Moreton Bay Regional Council – Caboolture Shire

Planning Scheme Policy

PSP21E Trunk Infrastructure Contributions - Stormwater

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PSP21E Trunk Infrastructure Contributions – Stormwater

ADOPTION
Moreton Bay Regional Council adopted this planning scheme policy on 8 September 2009.

COMMENCEMENT
This 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 21E TRUNK INFRASTRUCTURE CONTRIBUTIONS – STORMWATER

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 Stormwater 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 Stormwater Trunk Infrastructure works between Council and developers of land in the former Caboolture Shire.

Definitions / Application

Application

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

The policy outlines the basis of Council's Infrastructure Contributions Regime for Stormwater Trunk Infrastructure (Water Quality and Stormwater Discharge Quantity) in the former Caboolture Shire. It is to be read in conjunction with Planning Scheme Policy PSP21G Trunk Infrastructure Contributions – 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 PSP21G Trunk Infrastructure Contributions – Administration Policy. Where a term used in this policy is not defined in PSP21G that term shall, unless the context indicates or requires otherwise, have the meaning assigned to it in the *Caboolture ShirePlan* 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 Stormwater Trunk Infrastructure which Council will impose as conditions of development approval. The provisions of this policy shall apply to applications for development within the former Caboolture Shire which, in the opinion of Council, may impact on its Stormwater Trunk Infrastructure either immediately or at some time in the future. This policy:

- is to be read in conjunction with Planning Scheme Policy PSP21G Trunk Infrastructure Contributions – Administration Policy;
- specifies the assumptions made in determining the rate of the contribution payable towards the cost of Stormwater Trunk Infrastructure within the former Caboolture Shire;
- specifies the works, structures and/ or equipment, which the Council determines to be Stormwater Trunk Infrastructure;
- establishes the estimated cost of construction and any required augmentation of the Stormwater Network where contributions are to be made in terms of Stormwater Quality and Stormwater Discharge Quantity costs; and
- lists the applicable Demand Factors and Schedules of Infrastructure Contribution Rates.

2 Background Information

With the formation of Moreton Bay Regional Council incorporating the former Redcliffe City, Pine Rivers and Caboolture Shire Councils, there has been an effort to align the approaches to determining development contributions. As such, the methodology used in establishing the amount of required Trunk Infrastructure Contributions under this policy is generally based on the methodology identified in the report by John Wilson and Partners (JWP), "Priority Infrastructure Plan Stormwater" (the Study Report) for the former Pine Rivers Shire. That Study Report comprises:-

(1) Part 1 – Executive Summary (June 2008);

(2) Part 2 – Main Report (June 2008);

(3) Part 3 – Detailed Maps (June 2008); and

(4) Part 4 – Calculations and Supporting Data (June 2008).

The Study Report, as relevant to the Caboolture Shire, gave regard to the, Saltwater Creek Catchment Management Plan, by Geo-Eng Australia Pty. Ltd., June 2000;

The following additional reports identifying required Trunk Infrastructure were also used in the preparation of this policy:

GHD, "Stormwater Quality Infrastructure for the Caboolture Shire", 2009

MBRC, "Stormwater Quantity Infrastructure for Caboolture and Burpengary Catchments", 2009

Natural Solutions, "Caboolture Shirewide Waterways Management Strategy", 2008

3 Stormwater Methodology

3.1 Methodology

Determination of infrastructure for stormwater quantity and quality management has been undertaken for catchments throughout the Caboolture Shire. Assessment of this infrastructure has been determined based generally on assessments of existing land use and impervious cover, projected land use information derived from the *Caboolture ShirePlan* and growth projections, engineering investigations, modelling, as well as the forecasting and design aspects outlined in the studies and reports referred to in section 2 of this policy. Those studies are available as supporting and reference documents to this Policy.

The abovementioned studies and reports have focussed on catchment issues for rivers, streams and drainage areas. The adopted trunk infrastructure items are required to service or mitigate impacts from a large number of allotments or significant land areas having potential for subdivision. Accordingly, that infrastructure identified in these studies and reports has been adopted as trunk infrastructure for the purpose of this policy.

The provision and timing of trunk infrastructure has been based on the ultimate development of the particular catchment envisaged in the *Caboolture ShirePlan* and the anticipated population growth over time respectively.

Investigation of stormwater management requirements has been performed for a large area of the waterway network within the former Caboolture Shire. Table 3.1B details the extent of modelling undertaken and applicable service catchments. The studies identify the infrastructure required to service both existing and future residents and non-residential activities as well as a methodology for the appropriate apportionment of cost based on the relative utilisation of the network by existing and future users. The requirements for land acquisition, revegetation and stream corridor rehabilitation have also been considered.

