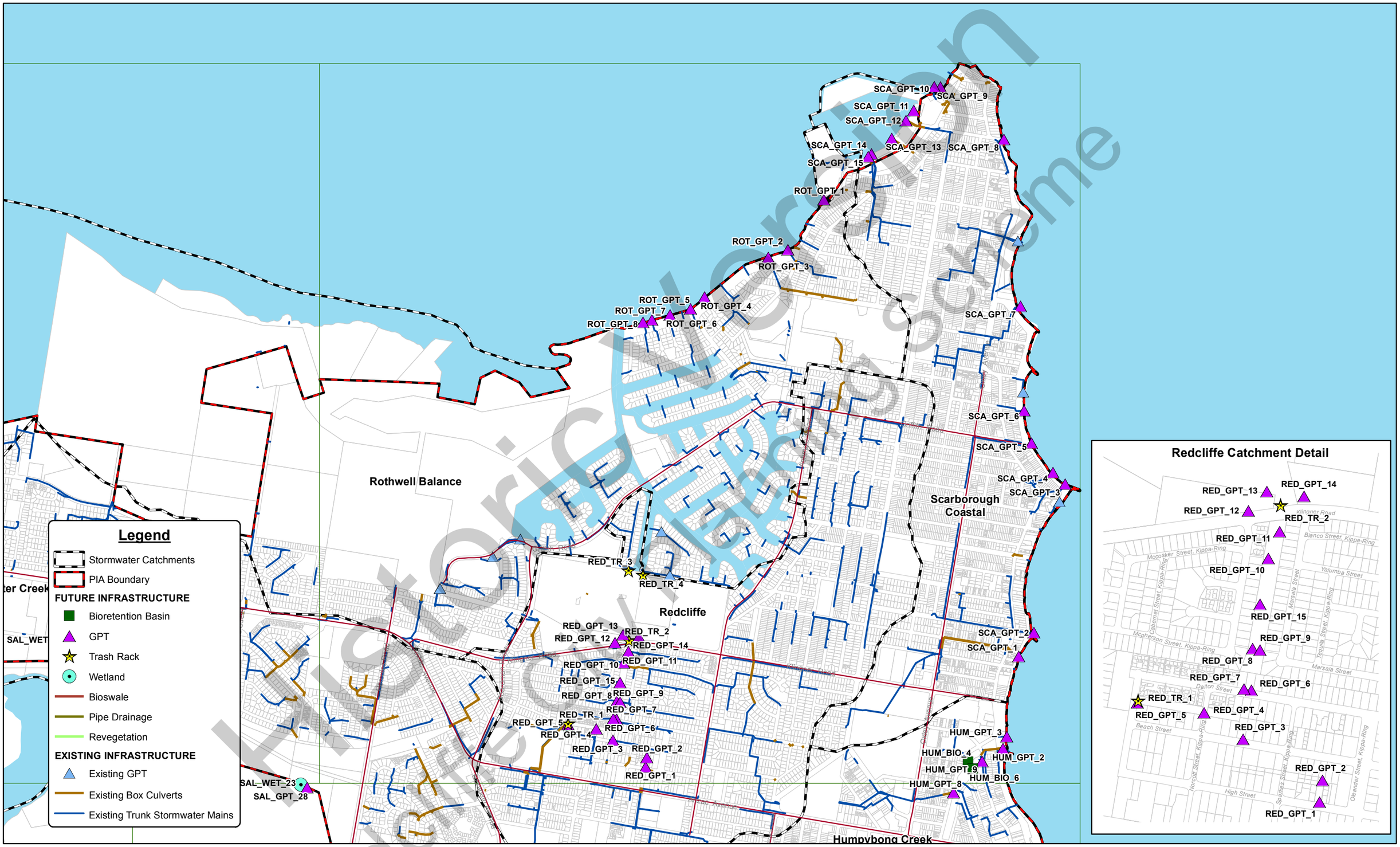


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 1

Effective from 08.04.13

3.5 Stormwater Network

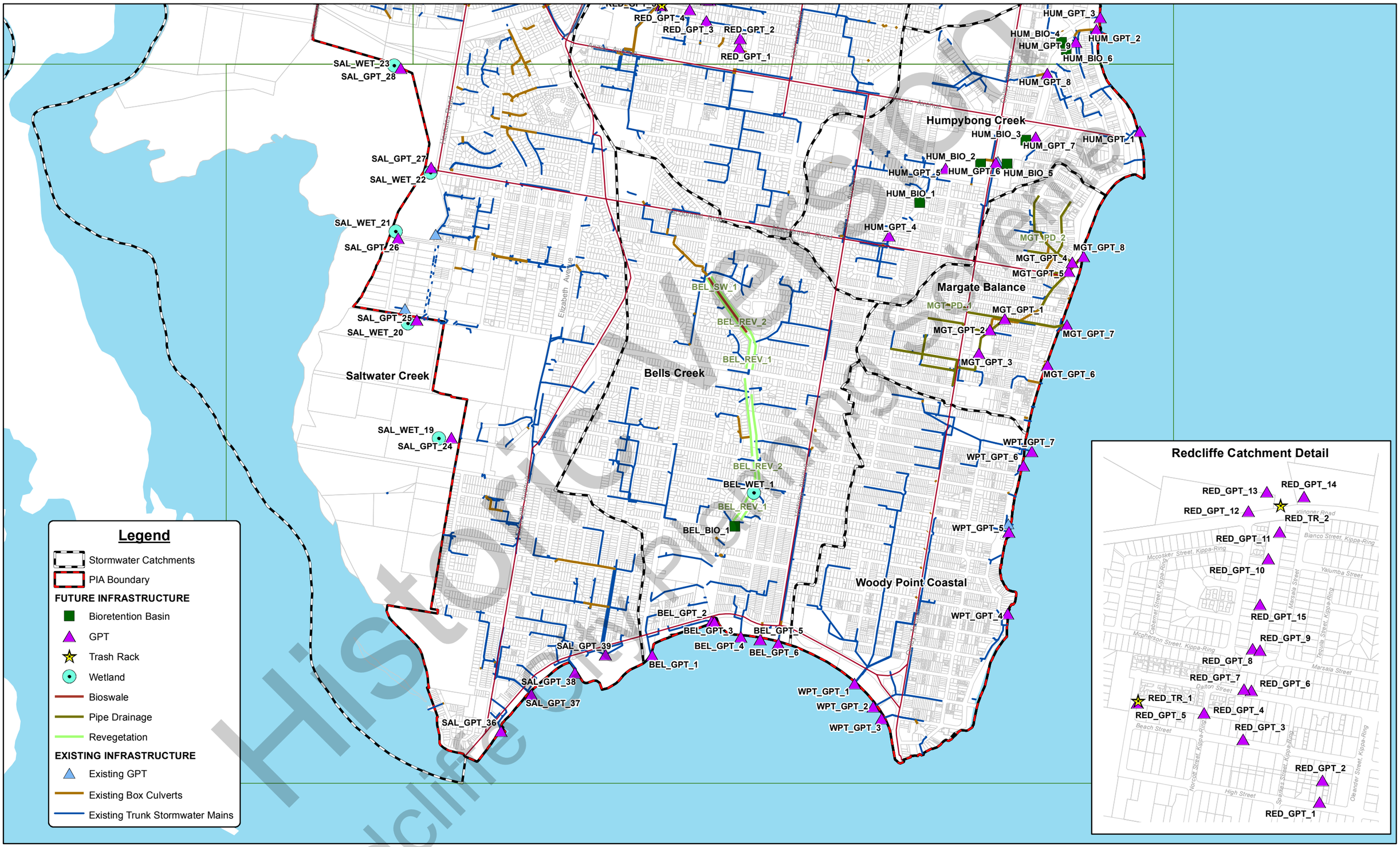


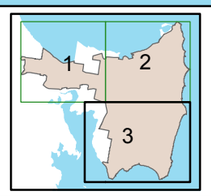
MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 2

