Moreton Bay Regional Council – Pine Rivers Shire

Planning Scheme Policy

PSP22 Development Contributions for Trunk Infrastructure – Water Supply

Moreton Bay Regional Council – Pine Rivers Shire

PSP22 Development Contributions for Trunk Infrastructure – Water Supply

ADOPTION
Pine Rivers Shire Council adopted this planning scheme policy on 19 June 2006.

COMMENCEMENT
This planning scheme policy took effect from 15 December 2006.

Amendment 2/2008
ADOPTION OF AMENDMENT
Moreton Bay Regional Council adopted this amendment to the planning scheme policy on 19 August 2008.

COMMENCEMENT OF AMENDMENT
This amendment to the planning scheme policy took effect from 1 September 2008.

Amendment 1/2009
ADOPTION OF AMENDMENT
Moreton Bay Regional Council adopted this amendment to the planning scheme policy on 8 September 2009.

COMMENCEMENT OF AMENDMENT
This amendment to the planning scheme policy took effect from 29 October 2009.

This document contains the corrections identified in the "Planning Scheme Policies List of Corrections" document, and reflects the directive by the CEO to implement those corrections. The adopted version of the PSPs and the "Planning Scheme Policies List of Corrections" document can be accessed at Council's webpage.

I, Daryl Hitzman, A/Chief Executive Officer, of the Moreton Bay Regional Council, hereby certify that this document is a true copy of the original.

Daryl Hitzman
A/Chief Executive Officer

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PSP 22 – DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE – WATER SUPPLY

Head of Power

This document is a Planning Scheme Policy for the purposes of the *Integrated Planning Act 1997* (the Act) and is made in compliance with the process prescribed in Schedule 3 of the Act.

Objective

The objective of this policy is to apportion the cost of Water Supply Trunk Infrastructure over all benefiting development (existing and future) commensurate with the demand or load that existing and future development will place on existing and planned future infrastructure while ensuring a reasonable and equitable distribution of the costs of Water Supply Trunk Infrastructure works between Council and developers of land in the former Pine Rivers Shire.

Definitions / Application

Application

This policy applies to all applications for development which has been made assessable against the *PineRiversPlan* and which will utilise any part of the Water Supply Trunk Infrastructure Network. For the purposes of this policy, the extent of the Water Supply Trunk Infrastructure Network within the former Pine Rivers Shire is shown in Schedule D.

The policy outlines the basis of Council's Infrastructure Contributions Regime for the Water Supply Trunk Infrastructure Network in the former Pine Rivers Shire. It is to be read in conjunction with Planning Scheme Policy PSP21 Development Contributions for Trunk Infrastructure – Administration Policy.

Payment of any monetary contribution under this policy will in no way relieve the development proponent from any requirement under a condition of development approval to undertake non-trunk works or to connect the development to trunk infrastructure. Nothing contained in this policy precludes Council and the development proponent from entering into an infrastructure agreement in regard to the matters dealt with by this policy.

Definitions

The definitions of applicable terms are contained in PSP21 Development Contributions for Trunk Infrastructure – Administration Policy. Where a term used in this policy is not defined in PSP21 that term shall, unless the context indicates or requires otherwise, have the meaning assigned to it in the *PineRiversPlan* or in the *Integrated Planning Act 1997*.

Policy Statement

1 Scope

This policy sets out the basis for determining the amount of Development Contributions for Water Supply Trunk Infrastructure which Council will impose as conditions of development approval. The provisions of this policy shall apply to applications for development within the Shire which will utilise Water Supply Trunk Infrastructure either immediately or at some time in the future. This policy:

- is to be read in conjunction with Planning Scheme Policy PSP21 Development Contributions for Trunk Infrastructure – Administration Policy;
- specifies the assumptions made in determining the rate of the contribution payable towards the cost of Water Supply Trunk Infrastructure within Council's Designated Infrastructure Service Area (DISA);
- lists the land use, density and demand assumptions made for predicting demand and planning the Water Supply Trunk Infrastructure Network;
- specifies the works, structures or equipment, which the Council determines to be Water Supply Trunk Infrastructure;
- establishes the estimated cost of construction and any required augmentation of the Water Supply Trunk Infrastructure Network in respect of which contributions are to be made; and
- lists the applicable Demand Factors and Schedules of Infrastructure Contributions Rates.

2 Background Information

The methodology used in establishing the amount of required Trunk Infrastructure Contributions under this policy is based on the report by John Wilson and Partners, "PINE WATER Priority Infrastructure Plan, Water Supply & Sewerage", September 2005 (the Study Report) which was formally adopted by the former Pine Rivers Shire Council on 26 September 2005. The Study Report comprises:-

(1) Part 1 - Executive Summary (September 2005);

(2) Part 2 - Main Report (September 2005);

(3) Part 3 - Detailed Maps (September 2005); and

(4) Part 4 - Calculations and Supporting Data (September 2005).

The policy methodology has also been informed by:-

- Pine Water, Update of Existing and Ultimate Demand Forecast in Water Supply Model and Provision of a 15 Year Capital Works Program, Final Report November 2006 (MWH);
- MWH, PIP Population Update Report, August 2007; and
- Moreton Bay Water, Hydraulic Solution and Capital Works Program 2008/09.

3 Water Supply Methodology

3.1 Methodology

The methodology used for determining the rate of Infrastructure Contributions for Water Supply applied under this policy is based upon the approach set out in the Department of Local Government and Planning's IPA Guidelines 1/04 and 2/04 (dated 4 October 2004) and the Standard Infrastructure Charges Schedule Nov 2008.

In summary, Infrastructure Contribution Rates for the Water Supply Trunk Infrastructure Network have been derived in the following manner:-

(a) determine the service catchments for Trunk Infrastructure Delivery;

(b) estimate the amount of new development, or the planned / ultimate population and resulting demand on the network within each service catchment[1];

(c) determine the Trunk Infrastructure likely to be needed to service the development or planned / ultimate population within the service catchment to deliver the Desired Standard of Service (DSS) outlined in Schedule E of this policy. Where water supply trunk infrastructure is shared between service catchments, the cost of these infrastructure components has been apportioned in proportion to the relative demands;

(d) determine the current replacement costs for existing Trunk Infrastructure, and the future establishment costs for required future Trunk Infrastructure in net present values for each service catchment; and

(e) derive the applicable Infrastructure Contribution Rates by dividing the total network costs in net present values by the total discounted 'ultimate' demand on the network in the service catchment, thereby producing a rate per selected demand unit.

The contribution rate, for each particular service catchment, was determined by applying the formula:-

$$CR_{Catchment} = (Asset\ Values) / (Demand)$$

Where:-

$CR_{Catchment}$	**=**	**Contribution Rate for an individual service catchment (expressed in $/EPW)**
Asset Values	**=**	**Value of Catchment's Assets ($)**
	=	**Σ(Current Replacement Cost of Existing assets at 01-01-2009 x proportion of the asset utilised by the service catchment) + Σ (net present value at 01-01-2009 of future assets x proportion of the asset utilised by the service catchment)**
Demand	**=**	**Σ(Existing Demand in the service catchment at 01-01-2009) + (Net Present Value at 01-01-2009 of the Future Demand to Ultimate Development) (expressed in EPW)**

[1] Note: For this network 'ultimate' demand represents demand at the end of the period to full development of the Shire assuming densities consistent with the Planning Scheme and the Dakabin, Mango Hill and Griffin Local Area Plans.

This methodology applies an equitable distribution of trunk infrastructure costs between Council (on behalf of the existing community), and entities proposing new development. Each development proponent will only be responsible for meeting the establishment costs of that proportion of the water supply trunk infrastructure network planned to be consumed by that entity's development proposal.

3.2 Water Supply Service Catchments

The Designated Infrastructure Service Area (DISA) for the former Pine Rivers Shire has been divided into the Water Supply Service Catchments shown in Table 3.2A:-

Table 3.2A - Water Supply Service Catchments

WATER SUPPLY SERVICE CATCHMENTS	SHORT NAME
DAYBORO	DAY
ALBANY CREEK LLZ	ACL
ALBANY CREEK HLZ	ALC
CLEAR MOUNTAIN HLZ	CMH
DAKABIN	DKB
EATONS HILL HLZ	EAH
GRIFFIN	GRF
HILLS LLZ	HLA
HILLS HLZ	HLH
KALLANGUR	KAL
MANGO HILL	MHL
NORTH LAKES	NLK
PETRIE	PET
SAMFORD DOWNS	SAD
SAMFORD VILLAGE	SAM
STRATHPINE / LAWNTON LLZ	STR

The extent of each of the Service Catchments is shown graphically on the maps contained in Schedule C.

The North Lakes development at Mango Hill and the development of the former CSIRO land in the Samford Valley are subject to infrastructure agreements, and, as such, are specifically excluded from the scope of this policy.

While it is acknowledged that these catchments do impose a load on existing trunk infrastructure, and that load is likely to increase over time until the development in those areas is completed, appropriate mechanisms have been included in the Contributions regime adopted under this policy to ensure that the costs associated with this load are not passed onto other development.

3.3 Water Supply Demand Assumptions

Approach to Demand and Load Modelling

The reports referred to in Section 2 of this policy document both assumed demand across the whole Shire and the most cost effective strategy for servicing those demand areas as well as providing a valuable input into aligning Council's Capital Works Programs with assumed growth rates. These reports cover the full anticipated extent of urban areas within the Shire up to the planning horizon of this policy.

As part of the revisions undertaken to produce this version of the policy, new Demand and Load Models for Water Supply, consistent with the Planning Assumptions documented in PSP21 Section 3 were built. The demand for 2026 was compared to the changes in demand indicated in Council's previously adopted Water Master Plan for the period 2006 to full development of the Shire assuming densities consistent with the Planning Scheme and the Dakabin, Mango Hill and Griffin Local Area Plans – this being termed 'ultimate' development. Council's consultants advised that the differences were minor. The Hydraulics Models have been re-run to reflect the new Desired Standards of Service and the permanent water restrictions imposed for SEQ by the State.

The determination of demand and load for residential zoned land was based on population numbers assumed for the land. Demand and load for non-residential zoned land was derived from land use zoning and an assumed number of Equivalent Persons (Water) per hectare per zone as outlined in Table 3.3A. The

rate of growth of non-residential demand was linked directly to the growth in employment on the cadastral base.

Water Supply Demand Assumptions

The Demand Projections, Capacity Planning and Infrastructure Contribution Rates developed for the Water Supply Network are expressed in the Standard Demand Units of 'Equivalent Person (Water)' (EPW).

One EPW equates 296 litres per person per day in accordance with the permanent water restrictions in place in South East Queensland.

For Non-Residential Demand, the assumptions for each zone expressed in EPWs per hectare are also shown in Table 3.3A. They have been verified by averaging water billing data for the years 2004-2005 (Level 1 Water Restrictions only) by land use, zone and site area and reflect the average or, if higher, allowable consumption.

Table 3.3A - Water Demand Assumptions for Residential and Non-Residential Areas

Planning Scheme Zone	Assumed Development Density in EPW's/ha
RESIDENTIAL A	Population Forecast as per Planning Assumptions
RESIDENTIAL B	Population Forecast as per Planning Assumptions
SPECIAL RESIDENTIAL	Population Forecast as per Planning Assumptions
PARK RESIDENTIAL	Population Forecast as per Planning Assumptions
RURAL RESIDENTIAL	Population Forecast as per Planning Assumptions
CENTRAL BUSINESS	30
COMMERCIAL	30
LOCAL BUSINESS	30
NEIGHBOURHOOD FACILITIES	30
URBAN VILLAGE	30
VILLAGE CENTRE	30
HOME INDUSTRY	10
SERVICE INDUSTRY	15
GENERAL INDUSTRY	30
EXTRACTIVE INDUSTRY	15
FUTURE URBAN	30
RURAL ZONE (COAST AND RIVER LANDS LOCALITY)	7.5
RURAL ZONE (URBAN, MAJOR EMPLOYMENT CENTRE, CATCHMENT, RURAL LIVING, VILLAGE, MT SUMMIT AND FORESTS LOCALITIES)	7.5
CONSERVATION	0
PARK AND OPEN SPACE	5
SPORTS AND RECREATION	15
SPECIAL FACILITIES	15
SPECIAL PURPOSES	15

Projected Water Supply Demand

Projected ultimate NPV demand for the water supply trunk network is shown in Table 3.3B. To satisfy the discounted cash flow methodology requirements of calculating the infrastructure contribution rates, existing demand is added to the value of future demand which has been indexed for anticipated fluctuations in construction costs (generally increases) and discounted for cost of capital, resulting in NPV Demand.

Table 3.3B –NPV Demand in EPWs by Water Supply Service Catchment[2]

	Actual			NPV		
Service Catchment	RES ULTIMATE	NONRES ULTIMATE	TOTAL ULTIMATE	RES ULTIMATE	NONRES ULTIMATE	TOTAL ULTIMATE
ALBANY CREEK HLZ	5,727	5,765	11,492	11,584	1,641	13,226
ALBANY CREEK LLZ	10,633	1,667	12,299	6,425	2,917	9,342
CLEAR MOUNTAIN HLZ	11,744	3,227	14,971	12,024	1,635	13,659
DAKABIN	9,848	3,049	12,898	9,432	2,874	12,306
DAYBORO	2,653	926	3,579	2,564	908	3,471
EATONS HILL HLZ	3,702	107	3,810	4,282	105	4,387
GRIFFIN	21,632	404	22,037	20,127	379	20,507
HILLS HLZ	3,071	250	3,321	3,265	239	3,504
HILLS LLZ	19,829	4,489	24,318	21,285	8,518	29,803

[2] Differences between the total value and the sum of the column can occur due to values being displayed without cents. Background calculations including cents are correct.

	Actual			NPV		
Service Catchment	**RES ULTIMATE**	**NONRES ULTIMATE**	**TOTAL ULTIMATE**	**RES ULTIMATE**	**NONRES ULTIMATE**	**TOTAL ULTIMATE**
KALLANGUR	36,020	13,672	49,692	39,159	12,110	51,270
MANGO HILL	15,470	1,018	16,487	14,855	952	15,807
NORTH LAKES	17,612	13,016	30,629	23,689	11,152	34,841
PETRIE	8,112	4,606	12,718	9,209	4,152	13,361
SAMFORD	2,667	393	3,060	1,020	405	1,425
SAMFORD DOWNS	3,520	634	4,154	2,105	701	2,806
STRATHPINE / LAWNTON LLZ	38,097	33,270	71,367	40,222	23,867	64,089
	210,336	**86,493**	**296,830**	**221,247**	**72,555**	**293,802**

4 Water Supply Plan For Trunk Infrastructure

4.1 Water Supply Trunk Infrastructure Network

The following Infrastructure items as shown on the maps contained in Schedule D of this policy are deemed to be Trunk Infrastructure for the purpose of planning and funding of the Trunk Water Supply Network:-

(1) pumping stations and trunk mains to transport the treated water to distribution or storage reservoirs or elevated tanks;

(2) distribution or non-regional storage reservoirs and elevated tanks;

(3) chlorination and rechlorination equipment;

(4) trunk delivery and distribution infrastructure (generally 300mm diameter mains and larger) which transports the water from distribution or storage reservoirs to the reticulation system, or which provides a general benefit to the water supply scheme;

(5) local control and monitoring systems;

(6) the following specific items of Infrastructure within the rural residential areas:-

- the 250mm diameter main which traverses Bunya Road and thence runs northwards to supply the Bergin and Wongam Creek area;
- the 200mm and 220mm diameter mains supplying reservoirs in Samford Village and Samford Downs;

(7) the 100mm and 150mm diameter mains at Dayboro from:-

- the intake wells to the treatment plants;
- the treatment plants to the Low Level Zone reservoir; and
- the Low Level Zone No. 1 (Roderick St) reservoirs to the High Level Zone reservoir at Sellin Road; and

(8) bulk water meters, pressure and flow control valves as well as the telemetry/SCADA systems which provide system monitoring and/or control.

Assets are also grouped into '**Active'** and '**Passive'** Assets:

Active water infrastructure assets consist mainly of above ground visible assets such as treatment plants, pumping stations, reservoirs and dams.

Passive water infrastructure assets consist of underground assets such as trunk mains, reticulation mains, pipe fittings and property connections.

The various elements of this Trunk Infrastructure are shown on the maps in Schedule D and are tabulated in Section 4.2.

Specific Exclusions

The North Pine Dam WTP is situated in the Pine Rivers Shire but it is neither owned nor operated by Council. Treated water from this facility is supplied to Council under a Bulk Supply Agreement. Hence, this facility has been excluded from infrastructure contribution calculations on the grounds that establishment costs are recovered by the current owner/operator through the water tariff detailed in the Bulk Supply Agreement.

4.2 Water Supply Trunk Infrastructure Valuations

Costing information for existing Passive Assets

Valuations of existing water mains and other passive assets listed in this policy are based on a report titled "Water and Sewerage Mains Unit Costs" dated March 2006 prepared by Consultant Cardno Limited. The unit rates provided therein only take into account pipe diameter and depth. Refinements such as type of soil, water table, acid sulphate soil, urban or rural etc are not considered but the rates do include 20% oncost for construction in sand in an urban residential area. Valuations of water mains include an allowance for connections, valves and hydrants. The valuations shown in Tables 4.2A and 4.2B have been derived directly from the June 2006 asset valuations for Pine Water's assets and are higher than those calculated using the

rates reported in Cardno's March 2006 report due to escalation from March 2006 to January 2009 based on Rawlinson's Construction Index for Brisbane.

Costing information for existing Active Assets

Current replacement value of existing active assets was determined 'in house' using the criteria contained within the definition of the 'establishment cost of trunk infrastructure' in IPA.

Costing information for Planned Future Assets

Costs for Future Assets have been derived using the estimates in the current Capital Works Program escalated to reflect values current at 1 January 2009.

Table 4.2A – Water Supply Trunk Infrastructure Establishment Cost[3]

Network Value (current at 01 January 2009)	
Existing Assets	$130,749,426
Future Infrastructure	$34,761,498
TOTAL	$165,510,923

Existing Water Supply Asset Schedule

Table 4.2B - Existing Active Trunk Water Supply Assets [4]

Existing Active Assets	Network Cost (current at 1 January 2009)
MAJOR ASSETS	
Bulk Water Meters	$294,444
RESERVOIRS & TANKS	
Albany Creek High Level Reservoir - 6.8ML	$1,978,482
Albany Creek Low Level Reservoir No. 1 - 2.25ML	$1,188,519
Albany Creek Low Level Reservoir No. 2 - 9ML	$2,325,784
Barber Road H. L.Reservoir (New) - 4.6ML	$1,698,414
Barber Road L. L Reservoir - 4.5ML	$1,541,879
Boundary Rd Reservoir No 2 - 32ML	$5,490,733
Boundary Road Reservoir No 1- 18.2ML	$3,469,215
Clear Mountain Reservoir No. 1 - 2ML	$1,029,092
Clear Mountain Reservoir No. 2 - 5ML	$1,579,834
Clear Mountain Reservoir No. 3 - 7ML	$1,791,558
Clear Mtn Res No 1 - 9ML	$225,851
Dayboro High Level	$232,744
Dayboro High Level Reservoir - 1.25ML	$566,787
Dayboro Low Level	$452,961
Eatons Hill Reservoir - 8.4ML	$2,302,651
Eatons Hill Tower - 0.45ML	$1,380,812
Hutton Road Reservoir No. 2 - 15.5ML	$3,312,798
Hutton Road Reservoir, No. 1 - 9ML	$2,345,475
Ira Buckby - Reservoir No 1- 24ML	$4,001,726
Ira Buckby 60ML Reservoir	$9,329,656
Kallangur Tower - 0.25ML	$459,268
Mt Mee Reservoir -1.8ML	$71,415
Petrie Tower Water Station - 0.45 ML	$1,380,559
Samford Downs Reservoir No. 1 - 1ML	$759,085
Samford Downs Reservoir No. 2 - 2.40ML	$1,169,489
Samford Downs Reservoir No. 3 (Bygott's Rd)- 4.2ML	$1,553,404
Torrens Road Tower- 0.15ML	$310,751
W640 Pressure Valves	$16,231
WP5230 - Dayboro Rd - below dam	$2,452,231
WP6140 - Kallangur	$1,229,776
WP6190 - Kallangur High Level	$359,382
WP6280 - Torrens Rd, Petrie	$211,489
WP6300 - James Cash Park, Eatons Hill	$690,839
WP6310 - Eatons Hill	$145,628

[3] Values in this table exclude any water trunk infrastructure directly attributable to the North Lakes catchment as these are subject to a separate agreement and charge.

[4] Differences between the total value and the sum of the column can occur due to values being displayed without cents. Background calculations including cents are correct.