Trunk Infrastructure has been classified according to a hierarchy of two stormwater planning levels – Creek and River. Creek infrastructure services customers in individual creek catchments, while river infrastructure services multiple creek or service catchments. The apportionment of cost, to be equitable, must give consideration to the different hierarchy levels and asset utilisation.

The procedures that have been applied to determine infrastructure contributions for each service catchment are detailed in Table 3.1A:

Table 3.1A – Infrastructure Contributions Methodology

Step	Tasks	
(1) Establish Service Catchments	(a) Determine DISA; and (b) Determine Service Catchments both inside and outside the DISA.	3.2 Stormwater Service Catchments
(2) Assess change in land use based on growth projections.	(a) Evaluate the change to future land use based on the planning assumptions.	
(3) Assess the land use components within the river, creek and local catchments throughout the former Shire as applicable to each service catchment	(a) Determine the existing land use within each catchment in hectares; and (b) Determine the future land use within each catchment in hectares based on strategic planning of future urbanisation and other land uses in hectares; and (c) Calculate the equivalent contributing area (demand units) for each catchment	3.3 Basis for Demand Assessment 3.4 Stormwater Demand in Catchments Demand units for allocating charge

Step	Tasks	
(4) Identify Future Assets	(a) From Catchment Management, Local Area Drainage and Detail Hydrological studies determine which future assets form part of the ultimate infrastructure network for waterway management of river, creek and local catchments. Refer Table 3.1B for a listing of those studies; (b) Determine the Trunk Infrastructure cost and allocate to the service catchment hierarchy. Revalue cost to 01 January 2009;	4.3 Stormwater Trunk Infrastructure Determination 4.4 Stormwater Trunk Infrastructure Valuations 4.5 Existing Stormwater Trunk Infrastructure 4.6 Future Stormwater Plan for Infrastructure
(5) Assess timing of works	(a) Evaluate infrastructure timing based on projected future development needs; (b) Based on future development timing and availability of funding, determine the timing of works.	4.6 Future Stormwater Plan for Infrastructure
(6) Assess the cost of infrastructure to be funded by future development	(a) Calculate the net present value for each future infrastructure item by escalating the cost by an anticipated inflation index and discount back by the relevant discount rate for the network. (b) Calculate the infrastructure contribution rates by dividing the costs of future infrastructure in net present value by the equivalent contributing area (demand units) in the catchment. 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. (c) The cost of infrastructure is allocated to existing and/or future equivalent contributable areas as appropriate.	4.7 Stormwater Infrastructure Costs by Catchment Table 4.7A
(7) Apportion the Trunk Infrastructure costs attributable to each land use within the river, creek and local catchments throughout the former Shire as applicable to each service catchment	(a) Apportion the cost and unit rate applicable for quantity infrastructure to existing and future land use based on impact of change in land use; and (b) Apportion the cost and unit rate applicable for quality infrastructure to existing and future land use based on impact of change in land use.	Schedule B Infrastructure Contribution Rates

Table 3.1B – Stormwater Management Planning Documentation

Catchment Management Document	Service Catchment
MBRC, "Stormwater Quantity Infrastructure for Caboolture and Burpengary Catchments", 2009	Deception Bay Burpengary Creek Little Burpengary Creek Caboolture River Caboolture Mouth Godwin Beach Gregors Creek Gympie Creek King John Creek Lagoon Creek Sheepstation Creek Wararba Creek
GHD, "Stormwater Quality Infrastructure for the Caboolture Shire", 2009	Bribie Island Bullock Creek Burpengary Creek Caboolture River Deception Bay Elimbah Creek Glass Mountain Creek Godwin Beach Gympie Creek King John Creek Lagoon Creek Little Burpengary Creek Monkeybong Creek Ningi Creek One Mile Creek Saltwater Creek Sheepstation Creek Stanley River Wararba Creek
Saltwater Creek Catchment Management Plan	Saltwater Creek

Outline Planning

Where catchment management or other drainage planning does not exist for a particular service catchment, the applicable stormwater infrastructure costs were determined through an assessment of infrastructure requirements from a service catchment with similar characteristics which were transposed to the subject area. This approach in determining contribution rates for 'like catchments' has been performed in accordance with Infrastructure Guideline requirements, with the required infrastructure documented in the "Outline Plans" for Trunk Infrastructure. The Outline Planning process included the determination of a similar rate of infrastructure provision proportional to the total equivalent developable area and an assessment of the similarity of the resultant calculated contribution to that of the "like catchment".

Table 3.1C details catchments for which the outline planning process has been used. As part of Council's ongoing review process, appropriate studies will be undertaken over time to progressively encompass those service catchments and the stormwater management planning for those areas will be updated accordingly.

Council acknowledges that the infrastructure outlined for these catchments is based on a minimalist approach which will need to be supplemented in the future to meet the same desired standards of service on which the detailed studies listed in table 3.1B were based.