Effective from 08.04.13

3.5 Stormwater Network



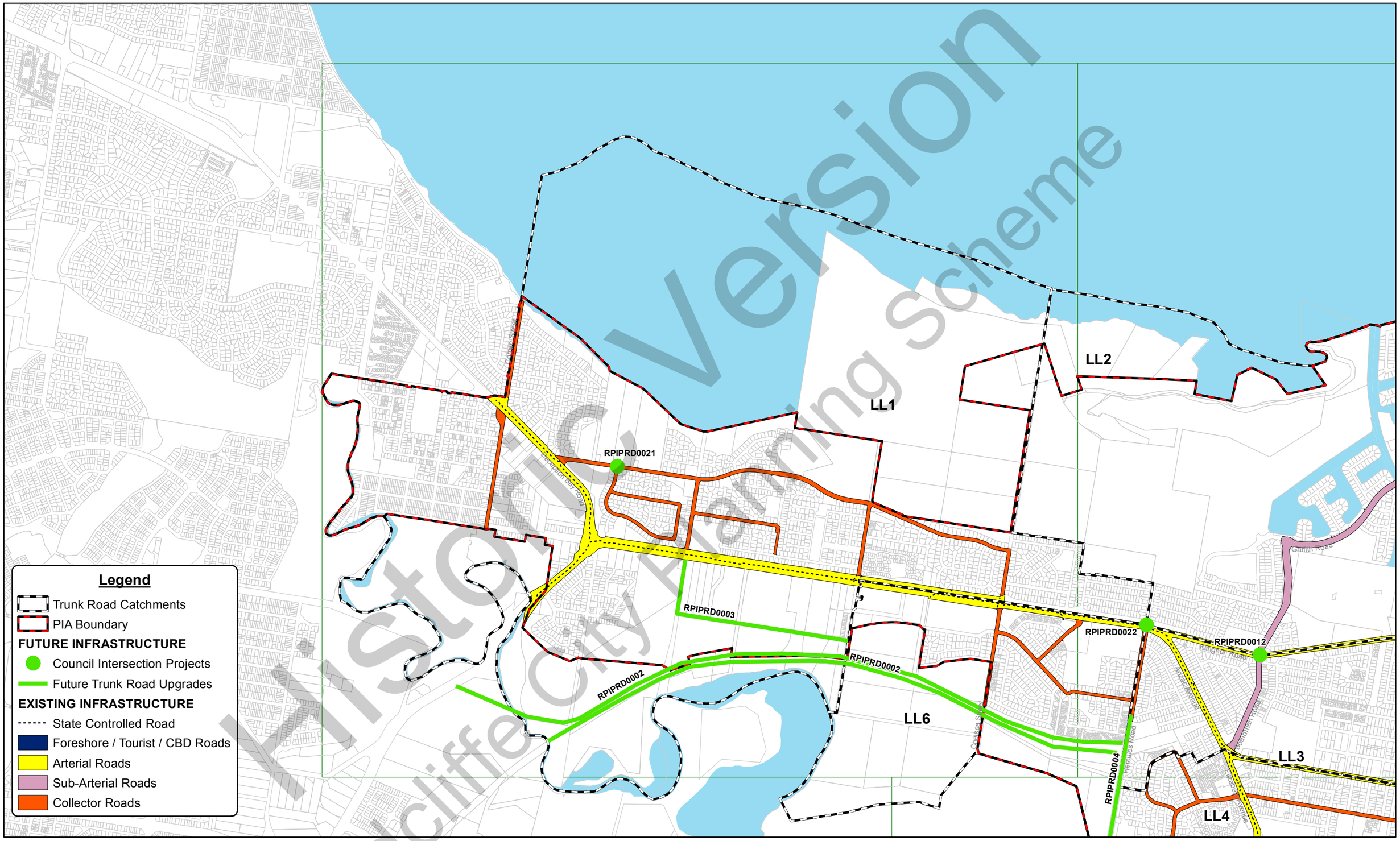


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 3

Effective from 08.04.13

3.6.1 Transport Network

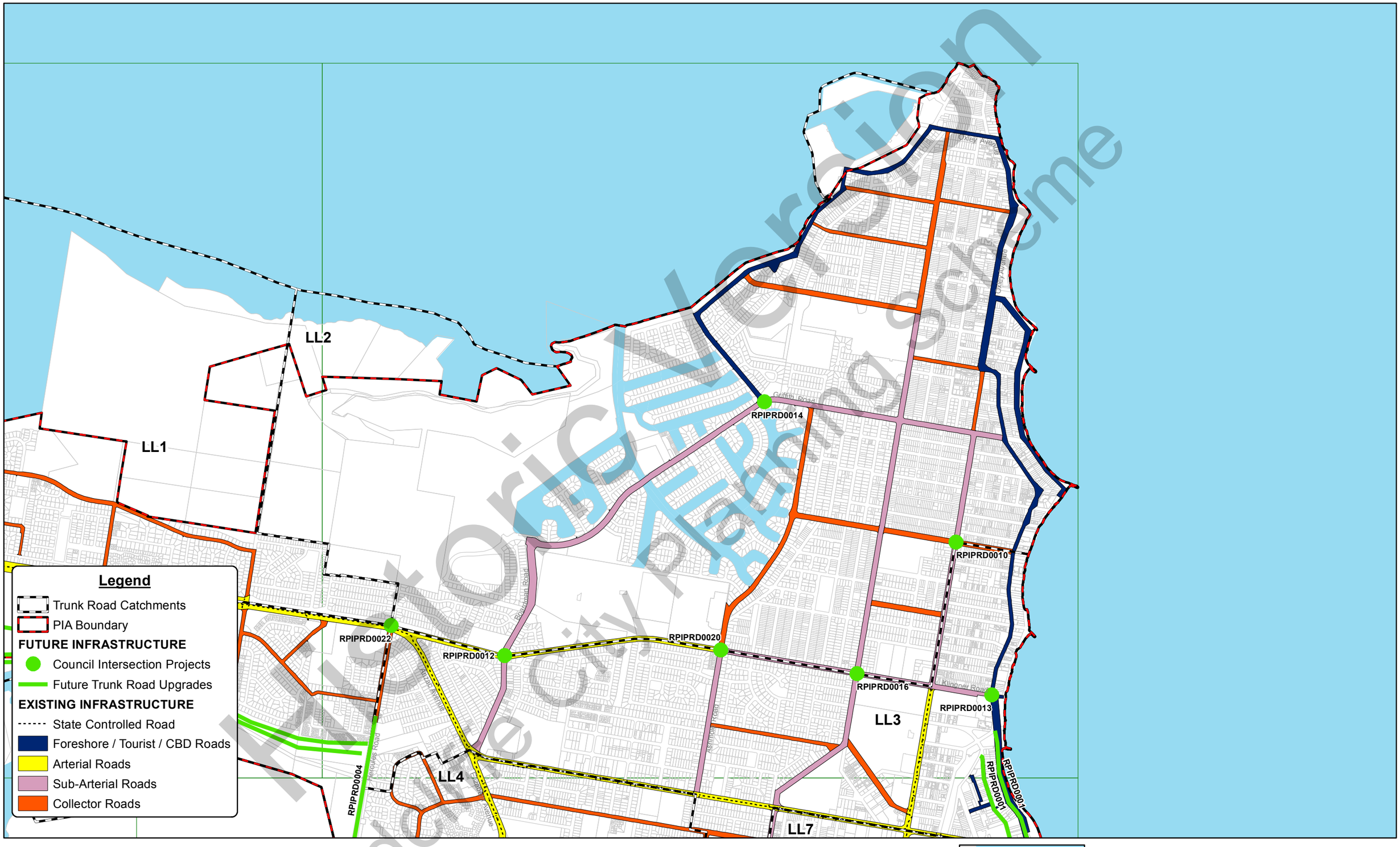


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 1

Effective from 08.04.13