Existing Active Assets	Network Cost (current at 1 January 2009)
WP6400 - Albany Creek High Level WP	$966,863
WP6500 - Albany Creek, Low Level	$1,701,726
WP6510 - Ira Buckby Rd	$856,120
WP6630 - Barber Rd	$574,985
WP6700 - Strathpine Booster WP	$2,650,859
WP6810 - Dayboro LL Res PS	$201,878
WP7100 - Regent St	$1,211,120
WP7600 - Gibbons Rd, Samford	$521,570
System Leakage Management	$2,582,500
	$68,616,587

Future Water Supply Trunk infrastructure

Table 4.2C Future Asset Schedule [5]

Project ID	Project Name	Anticipated Commencement of Construction	Service Catchment	NPV - 01 January 2009
WATER SUPPLY PROGRAMME				
PIPWS0029	Source Augmentation - Dayboro	2009	Dayboro	$4,000
NEW RESERVOIRS				
PIPWS0002	RES-03, Dayboro LLZ Res No 2 near the existing reservoir site (1.5Ml)	2009/2010	Dayboro	$698,222
PIPWS0003	RES-04, Boundary Road Reservoir No 3 (24Ml)	2010/2012	Petrie/Kallangur	$2,045,140
MAINS				
PIPWS0031	WM-NLC, (500mm x 2800m) Main for feed from North Link Main Connector	2009/2012	Petrie/Kallangur	$3,395,714
PIPWS0032	Flow Modulated Valve - RCC Main Protheroe Road	2009	Petrie/Kallangur	$61,000
PIPWS0006	WM-BA01, (750mm x 2600m) Hughes Road (Boundary Road Res to Old Gympie Road)	2009	Petrie/Kallangur	$3,563,763
PIPWS0007	WM-KW01, (750mm x 1300m) Old Gympie Road (Hughes Road to White Horse Road)	2009	Petrie/Kallangur	$2,500,000
PIPWS0008	WM-WA01, (750mm x 2300m) Old Gympie Road (White Horse Road to Anzac Avenue)	2009	Petrie/Kallangur	$5,552,289
PIPWS0009	WM-KN02, (600mm x 180m) - Hughes Road (Old Gympie Road to Goodwin Road)	2009	Petrie/Kallangur	$416,200
PIPWS0010	WM-OB01, (750 mm x 864m) Kerr Road Main (Old Gympie Road-Balstrup Road)	2009	Petrie/Kallangur	$1,553,504
PIPWS0011	WM-BR01, (750mm x 62m) Boundary Road Reservoir intake Main	2016	Petrie/Kallangur	$138,393
PIPWS0038	WM-BY01, (300 mm x 428m) Anzac Avenue across the Creek to Brays Road	2009	Petrie/Kallangur	$330,000
PIPWS0015	WM-NS02A, (450mm x 911m) North South Arterial Road up to Kinsellas Road East	2009	Petrie/Kallangur	$848,431
PIPWS0033	WM-NS02B, (375mm x 410m) Kinsellas Road East to Future Transport corridor	2010	Petrie/Kallangur	$457,527
PIPWS0016	WM-DG01, (300mm x 408m) Dohles Rocks Road (across Bruce Highway)	2009/2011	Petrie/Kallangur	$425,602
PIPWS0039	WM-KRE, (375mm x 1250m) Water trunk main along Kinsellas Road East	2009/2011	Petrie/Kallangur	$1,286,753
PIPWS0034	WM-MVR, (300mm x 1650m) Water trunk main along Maryvale Road	2009/2011	Petrie/Kallangur	$1,682,677
PIPWS0035	WM-FWC, (300mm x 2300m) Water trunk main for Freshwater Creek development	2009/2011	Petrie/Kallangur	$2,335,920
PIPWS0036	WM-DHN, (300mm x 1220m) Water trunk main along Dohles Rocks Road & Henry Road	2009/2011	Petrie/Kallangur	$1,237,263
PIPWS0037	WM-KRM, (450mm x 120m) Duplication of main from Kallangur Booster Pumps	2017	Petrie/Kallangur	$86,201
PIPWS0019	WM-BR02, (1200 m x 150mm) - Buranda Road Loop	2009/2010	Clear Mountain/Samford	$698,387
PIPWS0028	WM-JM01, (178m x 100mm) - Fire Flow Deficiency Jancy Court	2009/2010	Clear Mountain/Samford	$79,731

[5] Differences between the total value and the sum of the column can occur due to values being displayed without cents. Background calculations including cents are correct.

Project ID	Project Name	Anticipated Commencement of Construction	Service Catchment	NPV - 01 January 2009
PIPWS0022	WM-LR01, (150mm x 1030m) Extension of supply main to reservoir site	2009/2010	Dayboro	$1,423,655
DISINFECTION BOOSTER STATIONS				
PIPWS0024	Disinfection booster system (most likely at Albany Creek LL Res., complex.)	2009/2010	Hills	$2,247,863
SYSTEM LOSS MANAGEMENT				
	System loss management (40% subsidy deducted)	2009/2012	All	$1,693,265
Total				**$34,761,497**

ALBANY CREEK HLZ	CLEAR MTN HLZ	DAYBORO	EATONS HILL HLZ	HILLS HLZ	HILLS LLZ	KALLLANGUR	PETRIE	SAMFORD VILLAGE	SAMFORD DOWNS	STRATHPINE LAWNTON LLZ	DAKABIN	GRIFFIN	MANGO HILL	TOTALS
40	$5,686,707	$1,559,618	$5,118,429	$2,526,840	$9,534,577	$5,360,735	$1,965,028	$426,840	$4,892,007	$17,586,221	$1,168,271	$1,663,195	$1,351,993	$70,198,930
55	$3,041,741	$0	$801,954	$1,305,935	$8,594,251	$10,664,434	$3,437,467	$1,265,724	$2,599,896	$14,333,642	$1,297,127	$1,573,209	$4,705,612	$60,550,496
30	$787,698	$2,148,573	$28,685	$207,594	$1,765,671	$9,993,947	$513,339	$90,986	$18,347	$419,055	$2,415,511	$9,887,279	$5,844,868	$34,761,498
75	**$9,516,146**	**$3,708,190**	**$5,949,068**	**$4,040,368**	**$19,894,500**	**$26,019,116**	**$5,915,834**	**$1,783,550**	**$7,510,251**	**$32,338,917**	**$4,880,910**	**$13,123,683**	**$11,902,473**	**$165,510,923**
26	13,659	3,471	4,387	3,504	29,803	51,270	13,361	1,425	2,806	64,089	12,306	20,507	15,807	258,963
39	$416	$449	$1,167	$721	$320	$105	$147	$300	$1,743	$274	$95	$81	$86	
36	$223	$0	$183	$373	$288	$208	$257	$888	$927	$224	$105	$77	$298	
67	$58	$619	$7	$59	$59	$195	$38	$64	$7	$7	$196	$482	$370	
81	**$697**	**$1,068**	**$1,356**	**$1,153**	**$668**	**$507**	**$443**	**$1,252**	**$2,676**	**$505**	**$397**	**$640**	**$753**	

Schedule A: Demand Factors

Demand factors are calculated based on defined uses within the jurisdiction of each relevant planning scheme, and are therefore unique to each district within the Moreton Bay Regional Council area.

Table A - Demand Factors for Water Supply Infrastructure Contributions

		DEMAND FACTOR	COMMENT
	DEMAND FACTORS FOR MCUs - *PineRiversPlan* Land use		
1	Accommodation Units		Refer Motel
2	Adult Product Shop		Refer Shop
3	Agriculture		Assess Impact on Application
4	Airstrip		Assess Impact on Application
5	Animal Accommodation		Assess Impact on Application
6	Aquaculture		Assess Impact on Application
7	Associated Unit	1.65 EPW/du	JWP 1995 - Multiunit Dwellings (single level, semi-detached)
8	Bed and Breakfast Accommodation		Assess Impact on Application
9	Bulk Garden Supplies	10 EPW/ha	JWP 1995 - Warehouses and Bulk Stores
10	Camping Grounds		Assess Impact on Application
11	Car Depot		Assess Impact on Application
12	Car Park		Assess Impact on Application
13	Caravan/Transportable Home Park	50 EPW/ha	JWP 1995
14	Caretaker's Residence	2.9 EPW/du	Refer Detached House
15	Cattery		Assess Impact on Application
16	Cemetery	2.3 EPW/ha	JWP 1995
17	Child Care Centre	0.10 EPW/licensed child and each staff member at planned capacity	JWP 1995 - Child Care Excluding Kindergartens
18	Commercial Services		Assess Impact on Application
	Video Store		Assess Impact on Application
19	Community Facilities		Assess Impact on Application
20	Concrete Batching Plant		Assess Impact on Application
21	Contractor's Depot	5 EPW/ha	JWP 1995 - Builders Yard and Contractors Yard
22	Crematorium		Assess Impact on Application
23	Dairy		Assess Impact on Application
24	Detached House	2.9 EPW/du	
25	Display Home	2.9 EPW/du	
26	Domestic Storage	2 EPW/Domestic Storage Building	JWP 1995 - Outbuildings
27	Duplex Dwelling	5.8 EPW/duplex	
28	Educational Establishment	0.15 EPW / student and each staff member at planned capacity	Includes Kindergarten
29	Environmental Park	N/A	
30	Estate Sales Office		Refer Office
31	Extractive Industry		Assess Impact on Application
32	Farm Forestry		Assess Impact on Application
33	Fast Food Delivery Service		Assess Impact on Application
34	Food Outlet - Restaurant	0.04 EPW / m^2GFA	
	Drive Through	0.05 EPW / m^2GFA	
35	Funeral Parlour		Assess Impact on Application
36	General Industry		Assess Impact on Application
37	Hardware Shop	0.03 EPW / m^2GFA	
38	Hazardous and Offensive Industry (other than below)		Assess Impact on Application
	Oil Depot & Refinery	5 EPW/ha	JWP 1995 - Oil Depot & Refinery

		DEMAND FACTOR	COMMENT
	DEMAND FACTORS FOR MCUs - *PineRiversPlan* Land use		
39	High Density Multiple Dwelling Units (0.8 floor area ratio)	1.65 EPW/du	JWP 1995 - Multiunit Dwelling (Flats, multilevel)
40	Home Business		Assess Impact on Application
41	Hospital	0.05 EPW / m^2GFA	
42	Hotel	0.04 EPW / m^2GFA	
43	Indoor Entertainment and Sport		Assess Impact on Application
	Squash Courts		Assess Impact on Application
	Tennis Courts		Assess Impact on Application
	Gymnasiums & Other		Assess Impact on Application
44	Infill Housing	2.9 EPW/du	
45	Institution		Assess Impact on Application
46	Intensive Animal Husbandry		Assess Impact on Application
47	Kennels		Assess Impact on Application
48	Local Utilities	N/A	
49	Low Density Multiple Dwelling Units	2.9 EPW/du	
50	Major Telecommunication Facility		Assess Impact on Application
51	Market		Assess Impact on Application
52	Medium Density Multiple Dwelling Units (0.5 floor area ratio)	1.65 EPW/du	
53	Motel		Assess Impact on Application
54	Motor Sport		Assess Impact on Application
55	Night Club		Refer Restaurant
56	Non-Intensive Animal Husbandry		Assess Impact on Application
57	Office (other than below)	0.015 EPW / m^2GFA	
	Bank	0.015 EPW / m^2GFA	
	Doctor / Dentist Surgery	0.023 EPW / m^2GFA	
	Medical Centre	0.025 EPW / m^2GFA	
58	Outdoor Recreation (other than below)		
	Sports Club / Facilities	10 EPW/ha	JWP 1995 - Sports Club / Facilities
	Sportsground and Racecourse	5 EPW/ha	JWP 1995 - Sportsground and Racecourse
	Tennis Courts		Assess Impact on Application
59	Outdoor Sales		Assess Impact on Application
60	Park	N/A	
61	Passenger Terminal		Assess Impact on Application
62	Pensioner Units	1.35 EPW/du	JWP 1995 - Multiunit Dwelling (Flats, multilevel)
63	Place of Worship		Assess Impact on Application
64	Public Utilities		Assess Impact on Application
65	Radio Station		Refer Office
66	Recycling Depot	N/A	
67	Retail Nursery		Assess Impact on Application, but 70-100 EPW/ha would seem reasonable based on real world examples
68	Retirement Village		Assess Impact on Application
69	Road Purposes	N/A	
70	Rural Industry		Assess Impact on Application
71	Salvage Yard		Assess Impact on Application
72	Service Industry		Assess Impact on Application
73	Service Station	0.023 EPW / m^2GFA	
74	Shooting		Assess Impact on Application
75	Shop		
a	Standalone Retail Shop / Convenience Store	0.023 EPW / m^2GFA	
b	Local Shopping Centre (Convenience	0.023 EPW / m^2GFA	

		DEMAND FACTOR	COMMENT
	DEMAND FACTORS FOR MCUs - *PineRiversPlan* Land use		
	Shopping Centre)		
c	Central Business Shopping Centre (incl. Supermarket)	0.023 EPW / m^2GFA	
d	Major Shopping Centre	0.023 EPW / m^2GFA	
76	Showroom (other than below)	0.01 EPW / m^2GFA	
	Fruit and Vegetable store >300m^2	0.025 EPW / m^2GFA	
77	Simulated Conflict		Assess Impact on Application
78	Special Use		Assess Impact on Application
79	Stock Sales Yard		Assess Impact on Application
80	Tourist Cabins		Assess Impact on Application
81	Vehicle Sales	10 EPW/ha	JWP 1995 - Sales Area Outdoors (Dealers and Car and Boats etc)
82	Veterinary Clinic	0.025 EPW / m^2GFA	
83	Veterinary Hospital	0.025 EPW / m^2GFA	
84	Warehouse	10 EPW/ha	JWP 1995 - Warehouses & Bulk Stores
	DEMAND FACTOR FOR RALs		
	Residential A & Future Urban		
	Lot Size ≤1200m^2 – (can accommodate Duplex)	5.8 EPW/lot	15 du/ha developable area
	Lot Size < 1200m^2 - to accommodate Associated Unit	4.55 EPW/lot	15 du/ha developable area
	Lot Size < 1200m^2 - single dwelling	2.9 EPW/lot	15 du/ha developable area
	Residential B & Future Urban		
	Residential B ≤600m^2	4.55 EPW/lot	35 du/ha developable area
	Residential B lots >600m^2	101.5 EPW/ha developable area	35 du/ha developable area
	Special Residential Urban (1250m^2)	4.55 EPW/lot	6 du/ha developable area
	Special Residential Non-Urban	4.55 EPW/lot	1.25 du/ha developable area
	Park Residential	4.55 EPW/lot	1.25 du/ha developable area
	Rural Residential	N/A	N/A
	Future Urban		Refer Residential A & B
	Central Business	30 EPW/ha site area	Water Planning Assumptions
	Commercial	30 EPW/ha site area	Water Planning Assumptions
	Local Business	30 EPW/ha site area	Water Planning Assumptions
	Neighbourhood Facilities	30 EPW/ha site area	Water Planning Assumptions
	Urban Village	30 EPW/ha site area	Water Planning Assumptions
	Village Centre	30 EPW/ha site area	Water Planning Assumptions
	Home Industry	10 EPW/ha site area	Water Planning Assumptions
	Service Industry	15 EPW/ha site area	Water Planning Assumptions
	General Industry	30 EPW/ha site area	Water Planning Assumptions
	Extractive Industry	15 EPW/ha site area	Water Planning Assumptions
	Rural (Coast & Riverlands Locality.)	7.5 EPW/ha site area	Water Planning Assumptions
	Rural (Urban, Major Employment Centre, Catchment, Rural Living, Village, Mt Summit and Forest Localities)	7.5 EPW/ha site area	Water Planning Assumptions
	Conservation	0 EPW/ha site area	Water Planning Assumptions
	Park & Open Space	N/A	Water Planning Assumptions
	Sports & Recreation	15 EPW/ha site area	Water Planning Assumptions
	Special Purposes	15 EPW/ha site area	Water Planning Assumptions

Schedule B: Infrastructure Contribution Rates

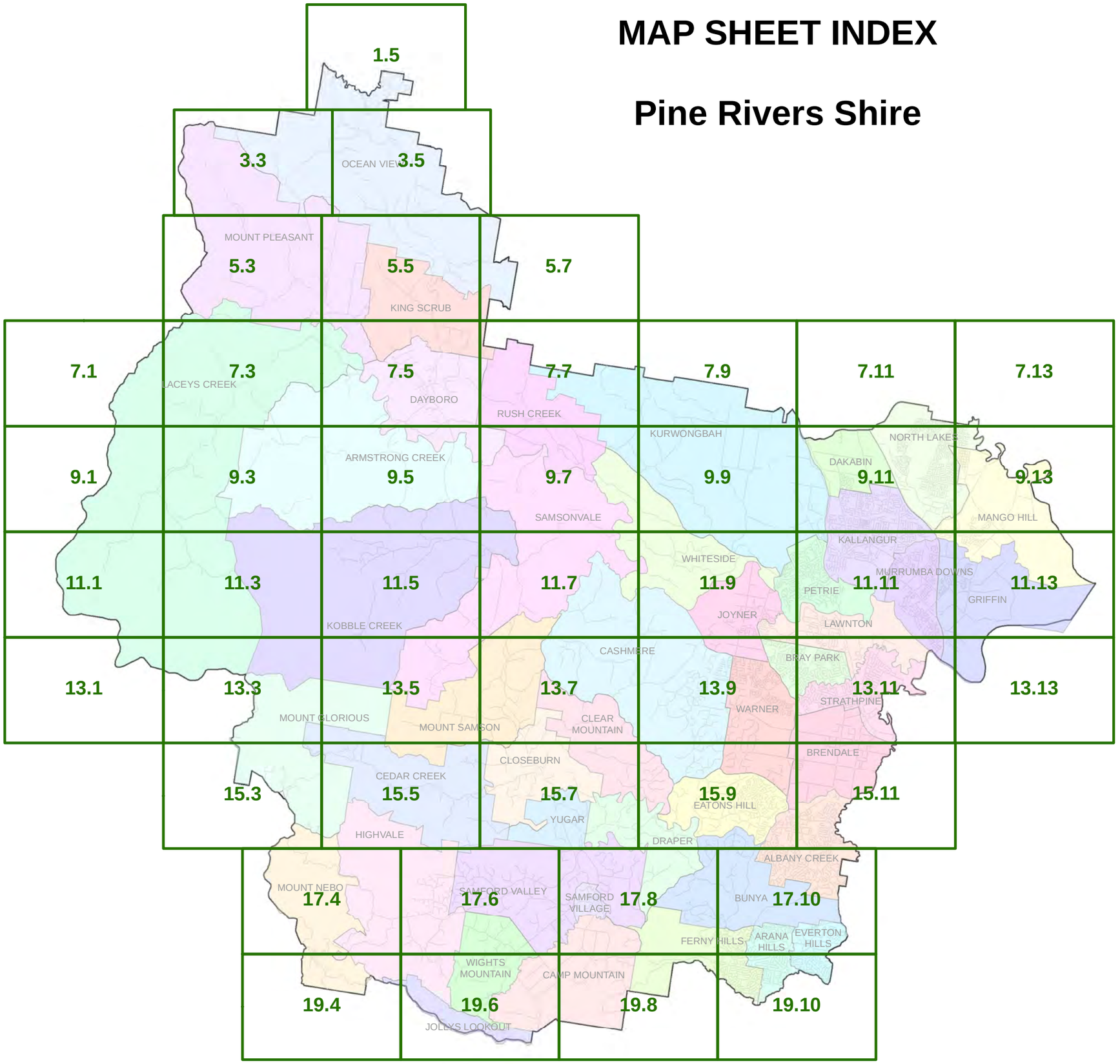
Table B – Water Supply - Infrastructure Contribution Rates (ICR's)

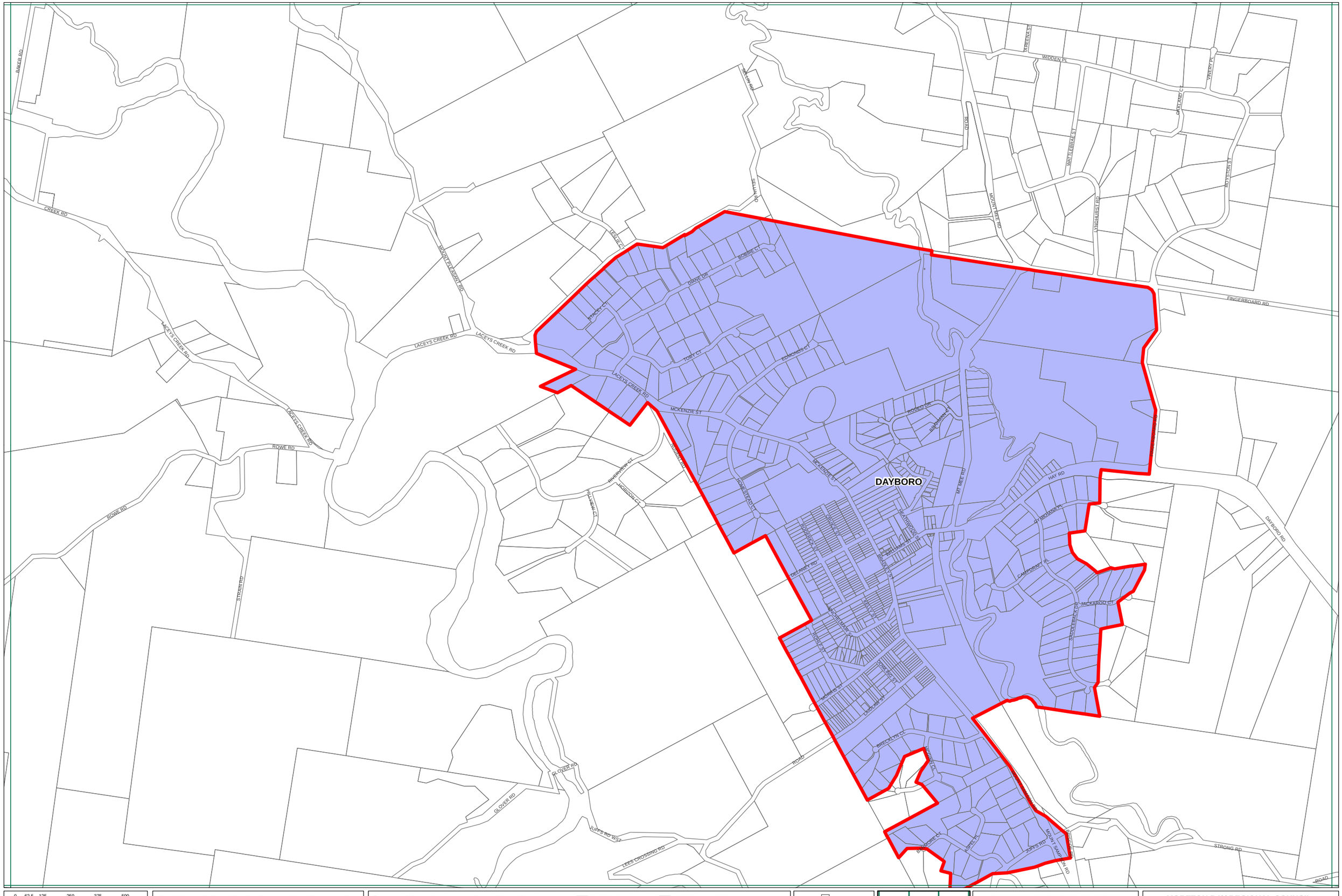
Service Catchment		ICR / ($/EPW)
DAYBORO	DAY	**$1,068**
ALBANY CREEK LLZ	ACL	**$778**
ALBANY CREEK HLZ	ALC	**$881**
CLEAR MTN HLZ	CMH	**$697**
EATONS HILL HLZ	EAH	**$1,356**
HILLS HLZ	HLA	**$1,153**
HILLS LLZ	HLH	**$668**
KALLANGUR	KAL	**$507**
PETRIE	PET	**$443**
SAMFORD VILLAGE	SAM	**$1,252**
SAMFORD DOWNS	SAD	**$2,676**
STRATHPINE LAWNTON LLZ	STR	**$505**
DAKABIN	DAK	**$397**
GRIFFIN	GRN	**$640**
MANGO HILL	MGH	**$753**

Schedule C: Service Catchments

MAP SHEET INDEX

Pine Rivers Shire





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ALBANY CREEK LLZ
CLEAR MOUNTAIN HLZ
DAYBORO
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HILLS HLZ
HILLS LLZ
KALLANGUR
NGC
NORTH LAKES
PETRIE
SAMFORD
SAMFORD DOWNS
STRATHPINE / LAWNTON LLZ

5.3	5.5	5.7
7.3	7.5	7.7
9.3	9.5	9.7

PLANNING SCHEME POLICY PSP22

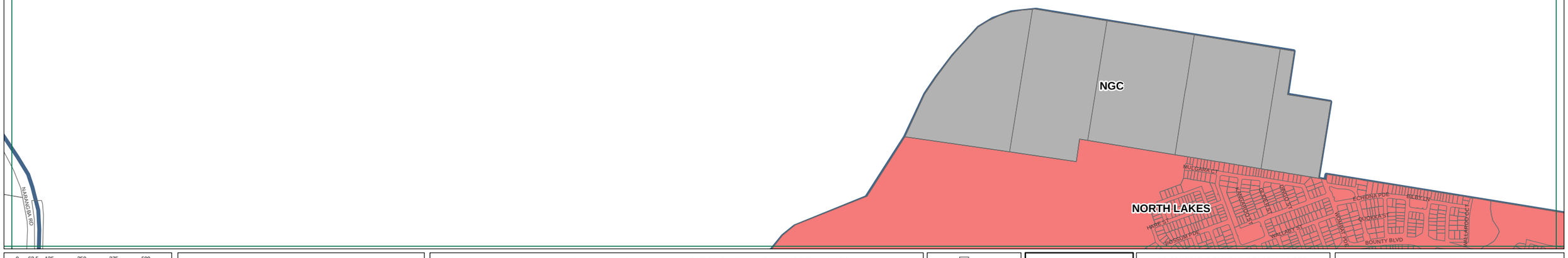
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 7.5



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- PETRIE
- SAMFORD
- SAMFORD DOWNS
- STRATHPINE / LAWNTON LLZ

7.9	**7.11**	7.13
9.9	9.11	9.13
11.9	11.11	11.13

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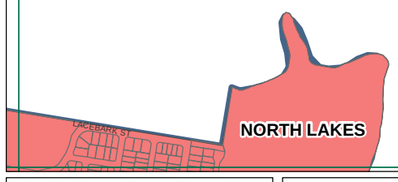
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 7.11



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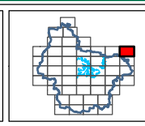

7.11	7.13
9.11	9.13

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DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

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WATER SUPPLY SERVICE CATCHMENTS

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- SAMFORD DOWNS
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7.3	7.5	7.7
9.3	9.5	9.7
11.3	11.5	11.7

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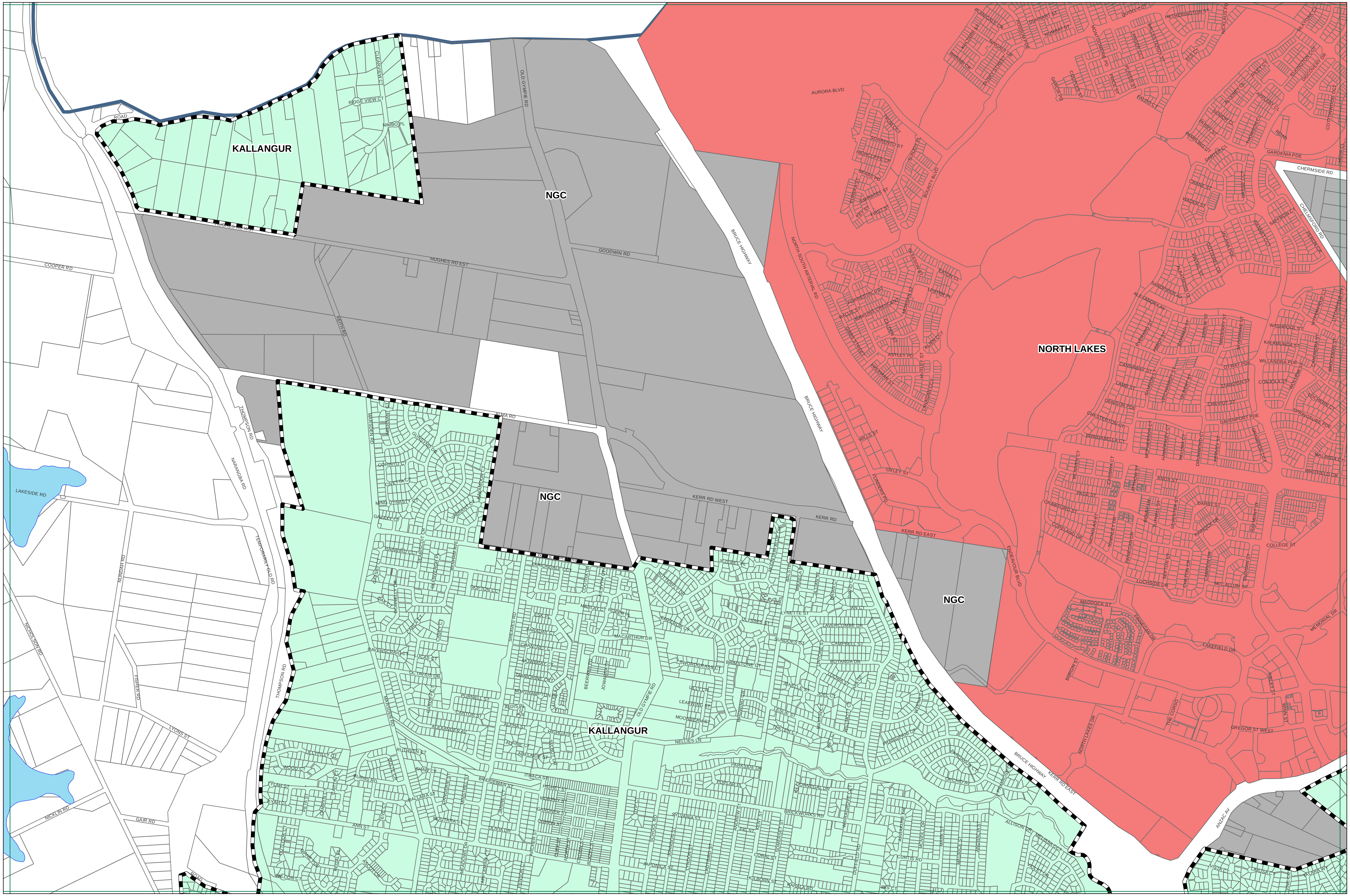
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 9.5



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Regional Water Catchments | **Local Water Catchments**

- DAYBORO
- PINE CENTRAL

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- ALBANY CREEK LLZ
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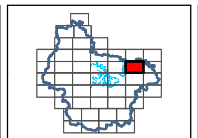

7.9	7.11	7.13
9.9	9.11	9.13
11.9	11.11	11.13

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

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MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 9.11

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7.9	7.11	7.13
9.9	9.11	**9.13**
11.9	11.11	11.13

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Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

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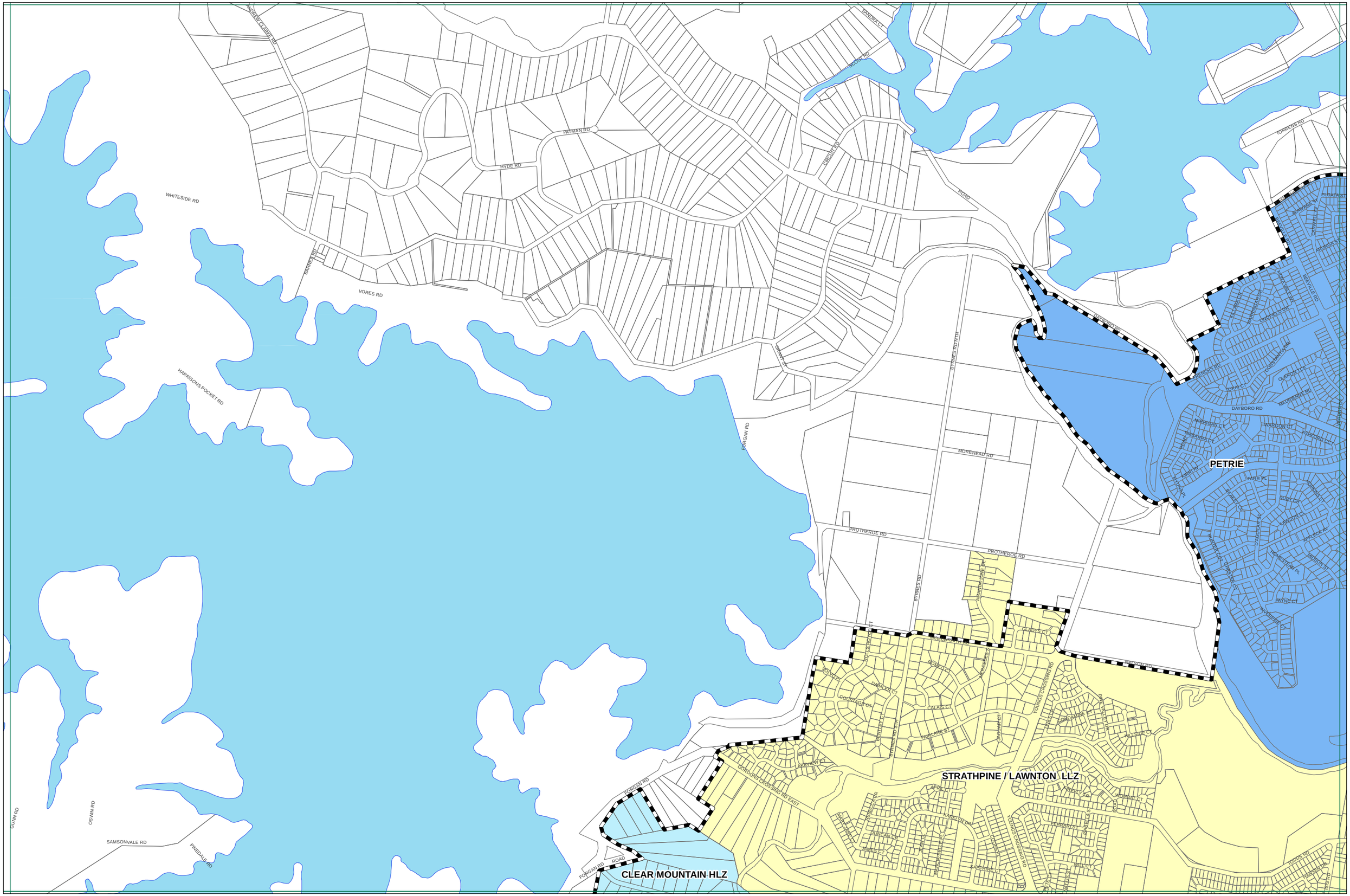

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9.7	9.9	9.11
11.7	11.9	11.11
13.7	13.9	13.11

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Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

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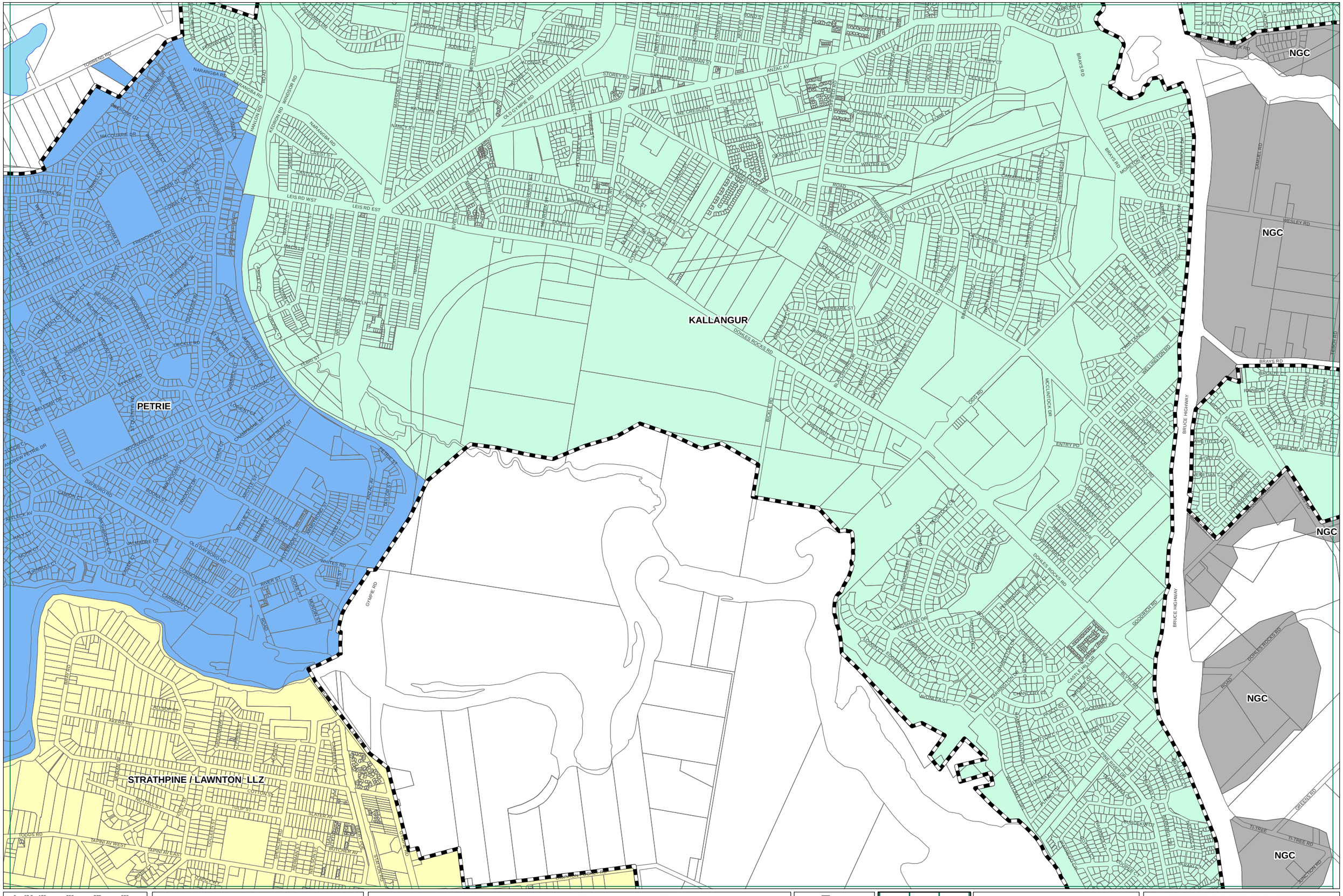

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9.9	9.11	9.13
11.9	**11.11**	11.13
13.9	13.11	13.13

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WATER SUPPLY SERVICE CATCHMENTS

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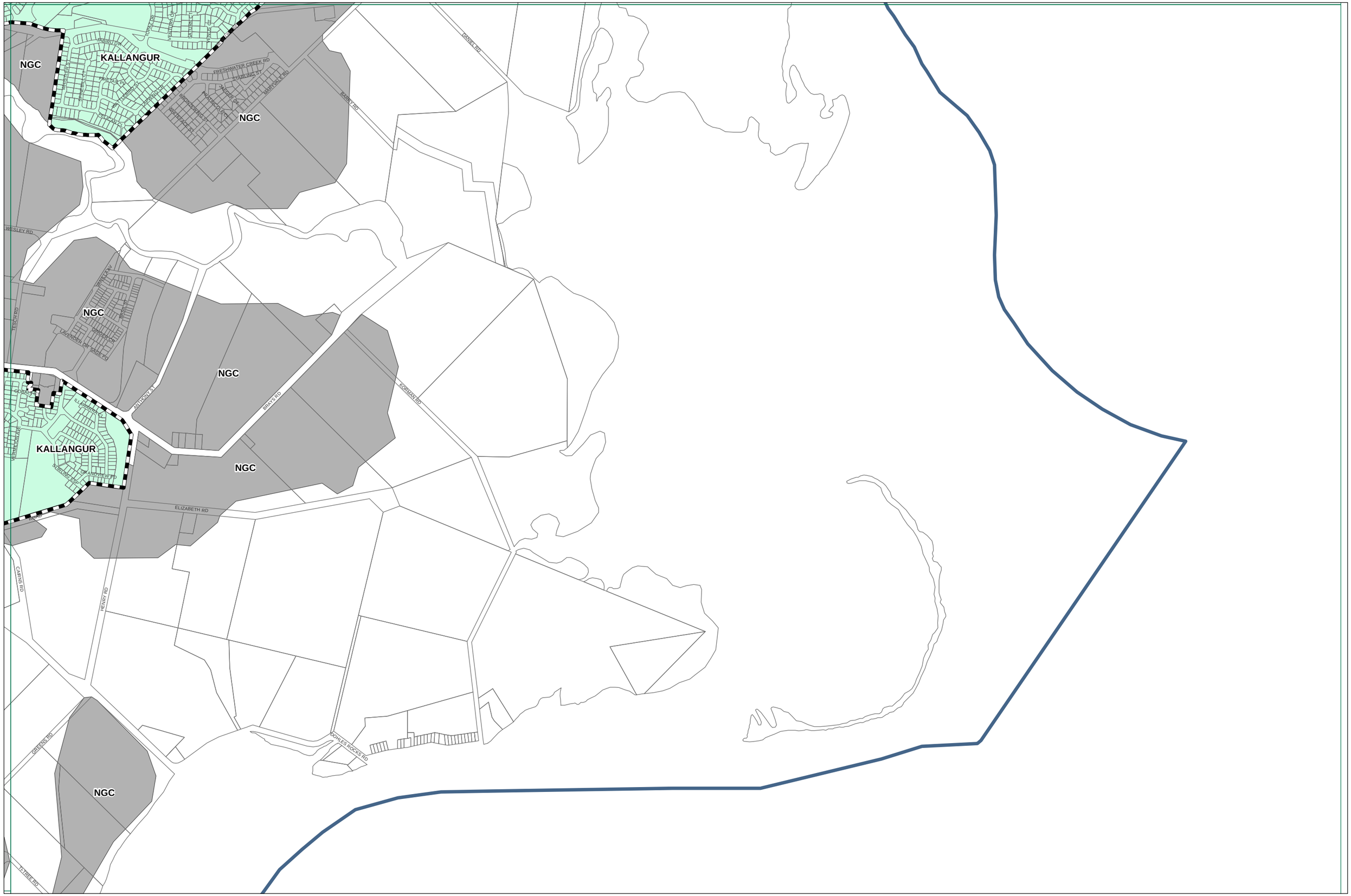

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11.11	**11.13**
13.11	13.13

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WATER SUPPLY SERVICE CATCHMENTS

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NGC	PETRIE	
SAMFORD	SAMFORD DOWNS	
STRATHPINE / LAWNTON LLZ		

11.5	11.7	11.9
13.5	13.7	13.9
15.5	15.7	15.9

PLANNING SCHEME POLICY PSP22

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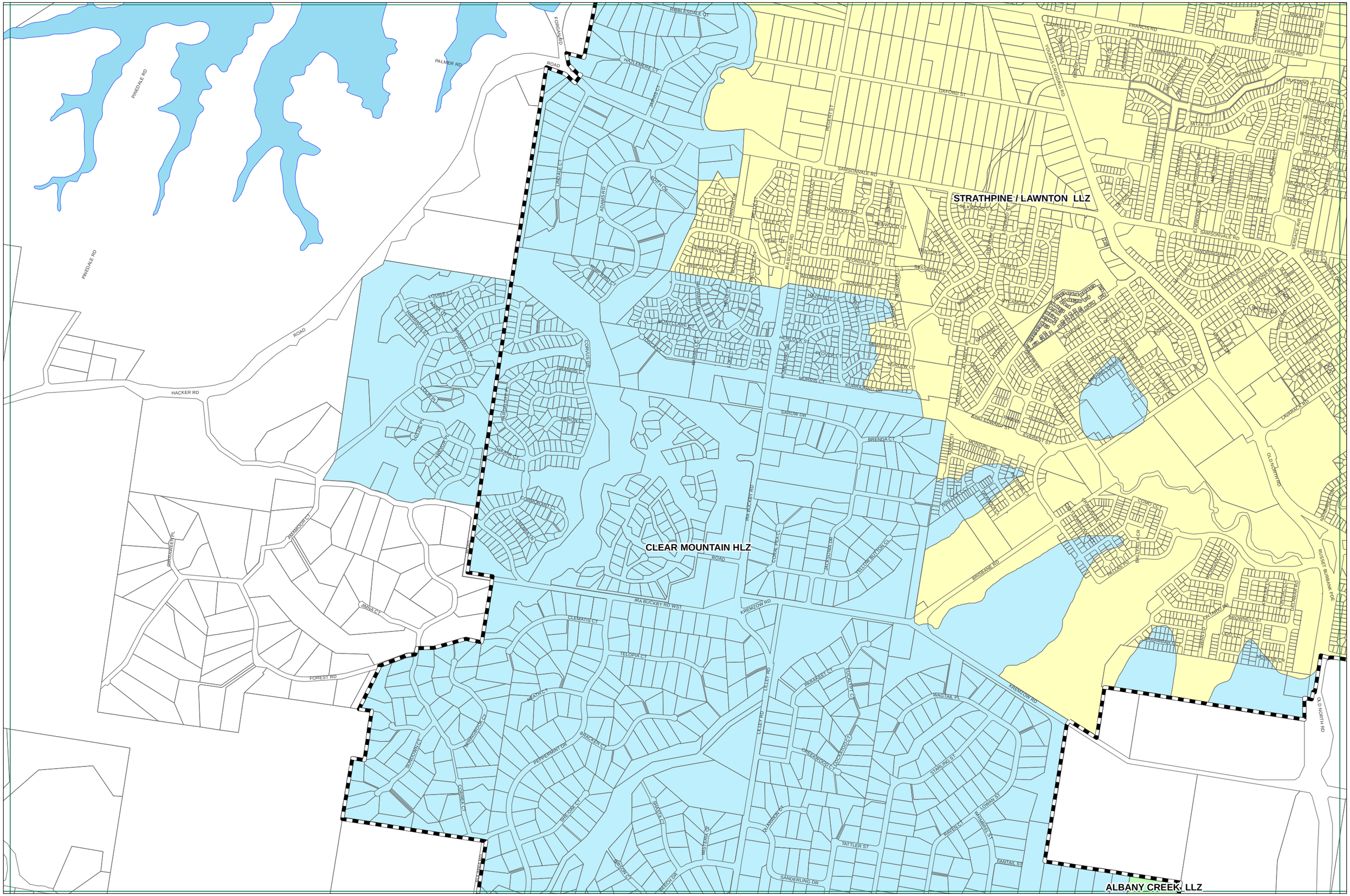
WATER SUPPLY SERVICE CATCHMENTS