3.6.1 Transport Network



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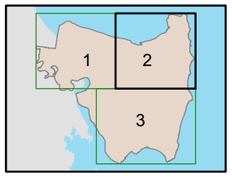
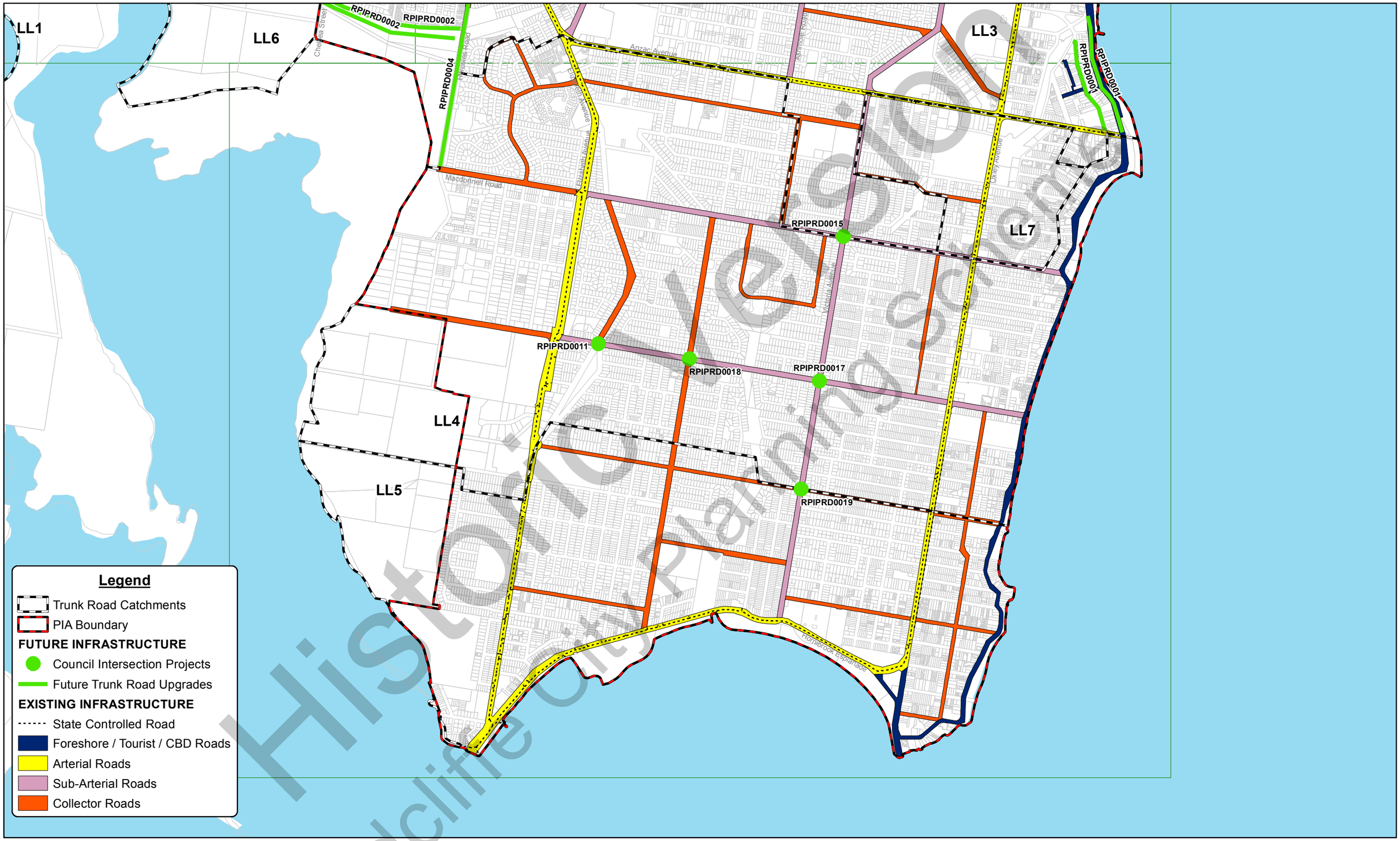


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 2

Effective from 08.04.13

3.6.1 Transport Network



Legend

- Trunk Road Catchments
- PIA Boundary

FUTURE INFRASTRUCTURE