Map Number 13.7



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11.7	11.9	11.11
13.7	13.9	13.11
15.7	15.9	15.11

PLANNING SCHEME POLICY PSP22

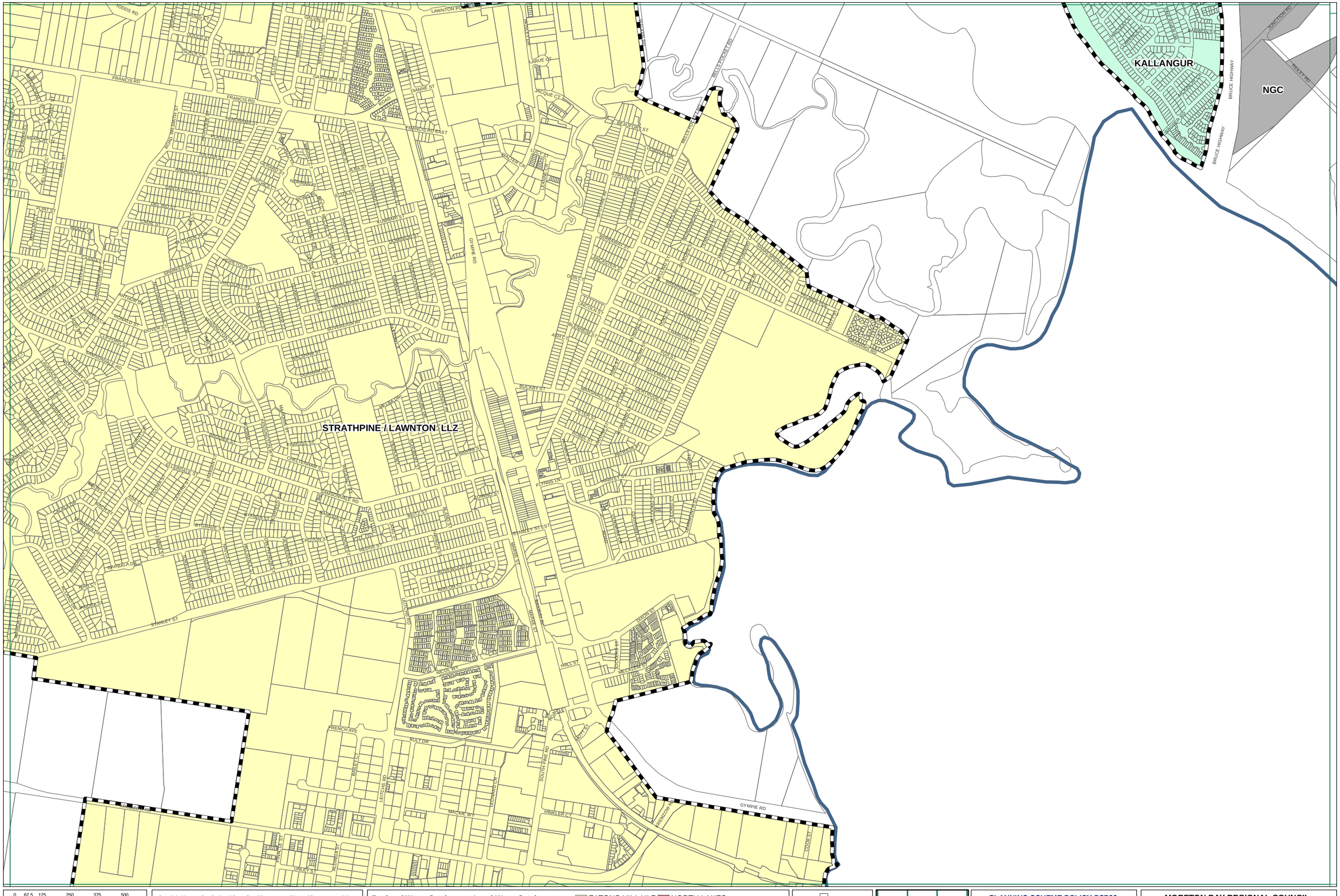
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 13.9



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11.9	11.11	11.13
13.9	13.11	13.13
15.9	15.11	

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

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WATER SUPPLY SERVICE CATCHMENTS

Map Number 13.11

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Metres

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11.11	11.13
13.11	13.13

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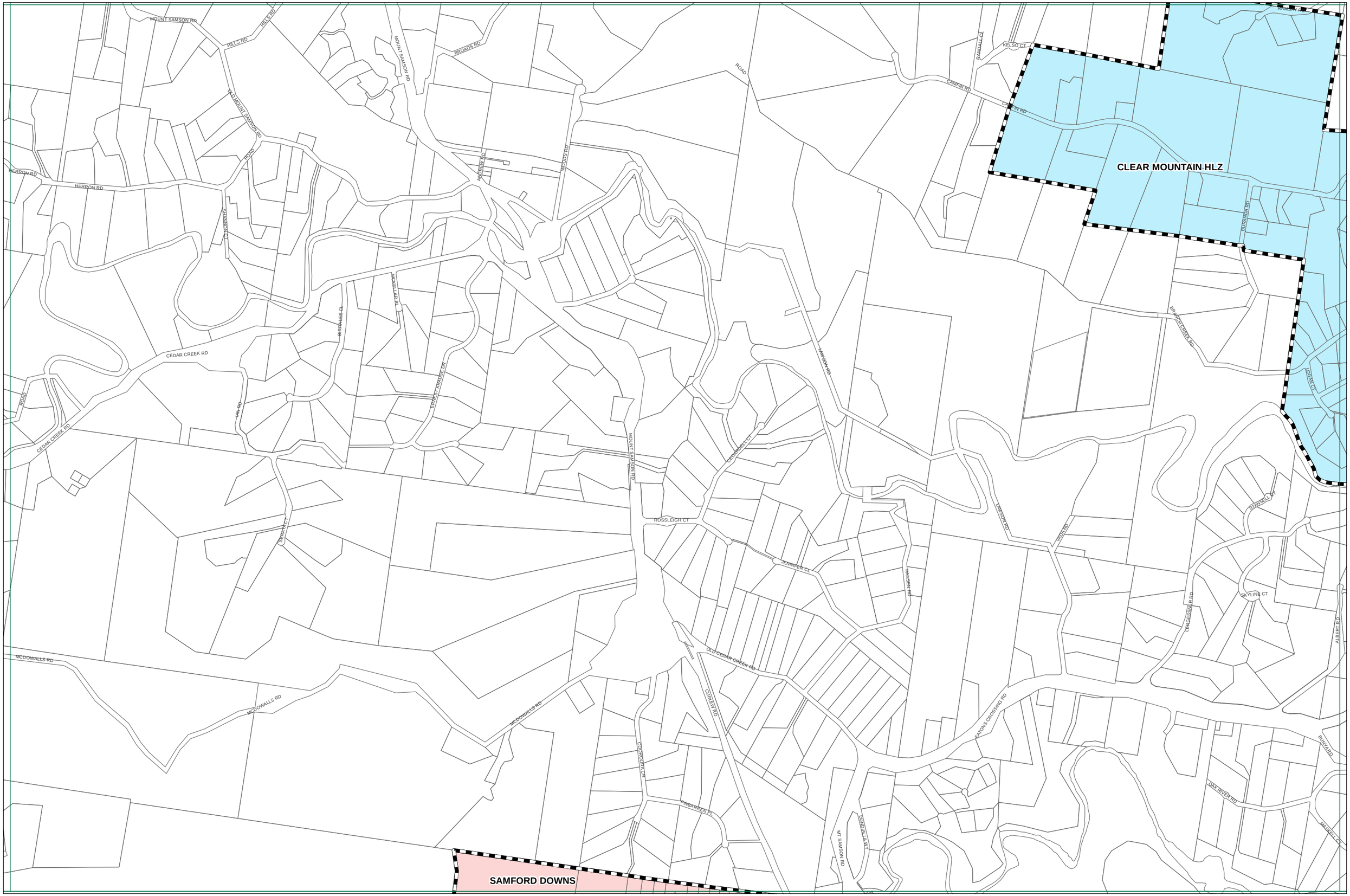
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 13.13



0 62.5 125 250 375 500

Metres

Regional Water Catchments
DAYBORO
PINE CENTRAL

Local Water Catchments
ALBANY CREEK HLZ
ALBANY CREEK LLZ
CLEAR MOUNTAIN HLZ
DAYBORO
EATONS HILL HLZ
HILLS HLZ
HILLS LLZ
KALLANGUR
NGC
NORTH LAKES
PETRIE
SAMFORD
SAMFORD DOWNS
STRATHPINE / LAWNTON LLZ

13.5	13.7	13.9
15.5	15.7	15.9
17.4	17.6	17.8

PLANNING SCHEME POLICY PSP22

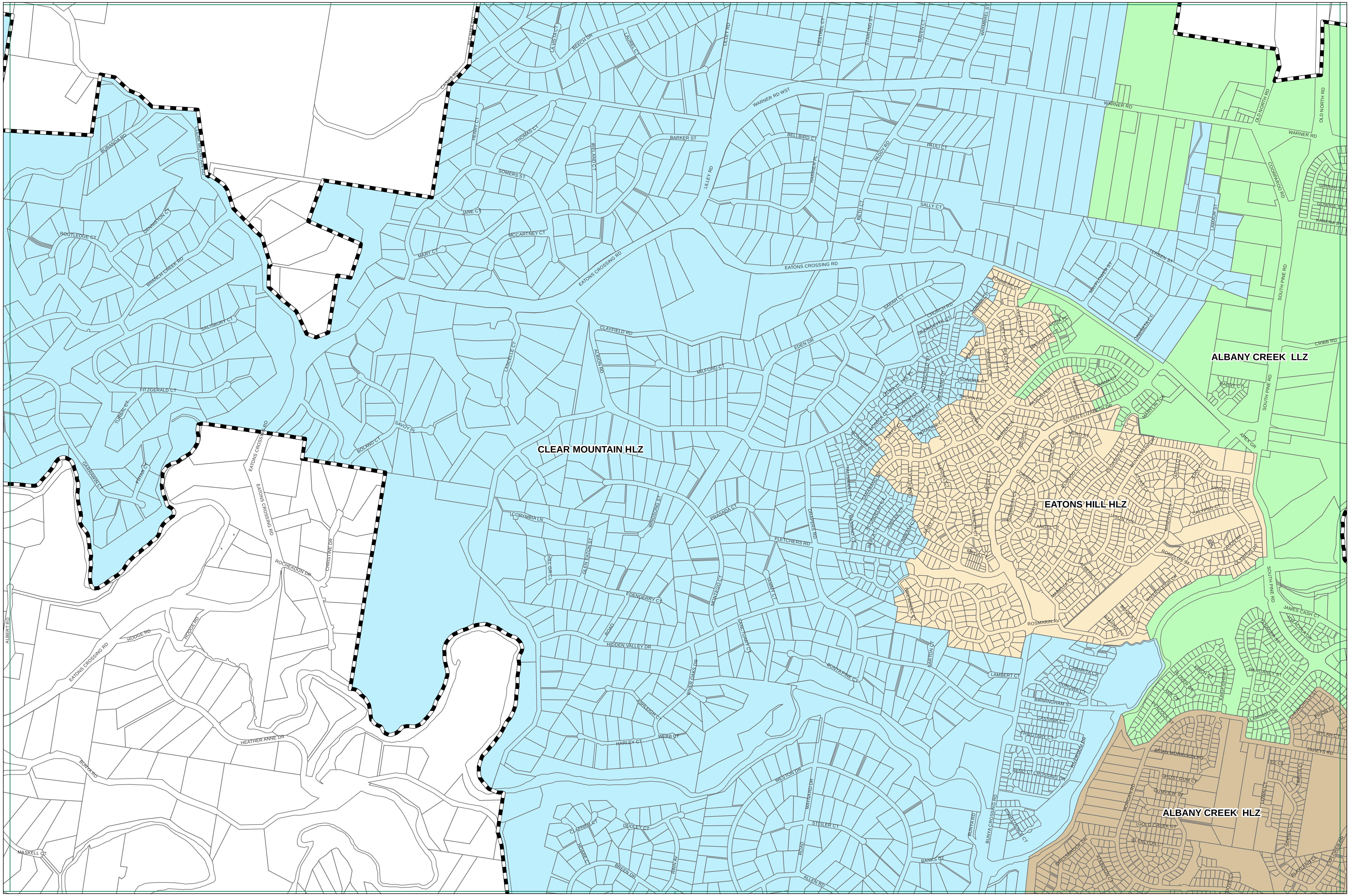
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 15.7



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Metres

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Regional Water Catchments
- DAYBORO
- PINE CENTRAL

Local Water Catchments
- ALBANY CREEK HLZ
- ALBANY CREEK LLZ
- CLEAR MOUNTAIN HLZ
- DAYBORO
- EATONS HILL HLZ
- HILLS HLZ
- HILLS LLZ
- KALLANGUR
- NGC
- NORTH LAKES
- PETRIE
- SAMFORD
- SAMFORD DOWNS
- STRATHPINE / LAWNTON LLZ

13.7	13.9	13.11
15.7	15.9	15.11
17.6	17.8	17.10

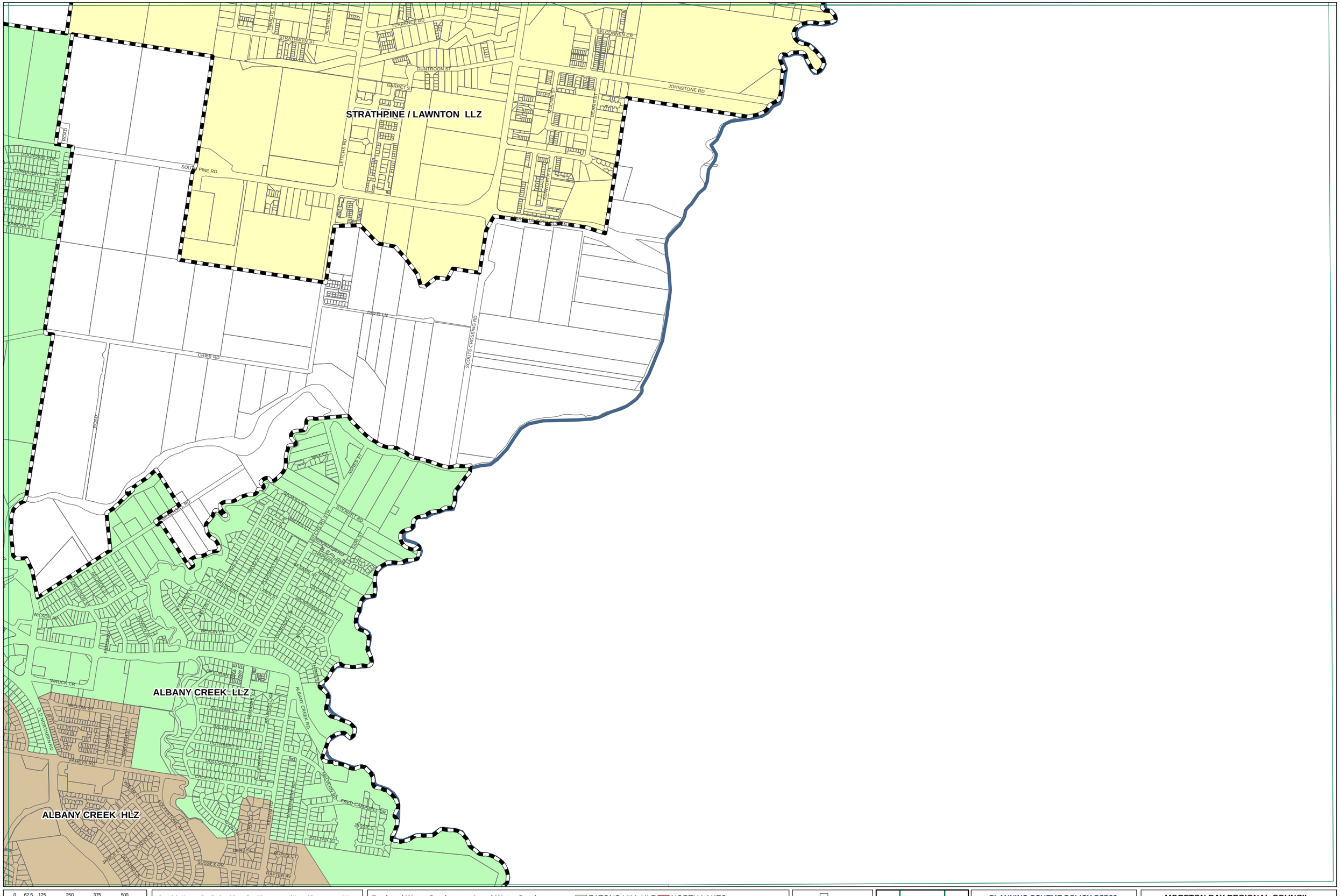
PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire
WATER SUPPLY SERVICE CATCHMENTS

Map Number 15.9



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Regional Water Catchments
- DAYBORO
- PINE CENTRAL

Local Water Catchments
- ALBANY CREEK HLZ
- ALBANY CREEK LLZ
- CLEAR MOUNTAIN HLZ
- DAYBORO
- EATONS HILL HLZ
- HILLS HLZ
- HILLS LLZ
- KALLANGUR
- NGC
- NORTH LAKES
- PETRIE
- SAMFORD
- SAMFORD DOWNS
- STRATHPINE / LAWNTON LLZ

13.9	13.11	13.13
15.9	15.11	

PLANNING SCHEME POLICY PSP22

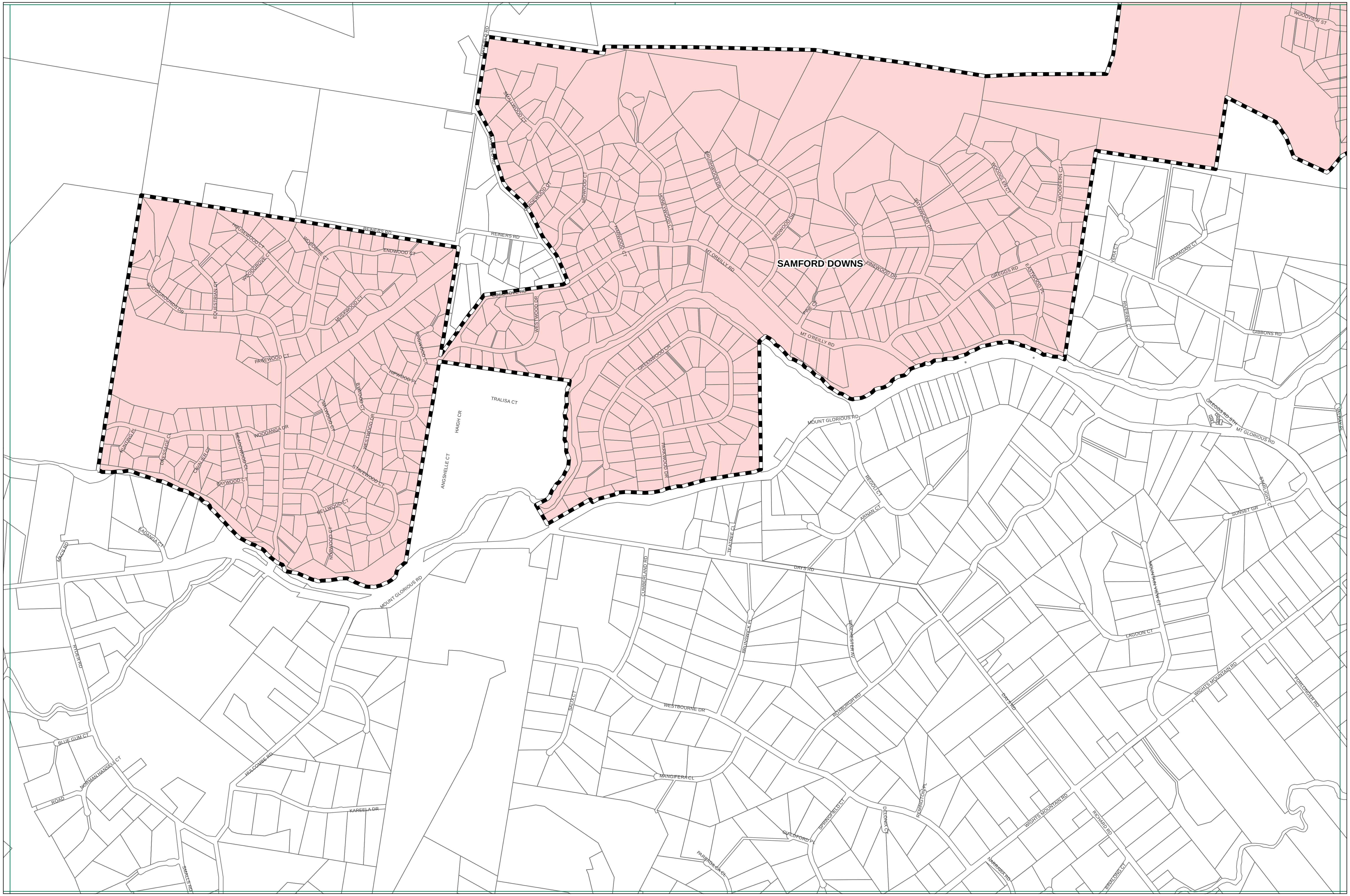
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 15.11



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Regional Water Catchments Local Water Catchments

- DAYBORO
- PINE CENTRAL
- ALBANY CREEK HLZ
- ALBANY CREEK LLZ
- CLEAR MOUNTAIN HLZ
- DAYBORO
- EATONS HILL HLZ
- HILLS HLZ
- HILLS LLZ
- KALLANGUR
- NGC
- NORTH LAKES
- PETRIE
- SAMFORD
- SAMFORD DOWNS
- STRATHPINE / LAWNTON LLZ

15.3	15.5	15.7	15.9
17.4	17.6	17.8	
19.4	19.6	19.8	

PLANNING SCHEME POLICY PSP22

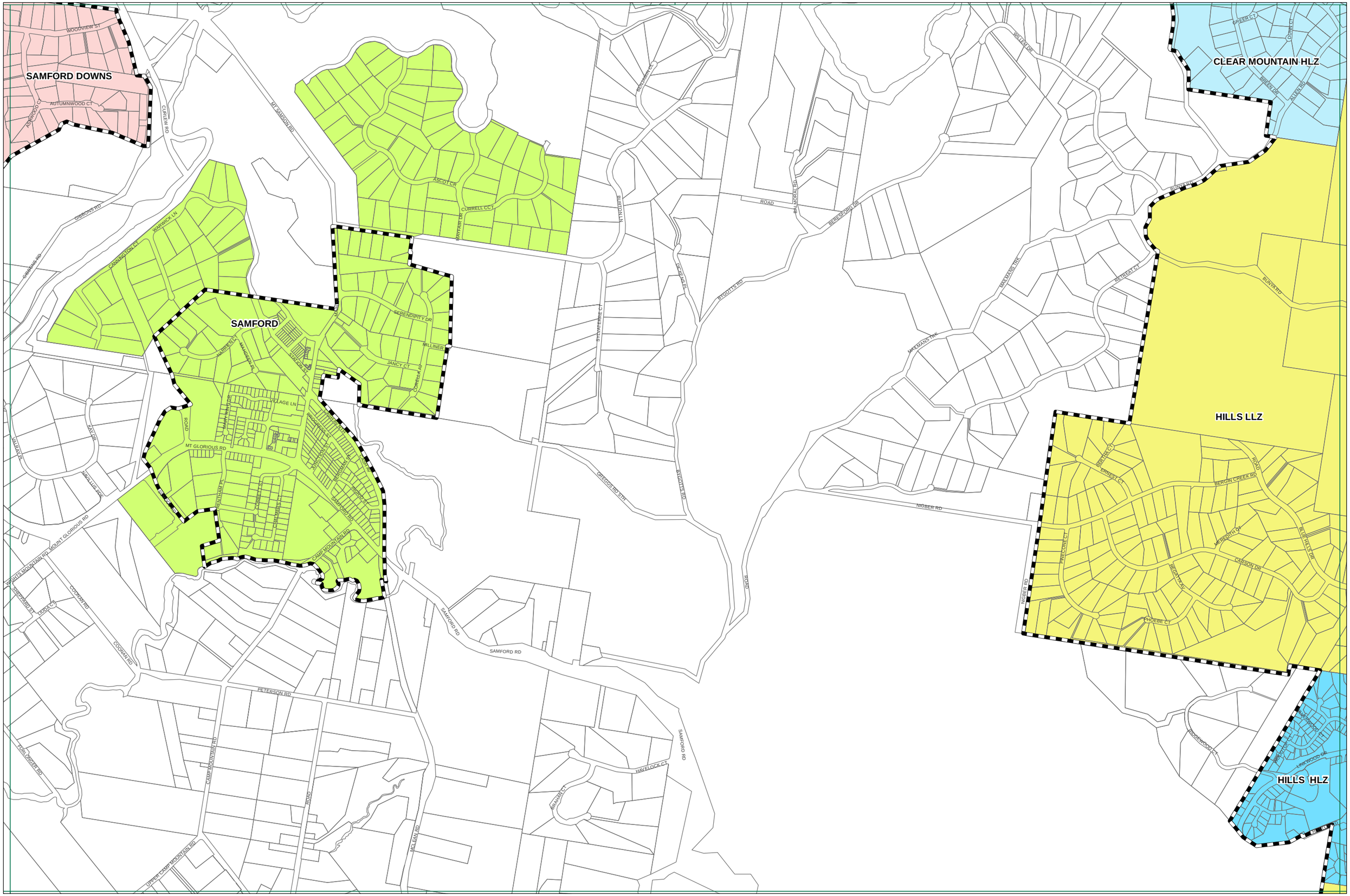
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 17.6



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Regional Water Catchments
- DAYBORO
- PINE CENTRAL

Local Water Catchments
- ALBANY CREEK HLZ
- ALBANY CREEK LLZ
- CLEAR MOUNTAIN HLZ
- DAYBORO
- EATONS HILL HLZ
- HILLS HLZ
- HILLS LLZ
- KALLANGUR
- NGC
- NORTH LAKES
- PETRIE
- SAMFORD
- SAMFORD DOWNS
- STRATHPINE / LAWNTON LLZ

15.5	15.7	15.9
17.6	**17.8**	17.10
19.6	19.8	19.10

PLANNING SCHEME POLICY PSP22

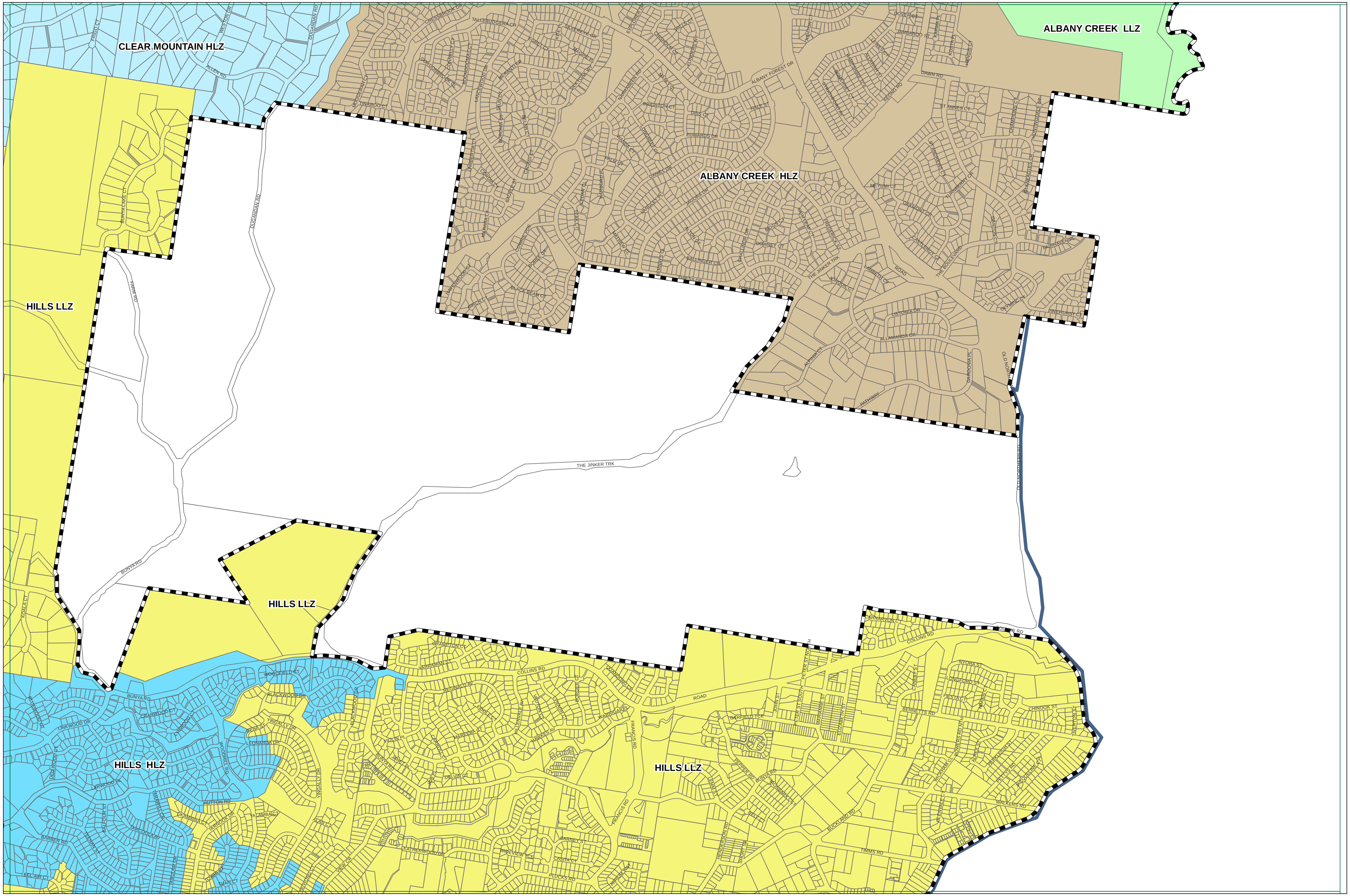
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 17.8



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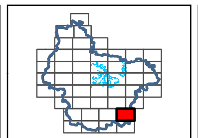
Regional Water Catchments Local Water Catchments

- DAYBORO
- PINE CENTRAL
- ALBANY CREEK HLZ
- ALBANY CREEK LLZ
- CLEAR MOUNTAIN HLZ
- DAYBORO
- EATONS HILL HLZ
- HILLS HLZ
- HILLS LLZ
- KALLANGUR
- NGC
- NORTH LAKES
- PETRIE
- SAMFORD
- SAMFORD DOWNS
- STRATHPINE / LAWNTON LLZ



15.7	15.9	15.11
17.6	17.8	17.10
19.6	19.8	19.10

PLANNING SCHEME POLICY PSP22

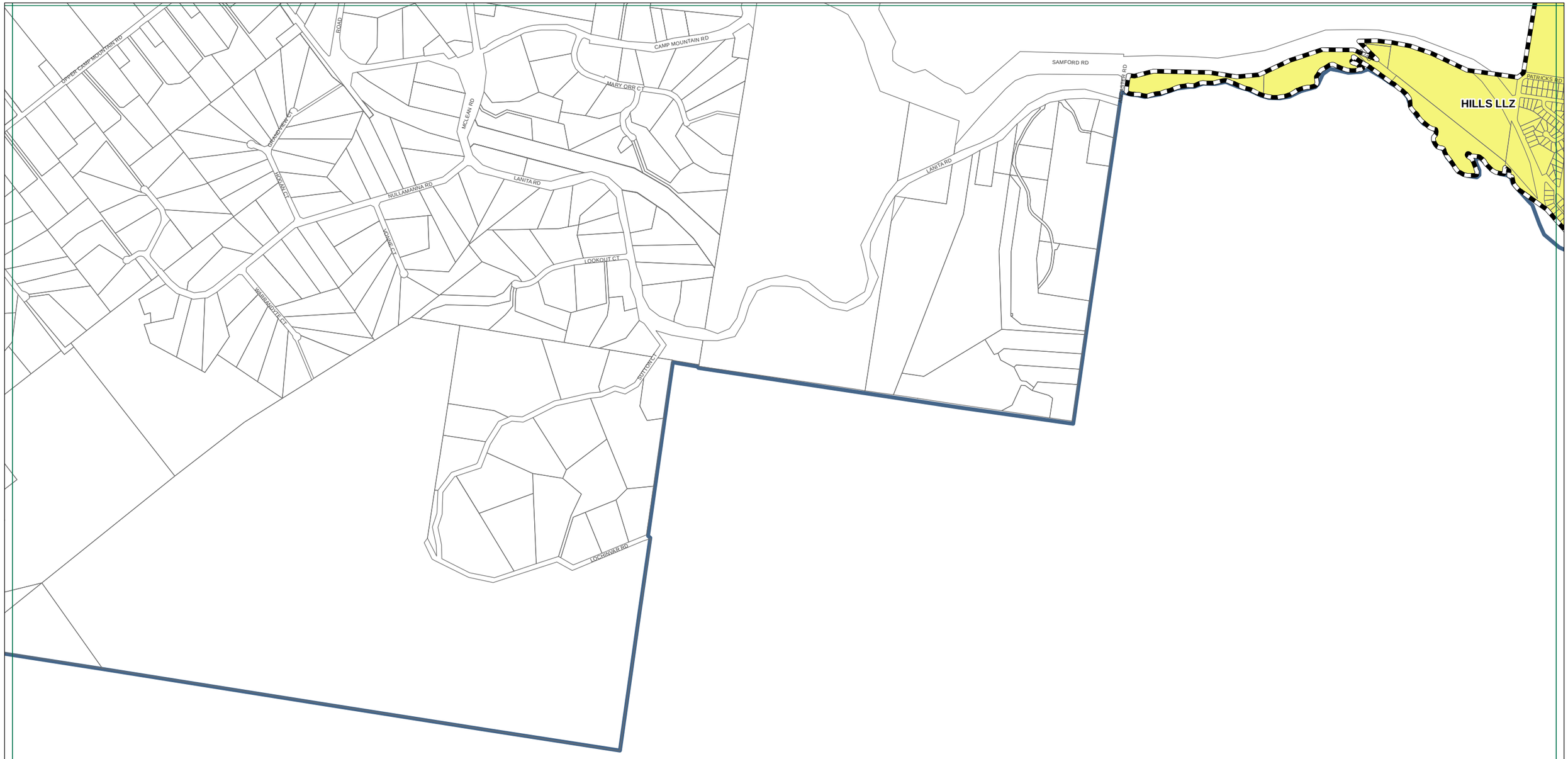
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 17.10



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Regional Water Catchments
- DAYBORO
- PINE CENTRAL

Local Water Catchments
- ALBANY CREEK HLZ
- ALBANY CREEK LLZ
- CLEAR MOUNTAIN HLZ
- DAYBORO
- EATONS HILL HLZ
- HILLS HLZ
- HILLS LLZ
- KALLANGUR
- NGC
- NORTH LAKES
- PETRIE
- SAMFORD
- SAMFORD DOWNS
- STRATHPINE / LAWNTON LLZ

	15.7	15.9
17.6	17.8	17.10
19.6	**19.8**	19.10

PLANNING SCHEME POLICY PSP22

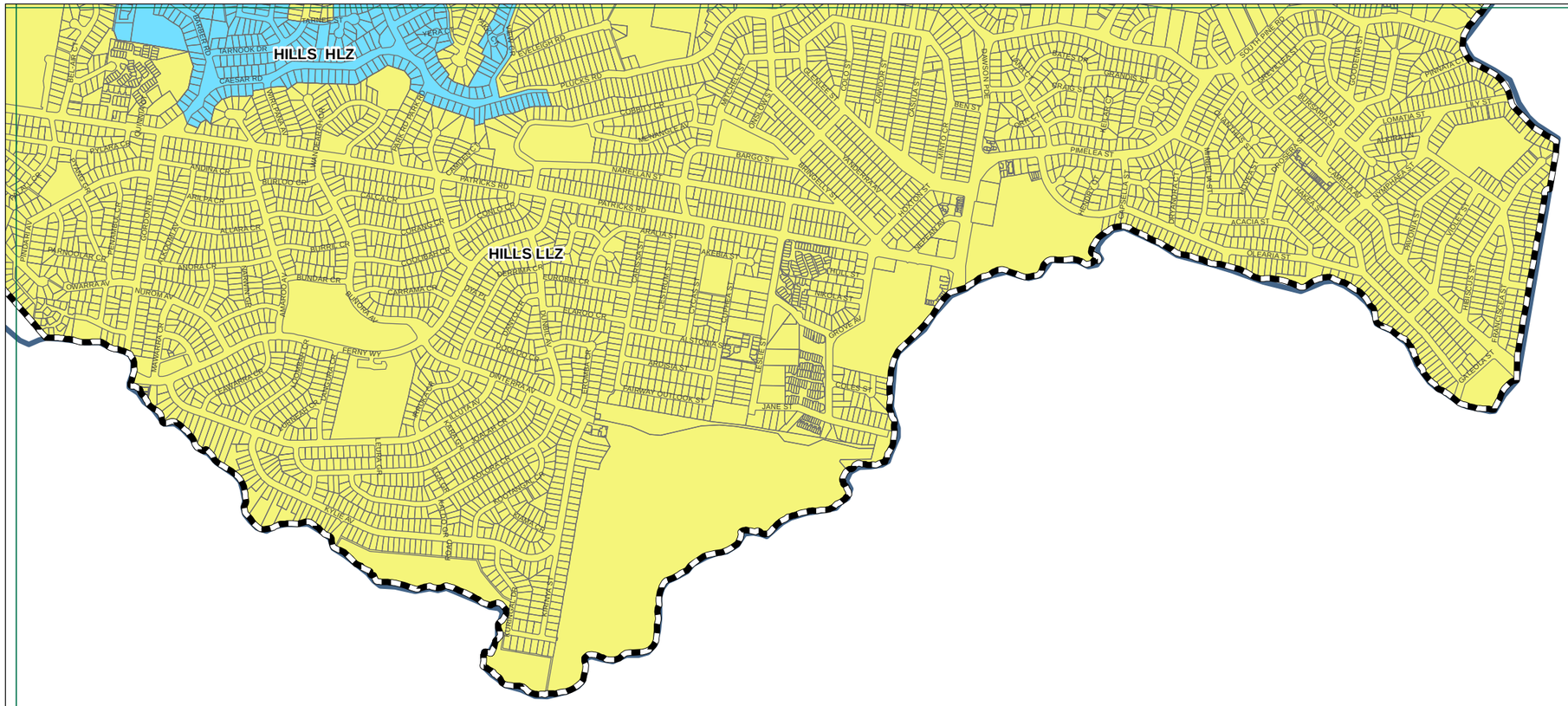
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY SERVICE CATCHMENTS

Map Number 19.8



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Regional Water Catchments
- DAYBORO
- PINE CENTRAL

Local Water Catchments
- ALBANY CREEK HLZ
- ALBANY CREEK LLZ
- CLEAR MOUNTAIN HLZ
- DAYBORO
- EATONS HILL HLZ
- HILLS HLZ
- HILLS LLZ
- KALLANGUR
- NGC
- NORTH LAKES
- PETRIE
- SAMFORD
- SAMFORD DOWNS
- STRATHPINE / LAWNTON LLZ

19.10

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

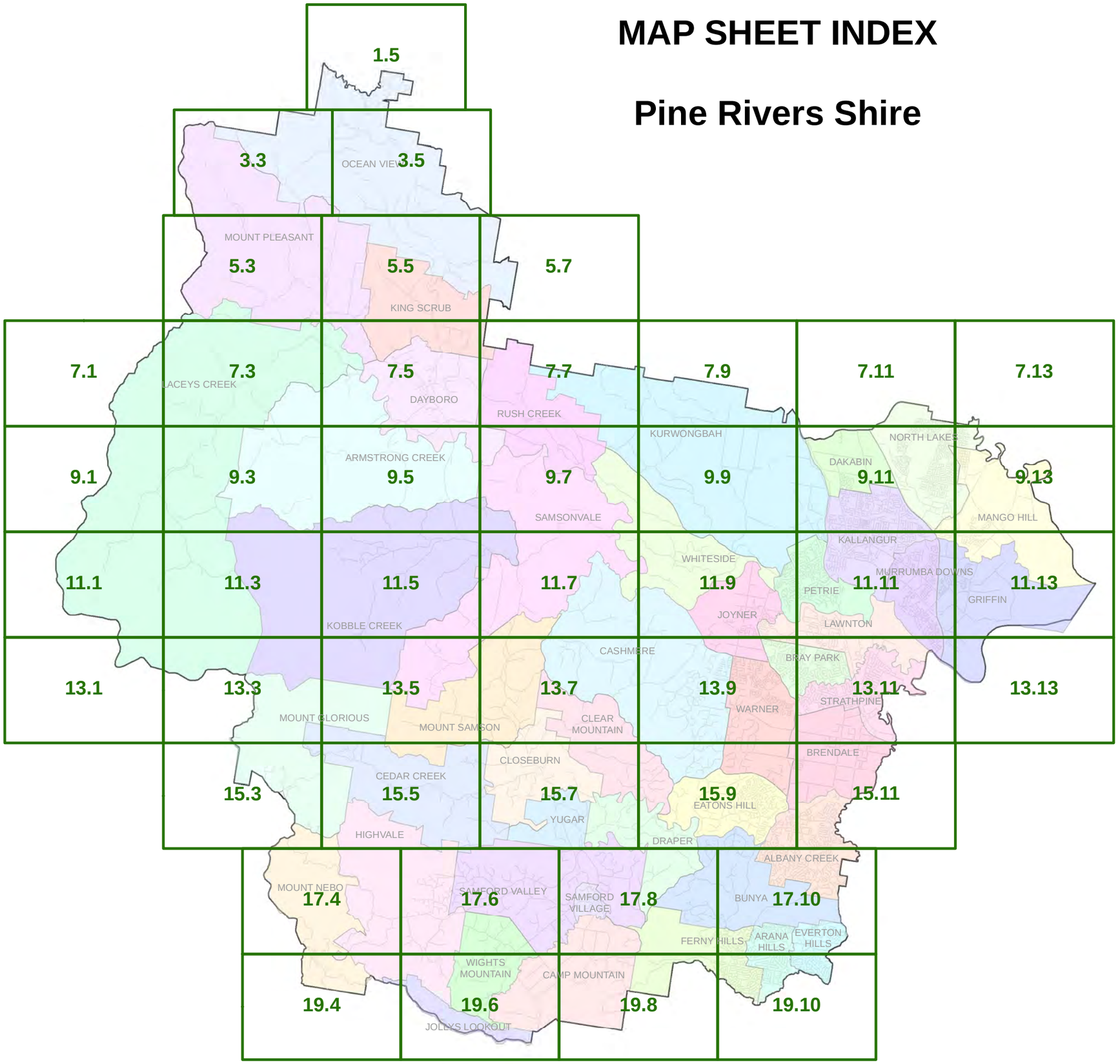
WATER SUPPLY SERVICE CATCHMENTS

Map Number 19.10

Schedule D: Network Assets

MAP SHEET INDEX

Pine Rivers Shire



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WATER ROUTE
PINE WM PIPES
Water Treatment Plants
Existing Bulk Meters
Lake Kurwongbah Facilities
Existing Water Pumps
Existing Reservoirs
Future Water Mains
Future Water Pumps
Future Water Reservoirs