- Council Intersection Projects
- Future Trunk Road Upgrades

EXISTING INFRASTRUCTURE

- State Controlled Road
- Foreshore / Tourist / CBD Roads
- Arterial Roads
- Sub-Arterial Roads
- Collector Roads

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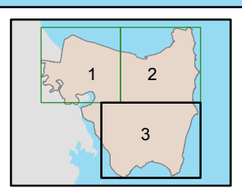
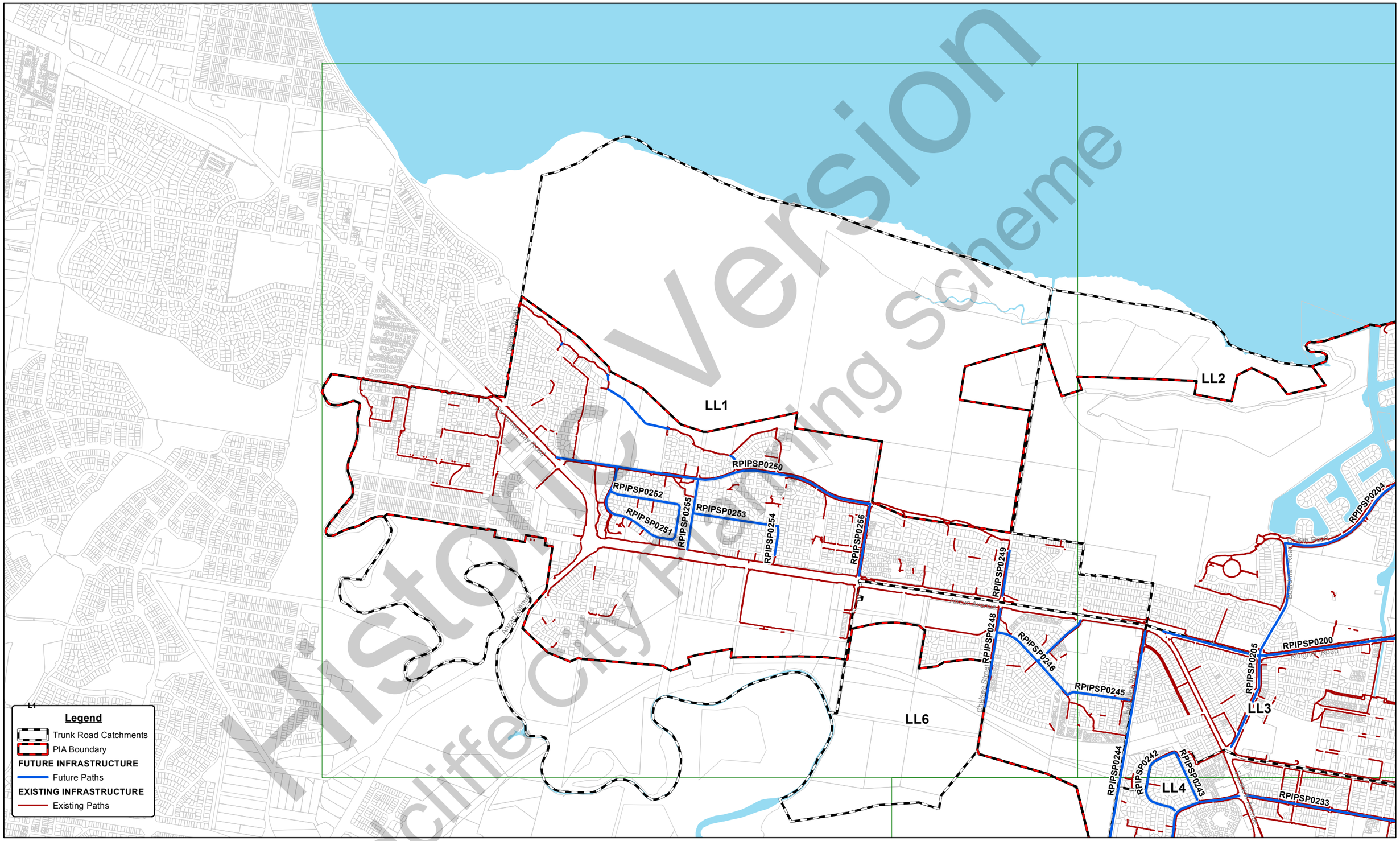


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 3

Effective from 08.04.13

3.6.2 Transport Network - Pathways



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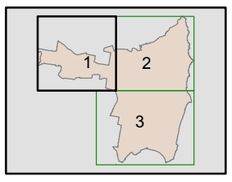
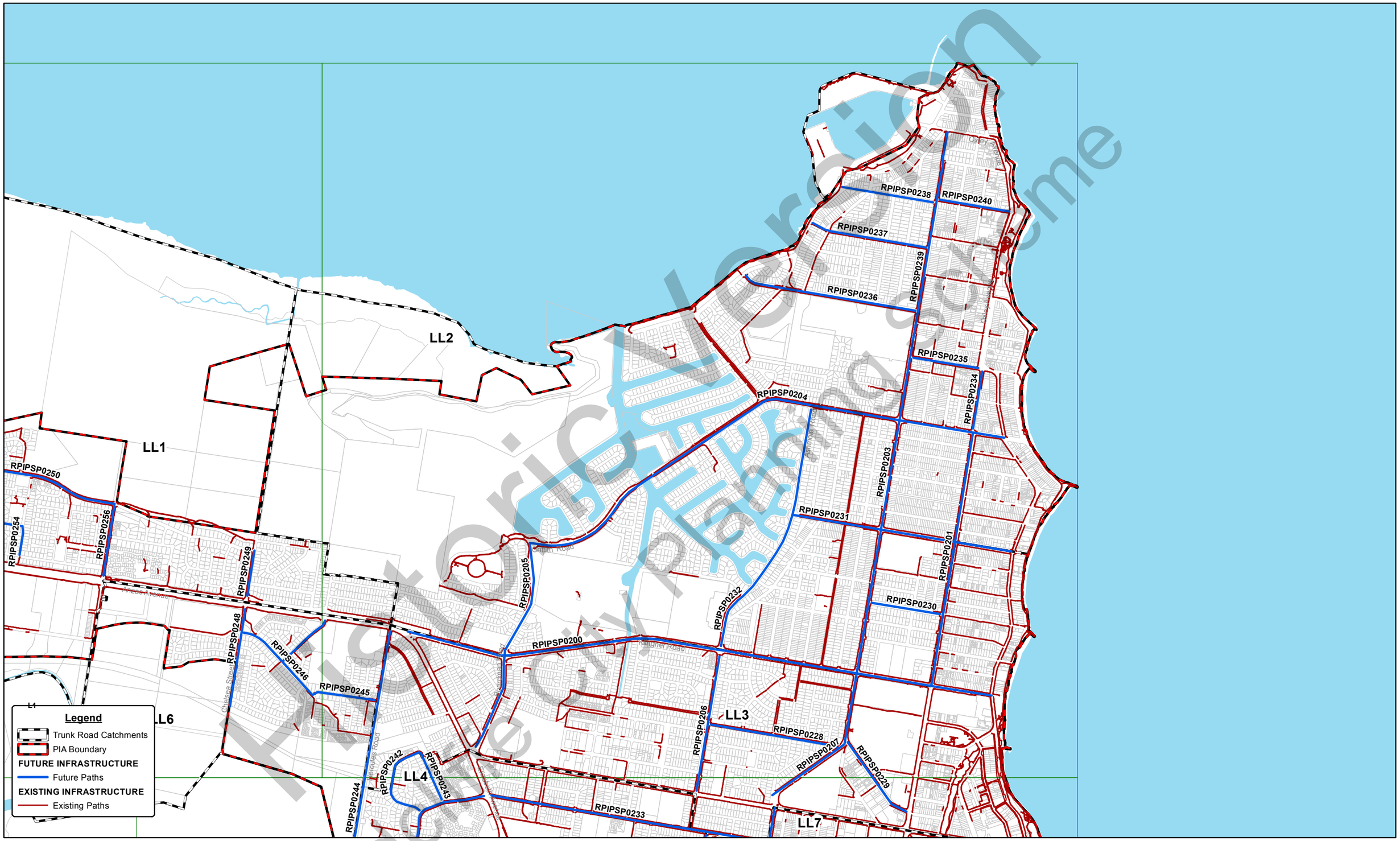