5.3	5.5	5.7
7.3	7.5	7.7
9.3	9.5	9.7

PLANNING SCHEME POLICY PSP22

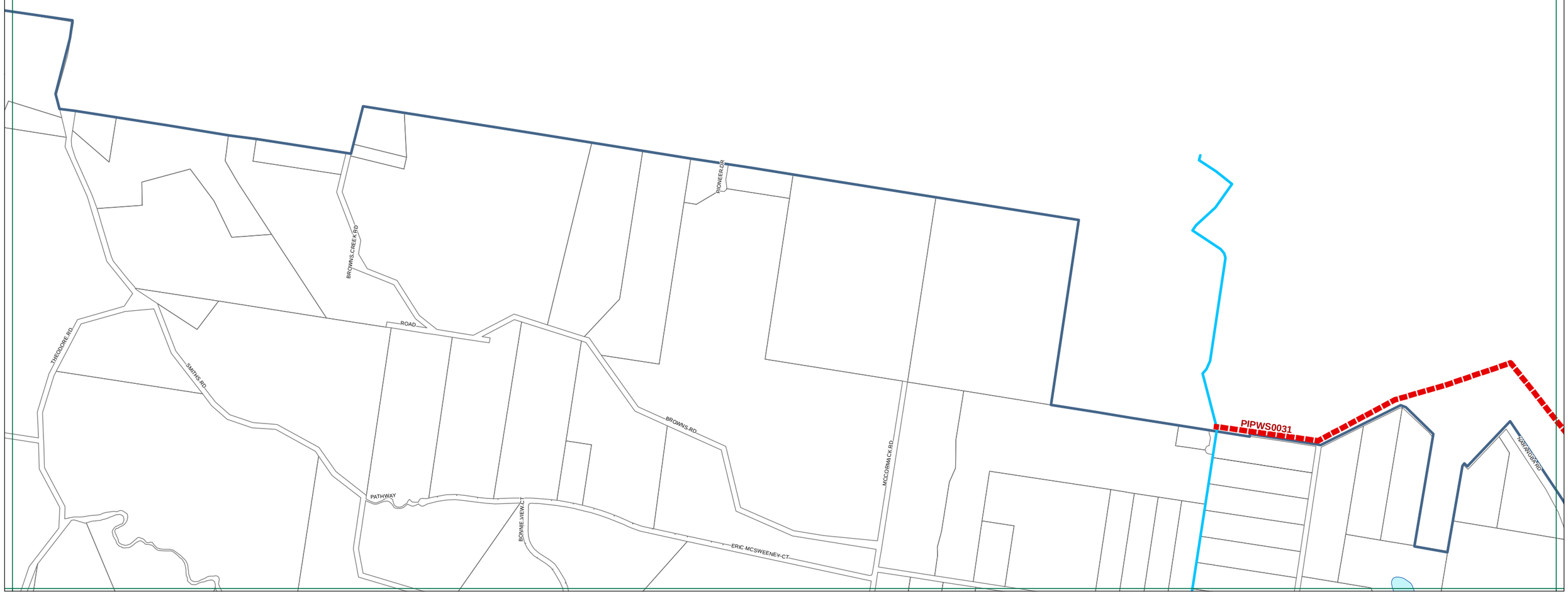
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 7.5



0 62.5 125 250 375 500

Metres

- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

5.7		
7.7	7.9	7.11
9.7	9.9	9.11

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 7.9

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WATER ROUTE
PINE WM PIPES
Water Treatment Plants
Existing Bulk Meters
Lake Kurwongbah Facilities
Existing Water Pumps
Existing Reservoirs
Future Water Mains
Future Water Pumps
Future Water Reservoirs

7.9	7.11	7.13
9.9	9.11	9.13

PLANNING SCHEME POLICY PSP22

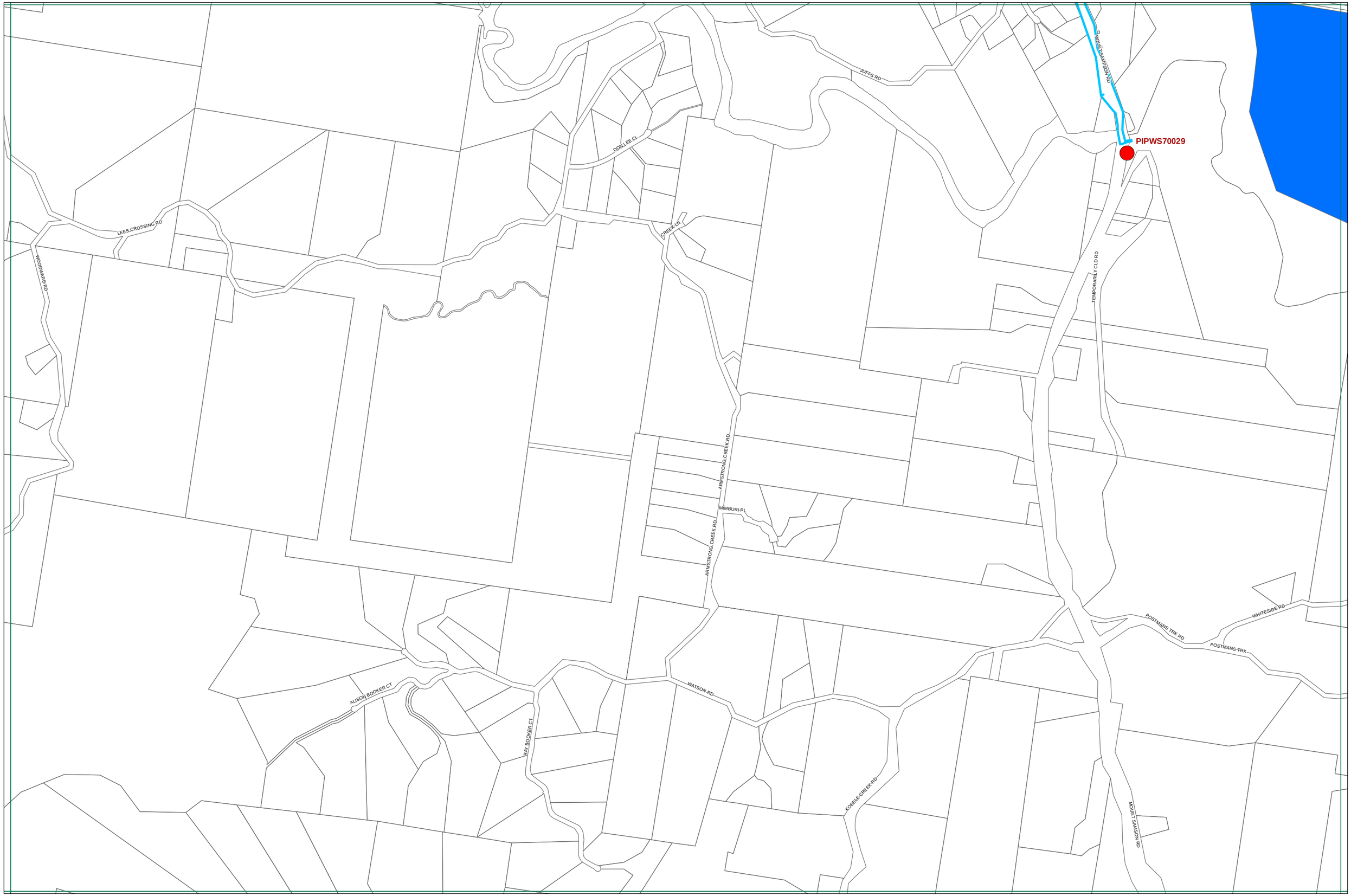
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 7.11



0 62.5 125 250 375 500

Metres

- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

7.3	7.5	7.7
9.3	9.5	9.7
11.3	11.5	11.7

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 9.5

0 62.5 125 250 375 500

Metres

- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

7.5	7.7	7.9
9.5	9.7	9.9
11.5	11.7	11.9

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 9.7

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- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

7.7	7.9	7.11
9.7	9.9	9.11
11.7	11.9	11.11

PLANNING SCHEME POLICY PSP22

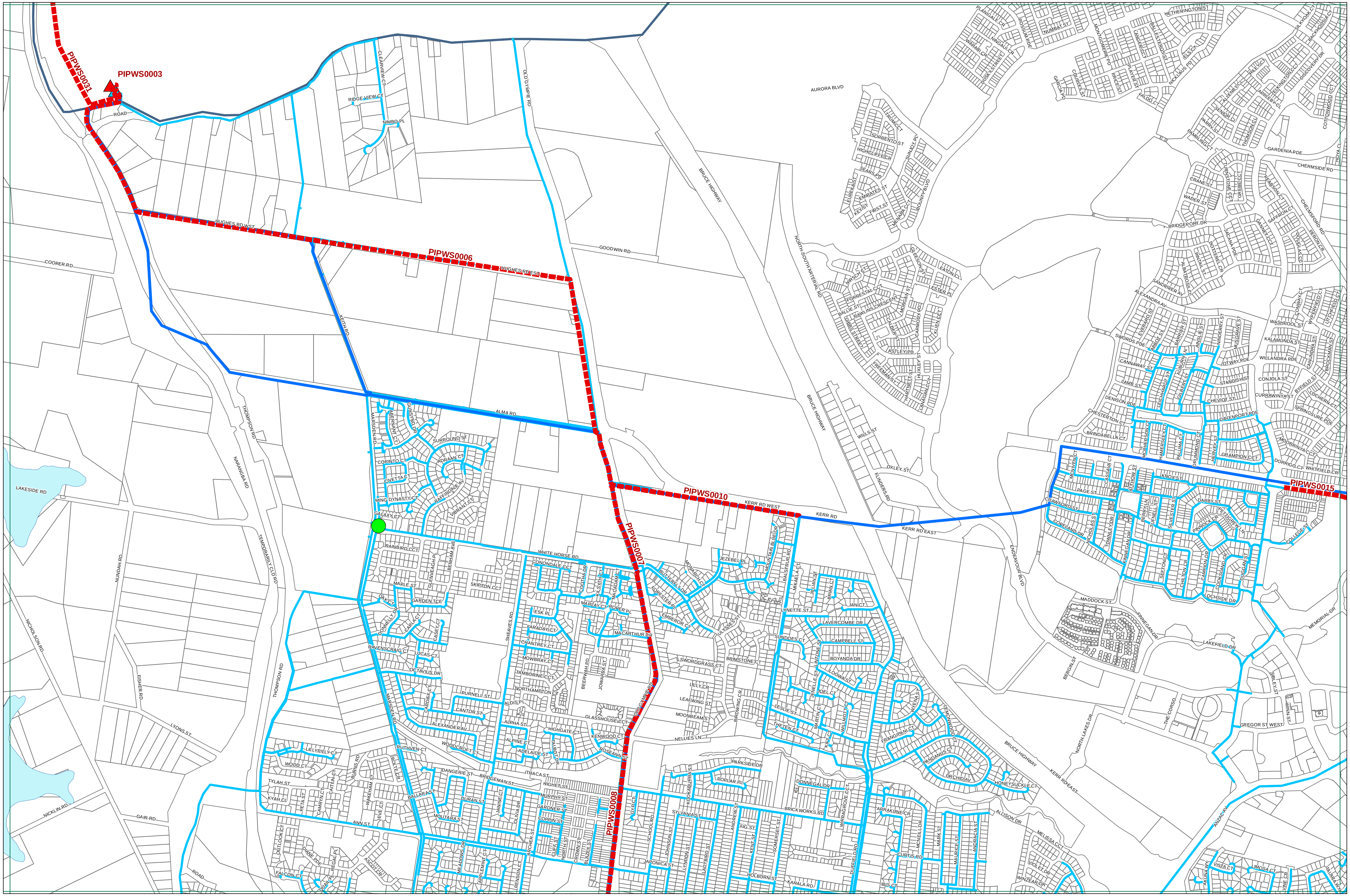
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 9.9



0	62.5	125	250	375	500

Metres

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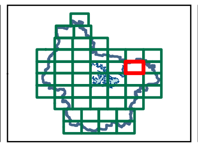
- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs



7.9	7.11	7.13
9.9	9.11	9.13
11.9	11.11	11.13

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 9.11

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- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

7.9	7.11	7.13
9.9	9.11	9.13
	11.11	11.13

PLANNING SCHEME POLICY PSP22

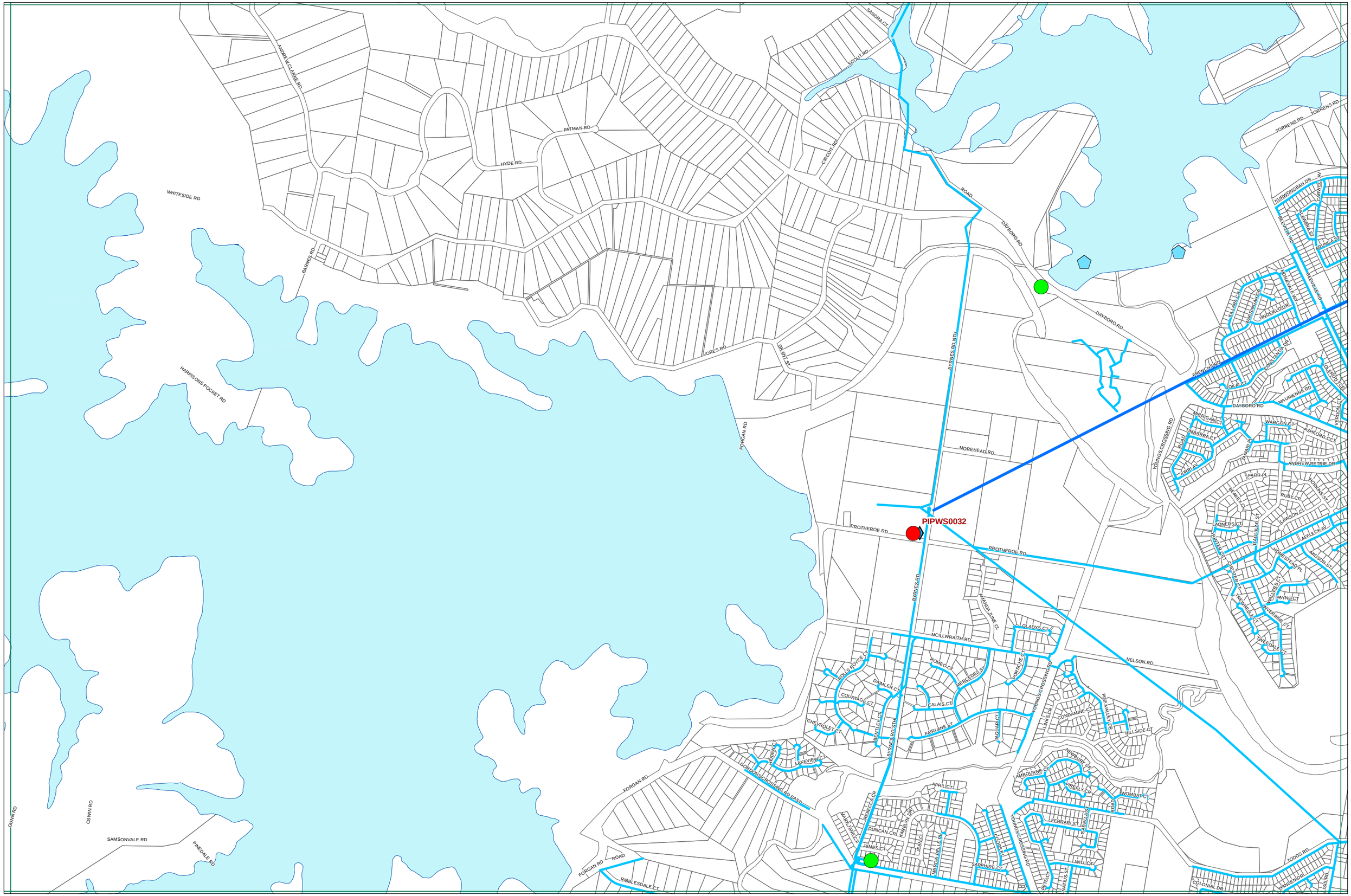
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 9.13



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WATER ROUTE
PINE WM PIPES
Water Treatment Plants
Existing Bulk Meters
Lake Kurwongbah Facilities
Existing Water Pumps
Existing Reservoirs
Future Water Mains
Future Water Pumps
Future Water Reservoirs

9.7	9.9	9.11
11.7	11.9	11.11
13.7	13.9	13.11

PLANNING SCHEME POLICY PSP22

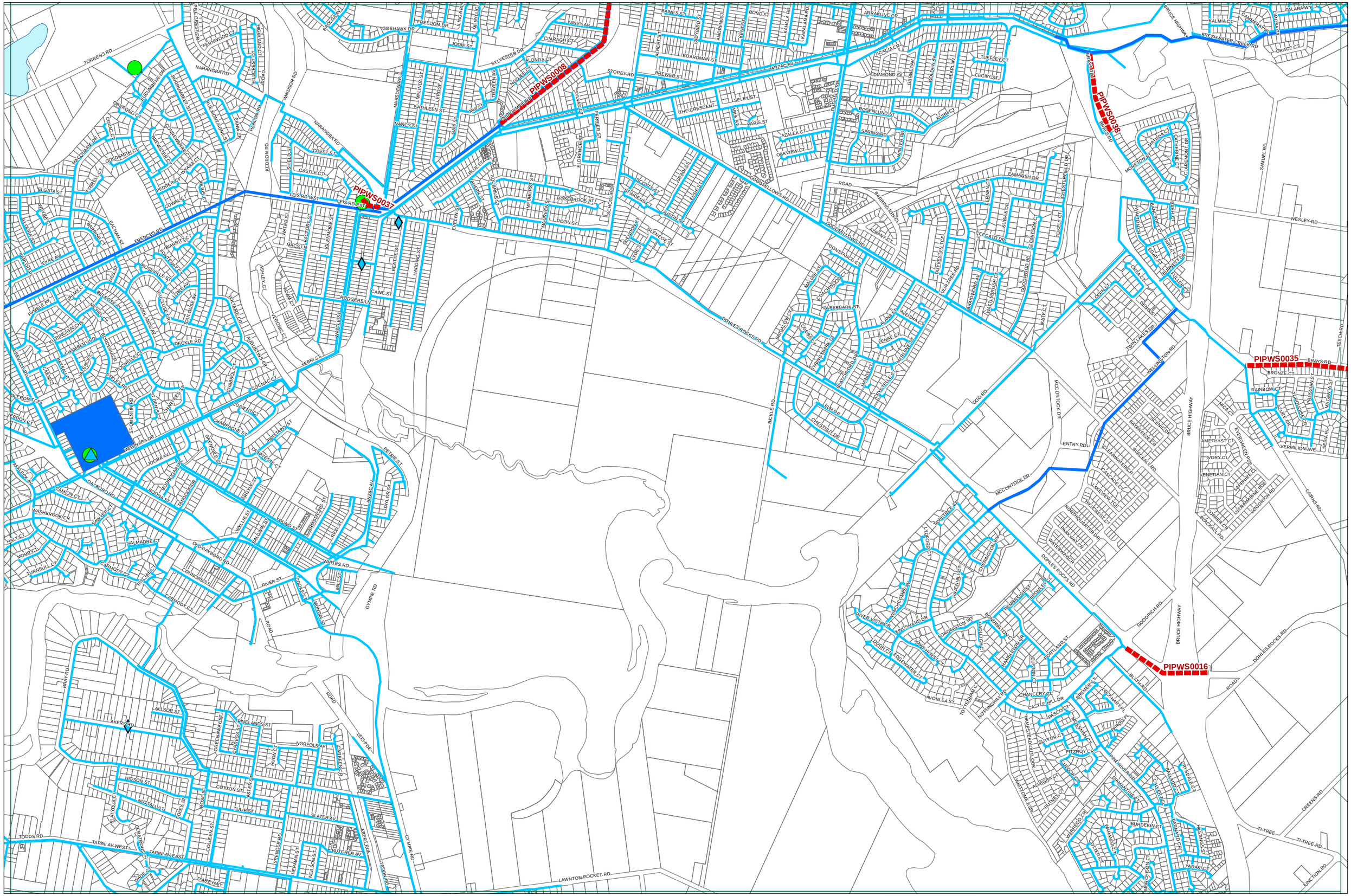
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 11.9



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- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

9.9	9.11	9.13
11.9	11.11	11.13
13.9	13.11	13.13

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 11.11

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- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