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 1

Effective from 08.04.13

3.6.2 Transport Network - Pathways



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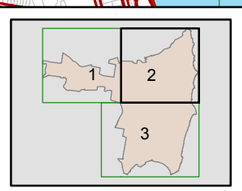
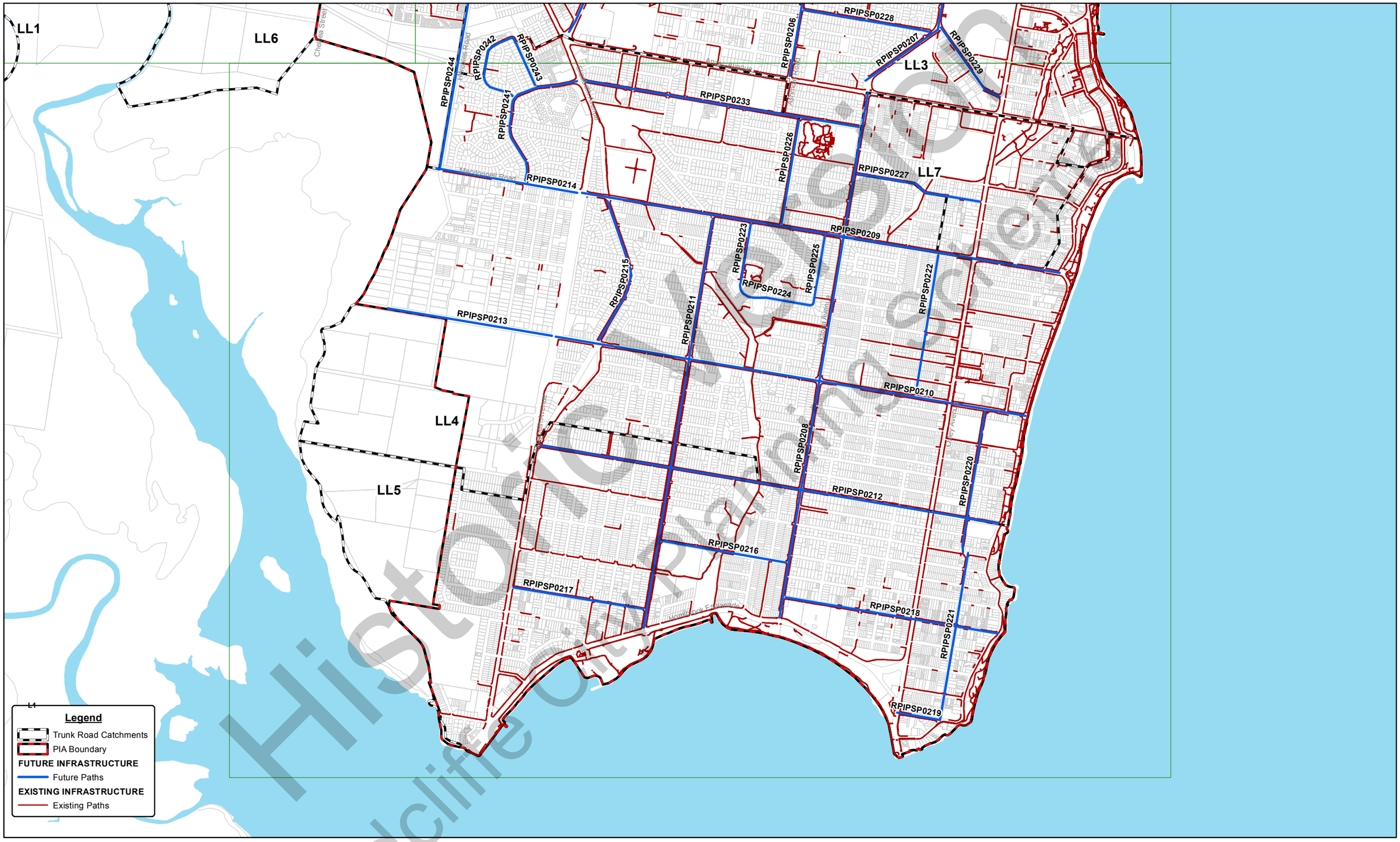


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 2

Effective from 08.04.13

3.6.2 Transport Network - Pathways



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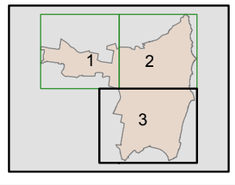
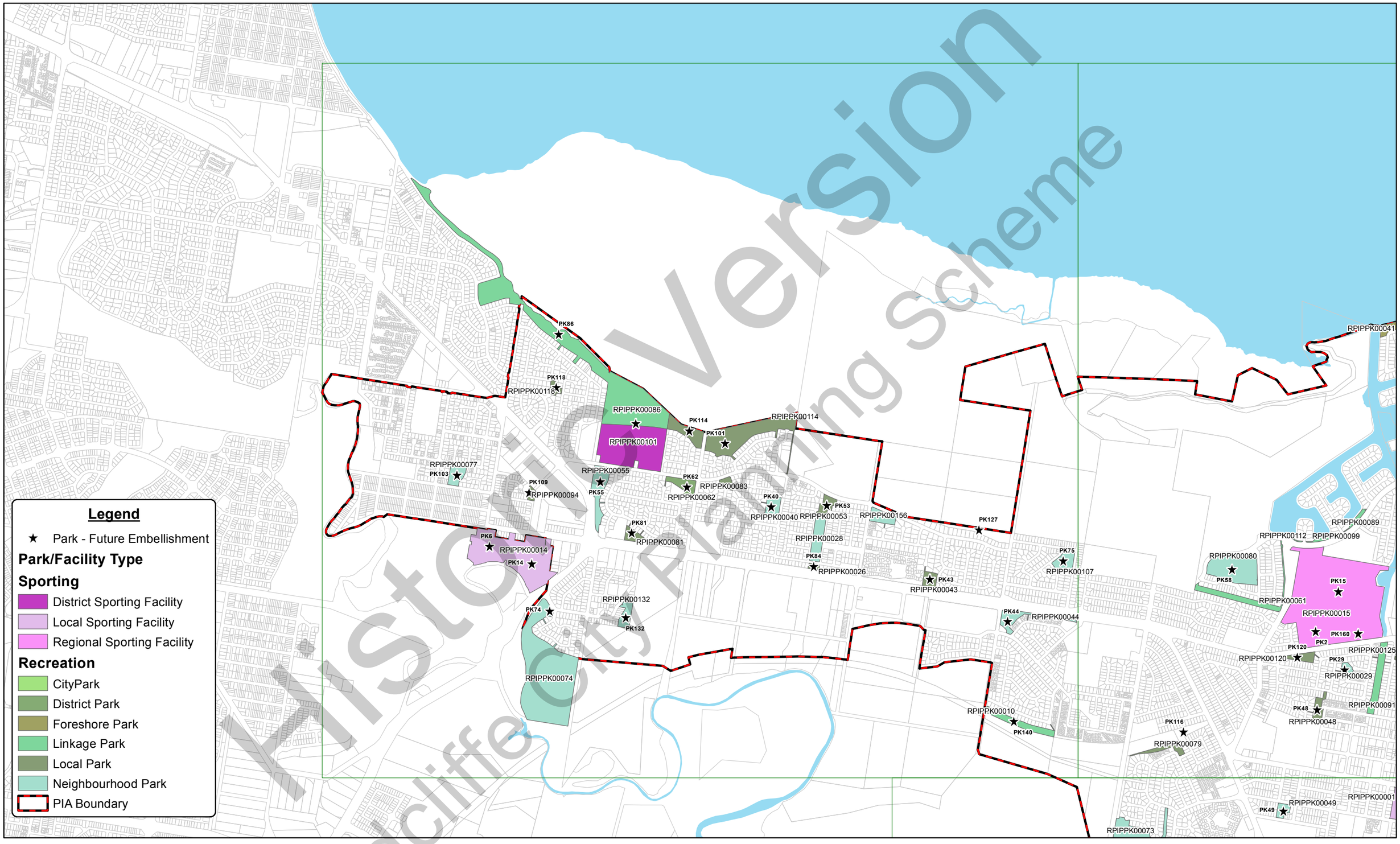


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 3

Effective from 08.04.13

3.7 Public Open Space Network



Legend

★ Park - Future Embellishment

Park/Facility Type

Sporting

- District Sporting Facility
- Local Sporting Facility
- Regional Sporting Facility

Recreation

- CityPark
- District Park
- Foreshore Park
- Linkage Park
- Local Park
- Neighbourhood Park
- PIA Boundary

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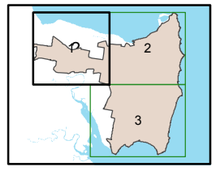
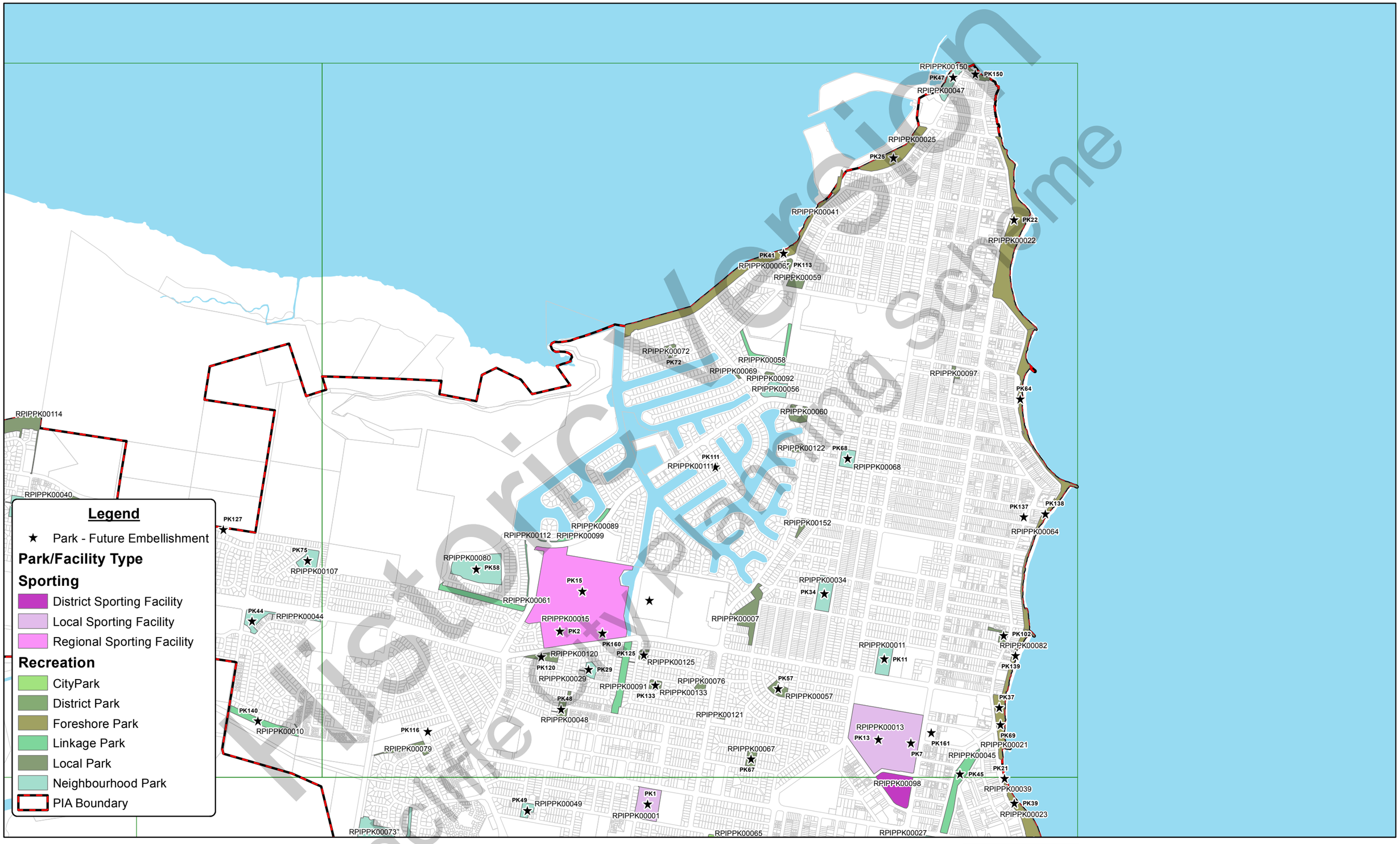