11.11	11.13
13.11	13.13

PLANNING SCHEME POLICY PSP22

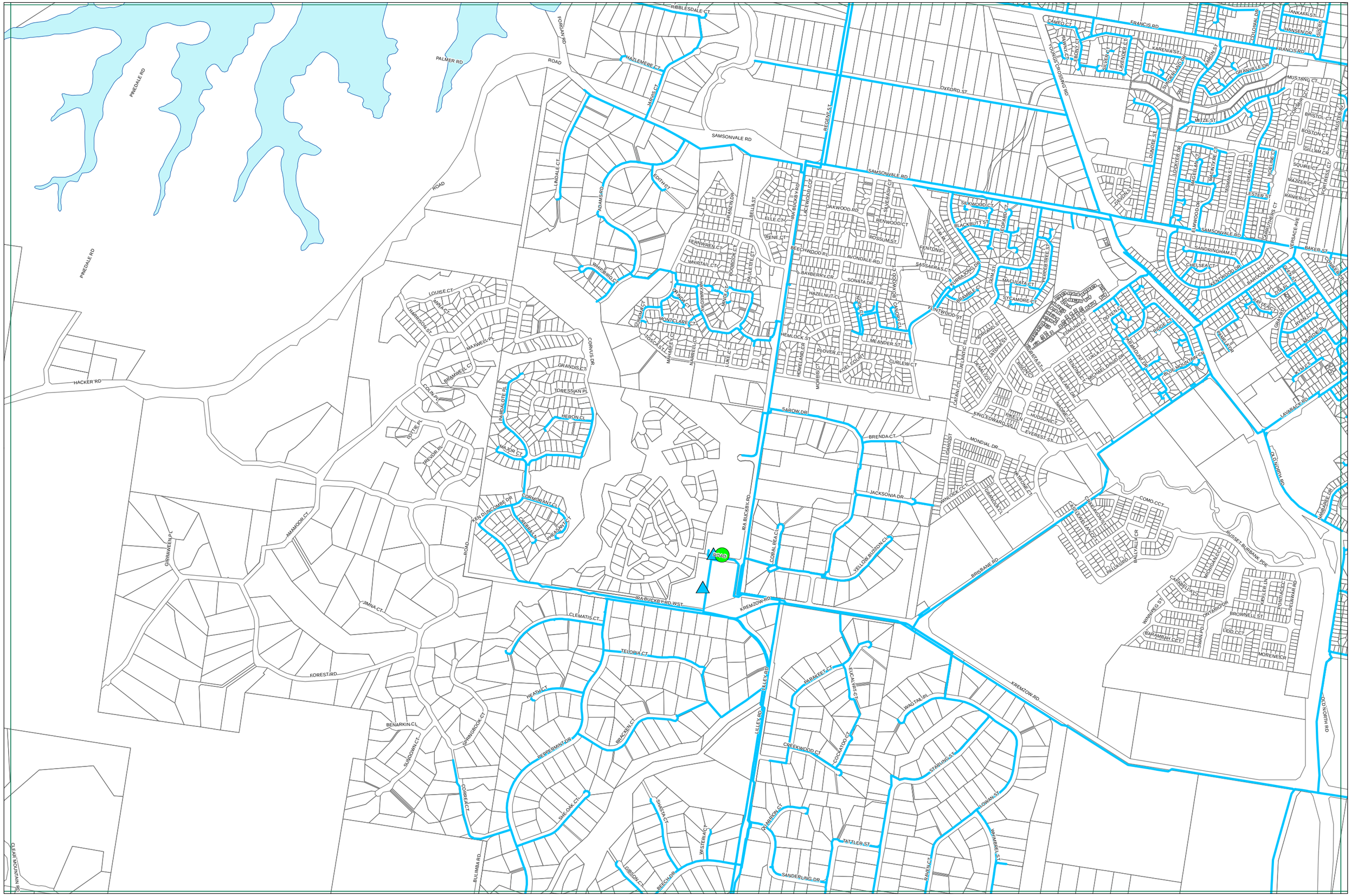
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 11.13



0 62.5 125 250 375 500
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- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

11.7	11.9	11.11
13.7	**13.9**	13.11
15.7	15.9	15.11

PLANNING SCHEME POLICY PSP22

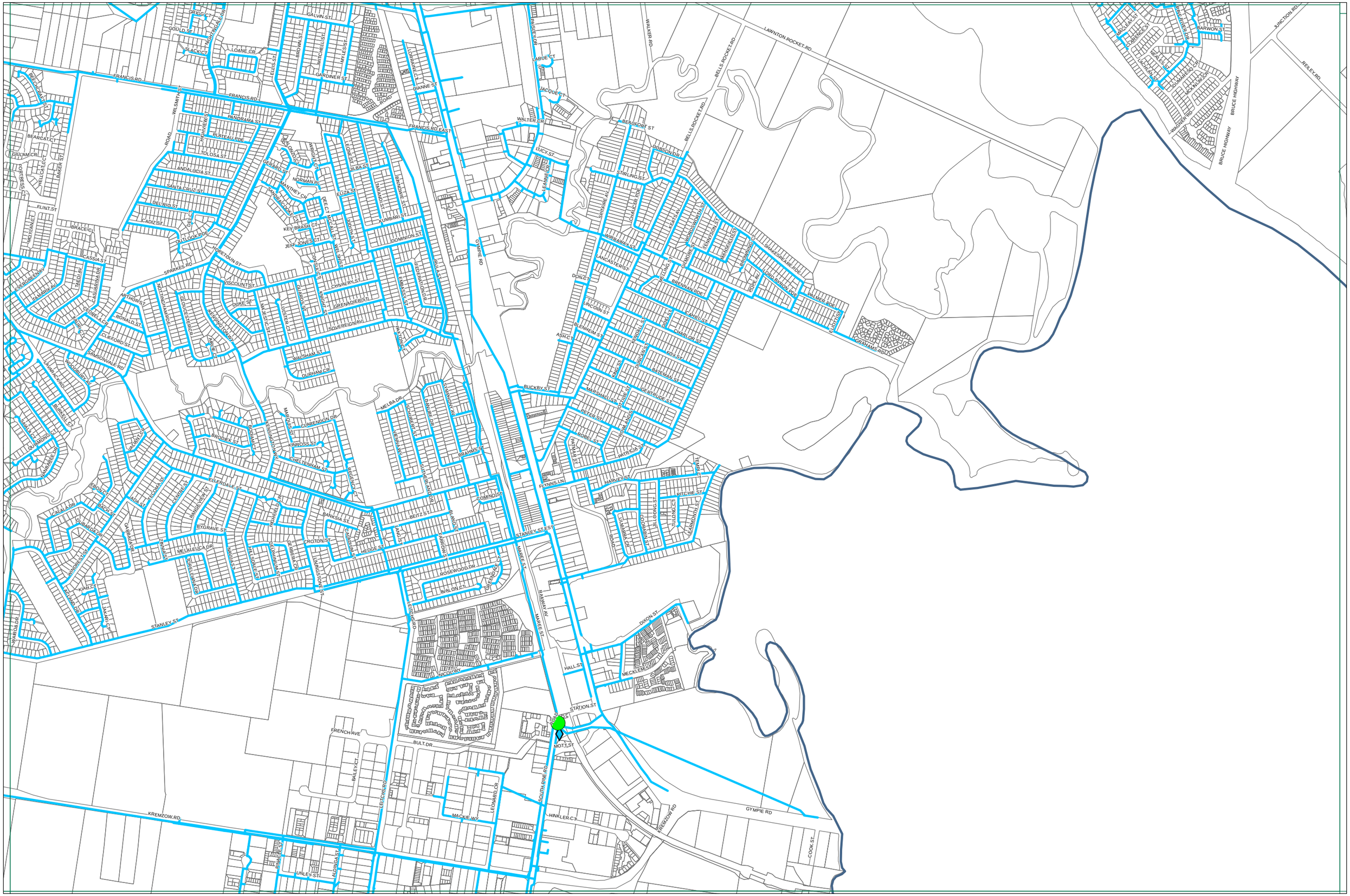
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 13.9



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- WATER ROUTE
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- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

11.9	11.11	11.13
13.9	13.11	13.13
15.9	15.11	

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 13.11

0 62.5 125 250 375 500

Metres

- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

13.5	13.7	13.9
15.5	15.7	15.9
	17.6	17.8

PLANNING SCHEME POLICY PSP22

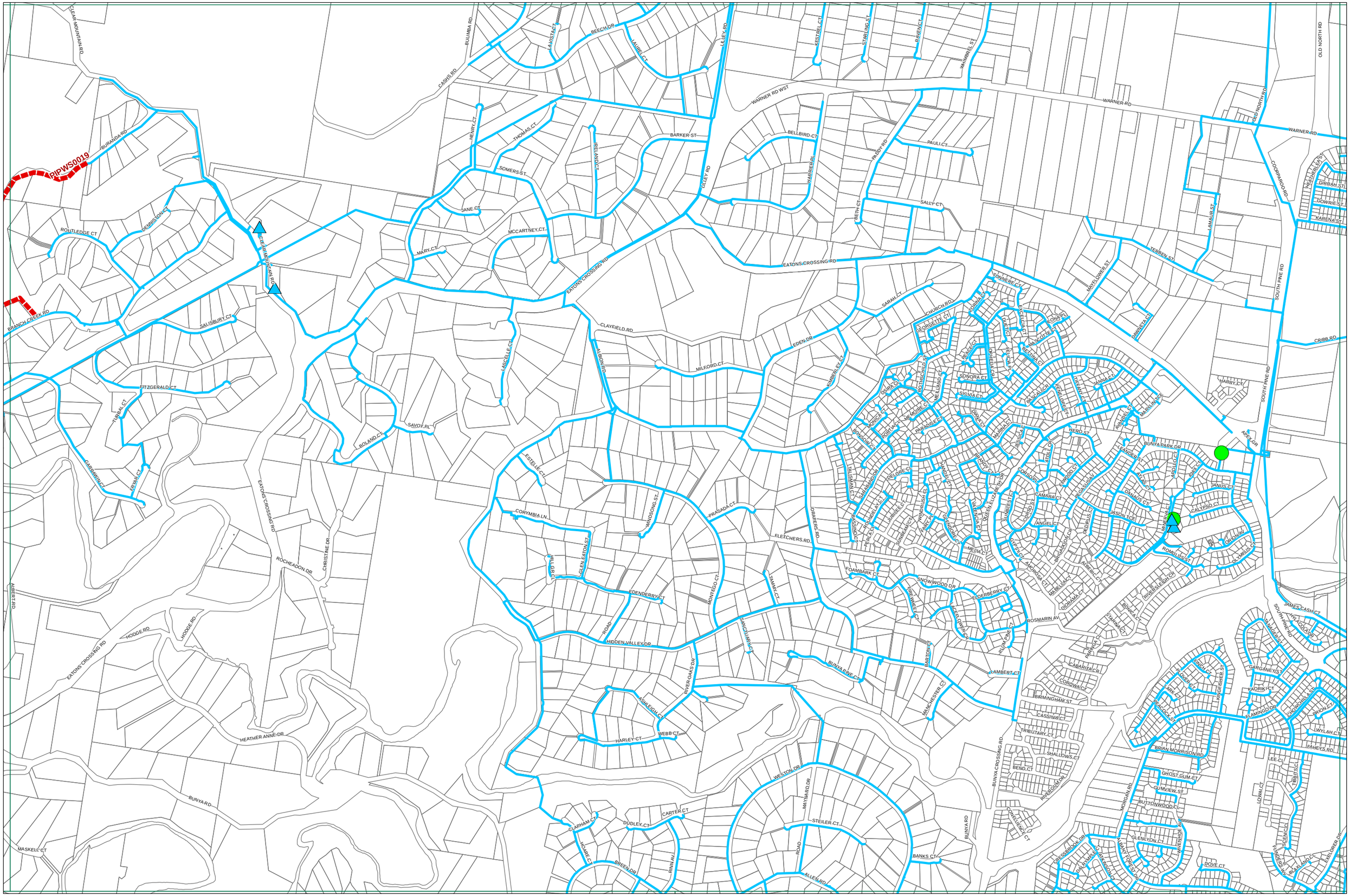
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 15.7



0 62.5 125 250 375 500

Metres

WATER ROUTE
PINE WM PIPES
Water Treatment Plants
Existing Bulk Meters
Lake Kurwongbah Facilities
Existing Water Pumps
Existing Reservoirs
Future Water Mains
Future Water Pumps
Future Water Reservoirs

13.7	13.9	13.11
15.7	**15.9**	15.11
	17.8	17.10

PLANNING SCHEME POLICY PSP22

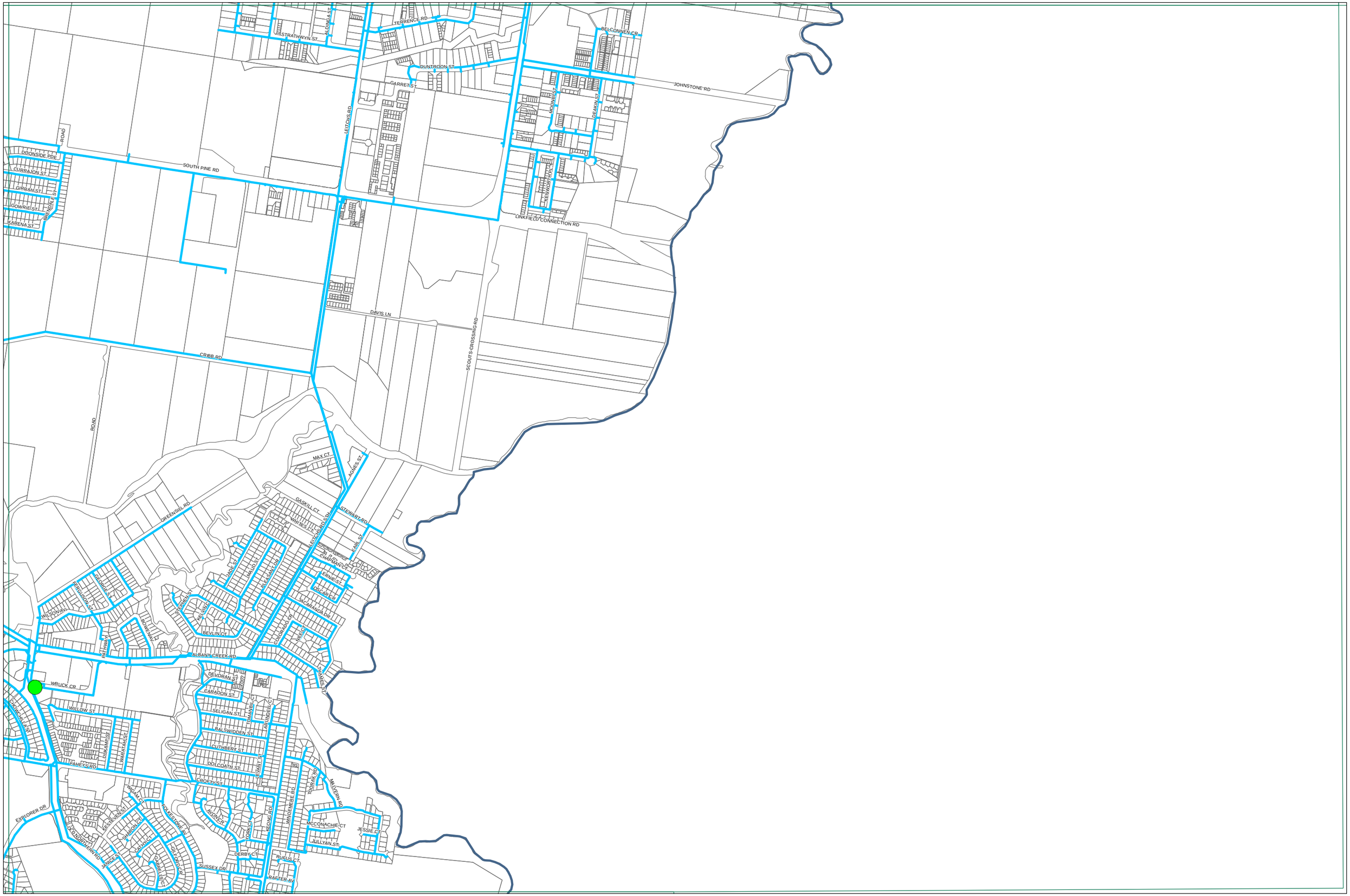
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 15.9



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Metres

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WATER ROUTE
PINE WM PIPES
Water Treatment Plants
Existing Bulk Meters
Lake Kurwongbah Facilities
Existing Water Pumps
Existing Reservoirs
Future Water Mains
Future Water Pumps
Future Water Reservoirs

13.11	13.13
15.11	

PLANNING SCHEME POLICY PSP22

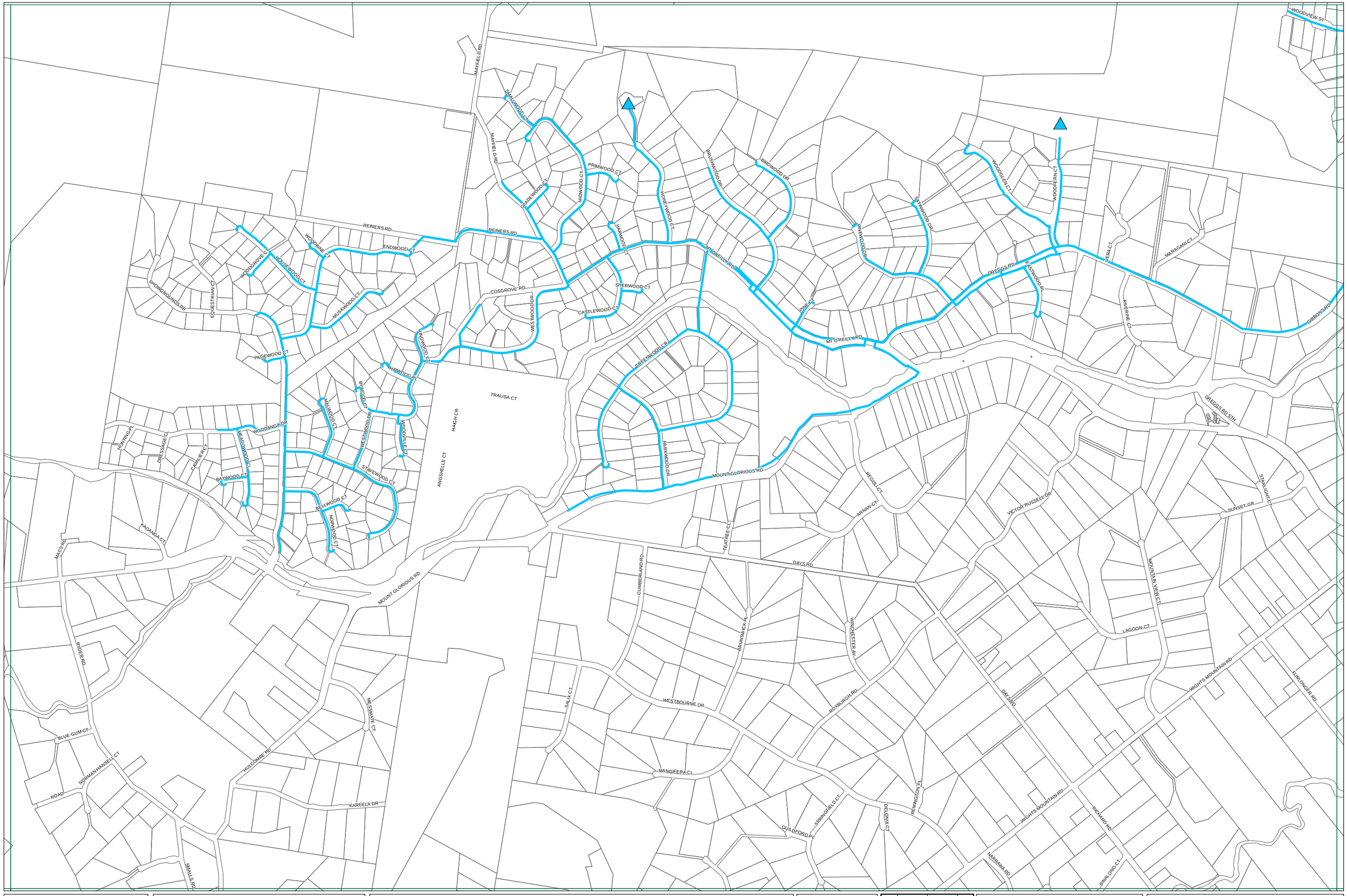
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 15.11



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WATER ROUTE
PINE WM PIPES
Water Treatment Plants
Existing Bulk Meters
Lake Kurwongbah Facilities
Existing Water Pumps
Existing Reservoirs
Future Water Mains
Future Water Pumps
Future Water Reservoirs

	15.5	15.7	
17.4	17.6	17.8
19.4	19.6	19.8

PLANNING SCHEME POLICY PSP22

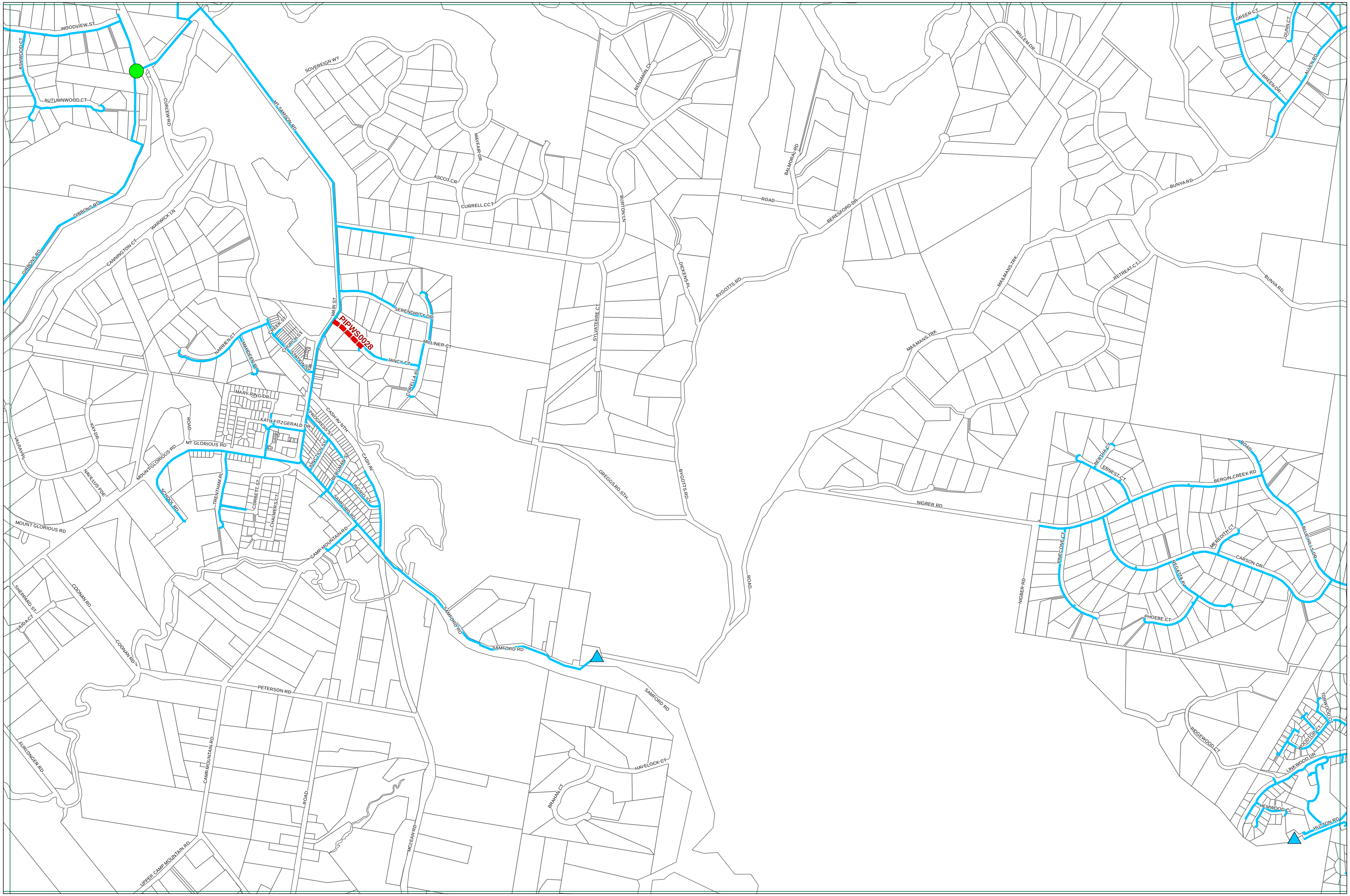
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 17.6