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 1

Effective from 08.04.13

3.7 Public Open Space Network



Legend

★ Park - Future Embellishment

Park/Facility Type

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- Regional Sporting Facility

Recreation

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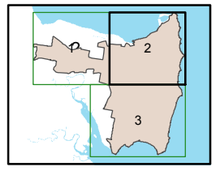
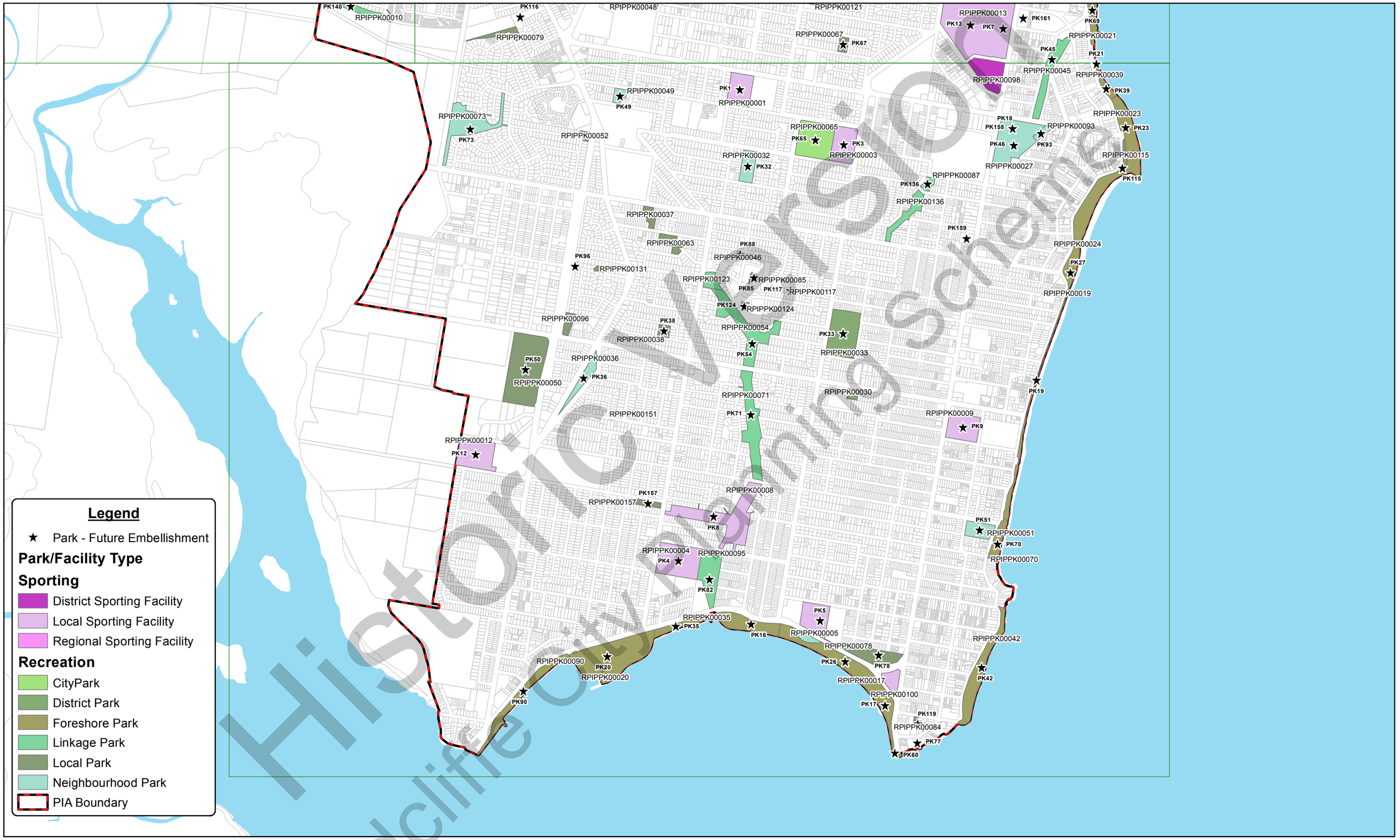


MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 2

Effective from 08.04.13

3.7 Public Open Space Network



Legend

★ Park - Future Embellishment

Park/Facility Type

Sporting

- District Sporting Facility
- Local Sporting Facility
- Regional Sporting Facility

Recreation

- CityPark
- District Park
- Foreshore Park
- Linkage Park
- Local Park
- Neighbourhood Park
- PIA Boundary

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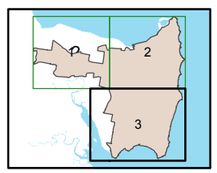

MORETON BAY REGIONAL COUNCIL
Redcliffe District

Map No: 3

Effective from 08.04.13