0 62.5 125 250 375 500

Metres

- WATER ROUTE
- PINE WM PIPES
- Water Treatment Plants
- Existing Bulk Meters
- Lake Kurwongbah Facilities
- Existing Water Pumps
- Existing Reservoirs
- Future Water Mains
- Future Water Pumps
- Future Water Reservoirs

15.7	15.9	
17.6	17.8	17.10
19.6	19.8	19.10

PLANNING SCHEME POLICY PSP22

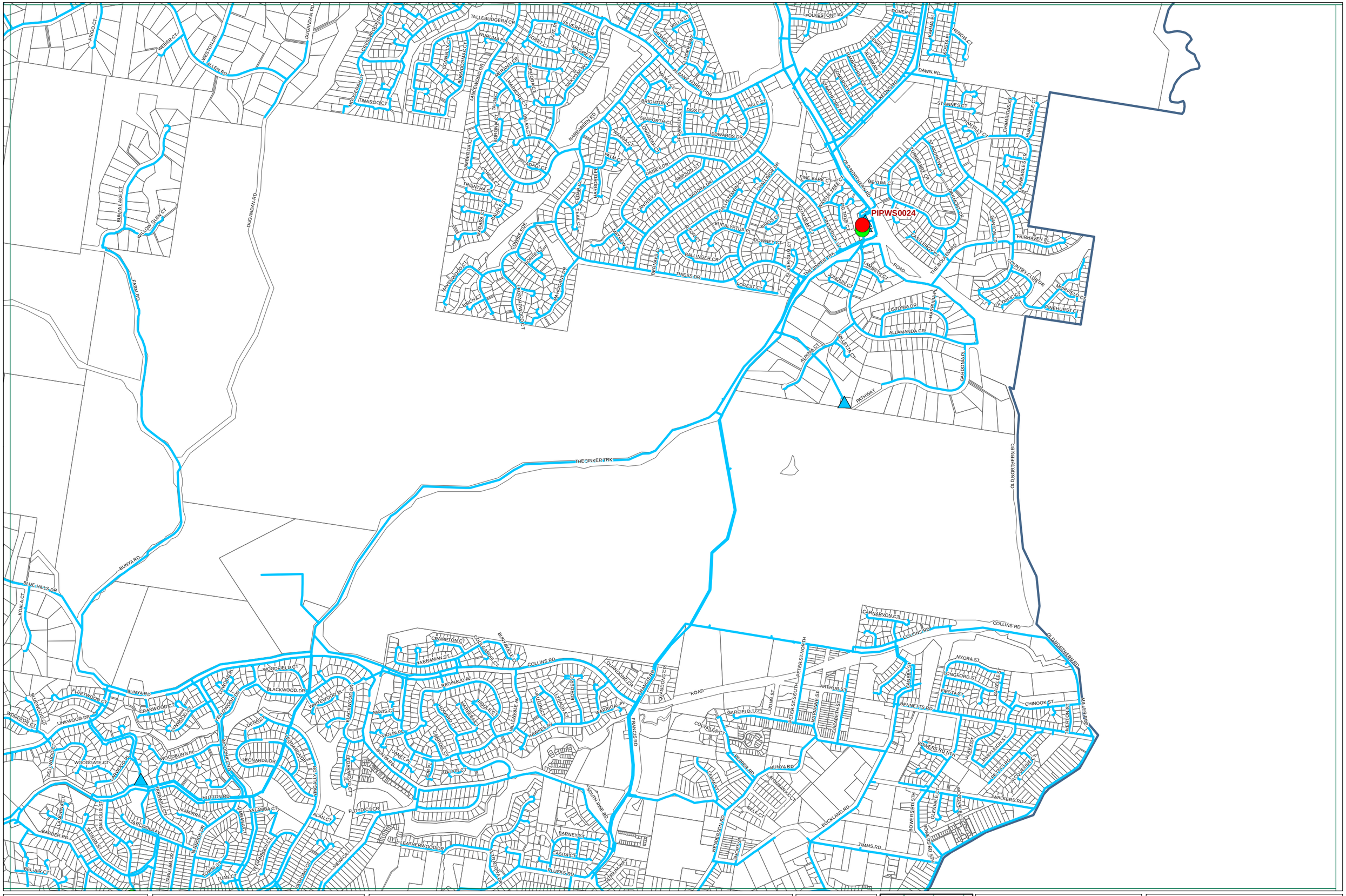
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 17.8



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WATER ROUTE
PINE WM PIPES
Water Treatment Plants
Existing Bulk Meters
Lake Kurwongbah Facilities
Existing Water Pumps
Existing Reservoirs
Future Water Mains
Future Water Pumps
Future Water Reservoirs

15.7	15.9	15.11
	17.8	17.10
	19.8	19.10

PLANNING SCHEME POLICY PSP22

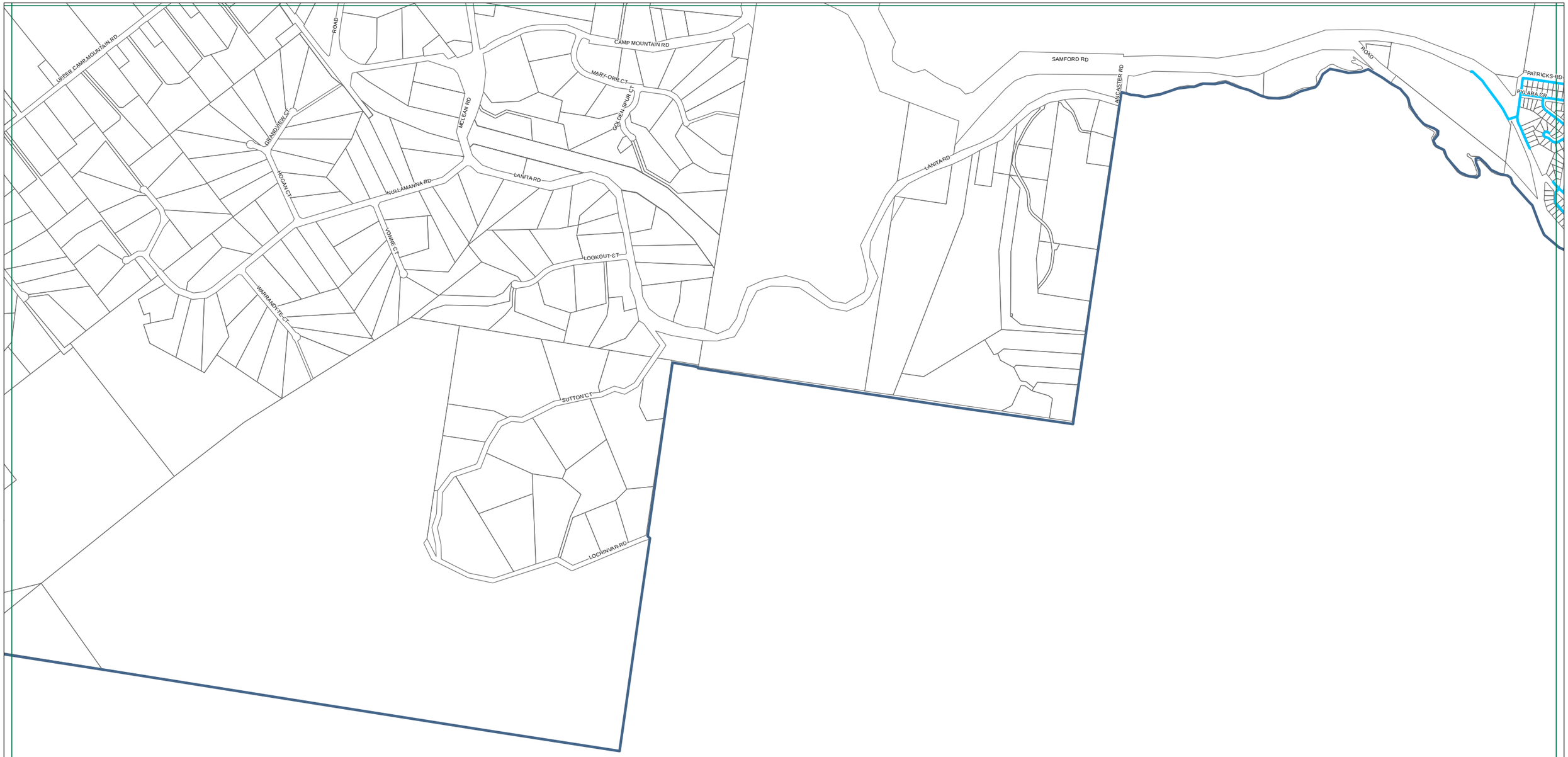
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 17.10



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- Future Water Pumps
- Future Water Reservoirs

17.6	17.8	17.10
19.6	19.8	19.10

PLANNING SCHEME POLICY PSP22

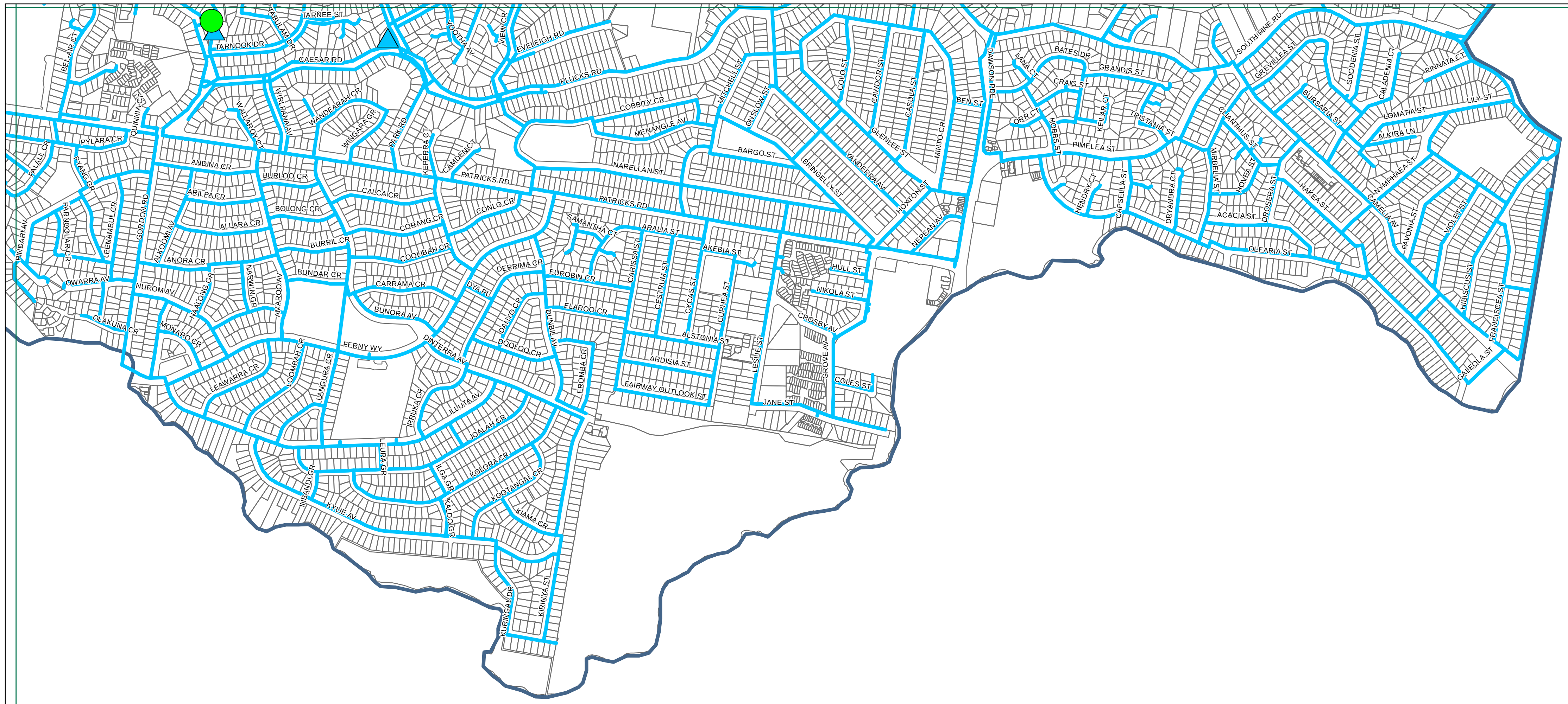
DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 19.8



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- Future Water Reservoirs

19.10

PLANNING SCHEME POLICY PSP22

DEVELOPMENT CONTRIBUTIONS FOR TRUNK INFRASTRUCTURE - WATER SUPPLY

EFFECTIVE FROM 29 October 2009

MORETON BAY REGIONAL COUNCIL
Pine Rivers Shire

WATER SUPPLY NETWORK ASSETS

Map Number 19.10

Schedule E: Desired Standards of Service

The Desired Standards of Service (DSS) for water supply and sewerage trunk infrastructure within the Designated Infrastructure Service Area have been determined in accordance with the requirements of the Water Supply (Safety and Reliability) Act 2008. Moreton Bay Water's approved Strategic Asset Management Plan and Total Management Plan detail ongoing practice and future initiatives to achieve and maintain the published standards of service.

The Desired Standards of Service for water supply and sewerage infrastructure provision under this policy are expressed in terms of 'Operational Objectives' and 'Detailed Design Parameters'.

The 'Operational Objectives' and 'Detailed Design Parameters' are aimed at achieving the stated purpose of the Integrated Planning Act while satisfying the relevant requirements of the Environmental Protection Act. The detailed design parameters are the means by which the performance requirements of the operational objectives are achieved.

The Guidelines prepared by the Queensland Government for design of urban water supply and a survey of current practice of local governments in South-East Queensland have also been used in establishing the desired standards of service and design criteria for the water supply systems. Authorities that were consulted to confirm current practice in South-East Queensland included Ipswich Water, Redland Water, Brisbane Water, former CalAqua, former Cooloola Shire, Wide Bay Water, Logan Water and Gold Coast Water.

Operational Objectives for Trunk Water Supply Services

Each of the 'Operational Objectives' for the provision of water supply services in Moreton Bay Regional Council's local government area is examined in the context of corresponding user benefits and environmental effects. The Primary Objectives adopted for water services in this policy are set out in Table E1.

Table E1 – Water Supply Operational Objectives

Objective	User Benefit	Environmental Effect
• **Corporate / Business Objective**	• **Community and Customer Service** • **Quality and Safety**	• **Environmental Protection**
Drinking water will comply with the Australian Drinking Water Guidelines.	• Uniform quality of water monitored in relation to recognised standards. • Safe and reliable water supply	• Improves community health
Designs will comply with State Government Guidelines, and Council's Planning Scheme Policy *PSP 28 "Civil Infrastructure Design"*.	• System will be adequate in terms of; o day-to-day reliability, o long term continuity of supply; o delivery of high quality drinking water to the consumer ;and o minimum life cycle cost (i.e., optimum maintenance, replacement and operation costs). • Cost effective service for community.	• Maintains the health of the community. • Chemicals are stored and handled in accordance with relevant legislation to ensure safety of worker, public safety and to protect the environment. • Minimisation of Greenhouse gas emissions. • Optimum use of resources.
Minimise water loss	• Extend asset life • Defer system augmentation • Conserve raw water supply • Minimise energy consumption • Optimise size of elements within water supply network.	• Improve environmental flows • Minimisation of Greenhouse gas emissions.
Effective management of water consumption (Demand Management)	• Reduced cost of water • Defer requirement for new water source • Minimise energy consumption • Optimise size of elements within water supply network.	• Improve environmental flows • Minimisation of Greenhouse gas emissions.
Implement environmental responsibilities with respect to water supply operations	• Noise control • No adverse visual impact • Control of overflows from system. • Management of flushing water. • Maintain flows or storage in raw water sources for environmental purposes.	• Improves community health • Maintain amenity (e.g., visual and noise characteristics) of locality. • Reductions in discharges that have concentrations of free chlorine greater than 1 mg/l. • Control of discharge of turbid water to stormwater drainage

Objective	User Benefit	Environmental Effect
• **Corporate / Business Objective**	• **Community and Customer Service** • **Quality and Safety**	• **Environmental Protection**
		during construction of infrastructure and flushing or scouring operations. • Required environmental flows maintained
System design will aim to minimise energy consumption and optimise the use of green energy	• Reduced energy costs. • Cost effective service for community.	
The design of the water supply network shall provide fire fighting flow and specified water pressures and flow to the consumer.	• Reliable water supply • Adequate supply for community services • Adequate pressures and flow for fire fighting purposes.	• Maintains health and safety of the community.
Infrastructure will be designed, constructed and operated in accordance with Workplace Health and Safety Legislation.	• Minimisation of risk to workers and community (reduction in accidents and insurance premiums).	• Minimise risk of pollution events. • Safer work environment for staff and public.

Detailed Design Parameters – Water Supply

Following an examination of the Queensland Government Guidelines and a survey of current practice of local governments in South East Queensland, Moreton Bay Regional Council has adopted the parameters summarised in Table E2 for design and assessment of water supply systems.

These factors are applied in accordance with procedures detailed in the Queensland Government Guidelines.

The summary outlined in Table E2 must be interpreted in conjunction with the design and construction standards for water supply set out in other Planning Scheme Policies of the relevant planning scheme.

Table E2 - Water Supply Design Parameters

Item	Description	Adopted Design Parameter
Water Demand		
1	Average Day Demand (AD)	Existing and Future Demand – 296 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 = 20 L/EPW/day
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. • 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	80 m at the property's water meter
Fire Fighting Requirements		
7	System Pressure	12 m minimum pressure head at the hydrant/dedicated service location, 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	• Predominantly residential development not more than 3 storeys - 15 L/s

Item	Description	Adopted Design Parameter
		simultaneous with background demand as defined in Item 9 for a period of 2 hours. • Predominantly commercial/industrial and residential buildings greater than 3 storeys - 30 L/s simultaneous with background demand as defined in Item 9 for a period of 4 hours. • Special risk/hazard land use – to be assessed.
9	Background demand	• Predominantly Residential Area - 2/3 of MH demand • Predominantly Commercial/Industrial Area - MH demand (generally between 10 am to 4 pm)
10	Reservoir level	• At the commencement of the fire fighting event the reservoir level should be set at Mid-Water Level; where: Mid-Water Level = (Top Water Level + Floor Level) ÷ 2 (AHD). • The reservoir must not empty during the fire fighting event for the duration of the event specified in item 8 with supply pumps turned off.
Storage		
11	Design Condition	• Reservoirs must not empty in less than 3 consecutive 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 storage = 150 kL
Pumping Capacity		
14	Duty pump capacity to serve ground level reservoirs.	Supply MDMM demand in 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 defined in item 13 above.
16	Standby Pump Capacity	Equal to the capacity of the largest 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) • C = 110 (150 mm> diameter < 300 mm) • C = 120 (diameter ≥ 300 mm)
20	Maximum Flow Velocity	2.5 m/s
Pressure and Leakage Management		
21	District Meter Area (DMA)	• The sizes of the reticulation mains should be designed according to the planned DMAs. • Existing DMA boundary should not be breached.

REVIEW TRIGGERS

This policy is reviewed internally for applicability, continuing effect and consistency with related documents and other legislative provisions when any of the following occurs:

(1) The related documents are amended;

(2) The related documents are replaced by new documents;

(3) Amendments which affect the allowable scope and effect of a policy of this nature are made to the head of power; and

(4) Other circumstances as determined from time to time by a resolution of Council.

RESPONSIBILITY

This policy is to be:

(1) implemented by the Senior Manager Development Services; and

(2) reviewed and amended in accordance with the "Review Triggers" by the Senior Manager Strategic Direction and Sustainability in consultation with the Senior Manager Development Services, the Senior Manager Regional and Environmental Planning and the Senior Manager Planning and Strategic Asset Management.

VERSION CONTROL

CEO Approval Date	**15/09/2009**

Related Links:

ENDNOTES

Amendment No – 2/2008	Date Adopted – 19 August 2008	Effective Date – 1 September 2008
Planning Scheme Policy Reference	**Description of Amendment**	
PSP 22	▪ To reflect updated network planning ▪ Update infrastructure contribution rates ▪ Incorporate additional material, for example, desired standards of service ▪ Re-wording and restructuring of the document to improve readability ▪ Revised demand factors	

Amendment No – 1/2009	Date Adopted – 8 September 2009	Effective Date – 29 October 2009
Planning Scheme Policy Reference	**Description of Amendment**	
PSP 22	▪ To reflect updated network planning ▪ Update infrastructure cost estimates ▪ Update infrastructure mapping ▪ Incorporate discounted cash flow methodology for the calculation of contribution rates	