The methodology adopted for this policy applies an equitable distribution of trunk infrastructure cost between Council (on behalf of the entire community), and entities proposing more development. Each development proponent will only be responsible for meeting the establishment costs of that proportion of the stormwater trunk infrastructure network impacted by that entity's development proposal.

Table 3.1C – Infrastructure Cost Allocation to Areas with Outline Planning

Service Catchment Hierarchy	Service Catchment Area	Similar Service Catchment Area	Transposition Components
Creek	Monkeybong	Wararba Creek	Quantity Infrastructure
	One Mile Creek	Wararba Creek	Quantity Infrastructure
	Blackrock Creek	Wararba Creek	Quantity and Quality Infrastructure
	Stanley River	Wararba Creek	Quantity Infrastructure
	Beerburrum Creek	King John Creek	Quantity Infrastructure
	Bribie Island	Godwin Beach	Quantity Infrastructure
	Bullock Creek	King John Creek	Quantity Infrastructure
	Elimbah Creek	King John Creek	Quantity Infrastructure
	Glass Mountain Creek	King John Creek	Quantity Infrastructure
	Ningi Creek	King John Creek	Quantity Infrastructure
	Saltwater Creek	King John Creek	Quantity Infrastructure
	Six Mile Creek	King John Creek	Quantity and Quality Infrastructure

3.2 Stormwater Service Catchments

The concept of Service Catchments allows for the cost of works within each service catchment and the corresponding infrastructure contribution rates to accurately reflect the actual impacts of development and the mitigation required. The service catchment concept is a convenient and logical vehicle for relating the infrastructure items being charged for and the development changes that they address to topographically derived boundaries.

The former Caboolture Shire has been divided into the following stormwater River service catchments:

(1) Burpengary
(2) Caboolture
(3) Mary River
(4) North Pine River
(5) Coastal Creeks[1]

The Stormwater River service catchments are further divided into a number of Creek service catchments as indicated in Table 3.2A:

Table 3.2A – Stormwater Network Creek Catchments

River Catchment	Creek Catchment	Short Name
BURPENGARY	Deception Bay	DEC
	Burpengary Creek	BUR
	Little Burpengary Creek	LBC
CABOOLTURE	Caboolture River	CAB
	Caboolture Mouth	CBM
	Godwin Beach	GOD
	Gregors Creek	GRE
	Gympie Creek	GYM
	King John Creek	KJC
	Lagoon Creek	LAG
	Sheepstation Creek	SSC
	Wararba Creek	WAR
	Blackrock Creek	BRC
	Byron Creek	BYR
	Delaney Creek	DEL
	Monkeybong Creek	MBC
	Neurum Creek North	NCN
	Neurum South Creek	NSC
	One Mile Creek	OM
	Running Creek	RUN
	Stanley River	STA
	Stony Creek	STO
MARY RIVER	Mary River	MAR
NORTH PINE RIVER	North Pine River	NPR
	Sideling Dam	SID
	Terrors Creek	TER
COASTAL CREEKS	Beerburrum Creek	BBC
	Bribie Island	BUL
	Bullock Creek	BRI
	Elimbah Creek	ELI
	Glass Mountain Creek	GMC
	Ningi Creek	NIN
	Saltwater Creek	SAL
	Six Mile Creek	SMC

The extent of each of these "Stormwater Service Catchments" is shown on the maps contained in Schedule C of this Policy.

3.3 Basis for Demand Assessment

Both the quantity and quality of stormwater discharged from a property as a result of a rainfall event are directly related to variables such as the extent of impervious area and the nature of the activity being conducted on the

[1] includes all waterways external to the River systems which discharge to the Bribie Passage and Moreton Bay

land. Since the type, nature and intensity of development is governed by the zone of the land, it is reasonable to adopt land zone under the planning scheme as a reliable technique for the determination of stormwater flows (quantity assessment) and pollutant discharges (quality assessment) from the land. Such an approach has been used for establishing demand under this policy.

3.3.1 Stormwater Quantity Assessment

Assessment of rainfall runoff and stream flow flood level has been performed by software modelling of the various processes using industry accepted engineering design practice and, where possible, calibration to measured or known conditions. The assessments have been undertaken using procedures that have regard to the nature and extent of land zones and the hydrologic impact of these uses which are consistent with the intent of each of those zones under the *Caboolture ShirePlan*. Table 3.3A details the various runoff coefficients and contribution factors for the applicable land zones.

The runoff coefficients used reflect the impervious area generally associated with that specific zone. The contribution factors for the calculation of the infrastructure contribution rate for Stormwater Quantity infrastructure have been based upon the ratio between the C100 Runoff Coefficient assigned to each zone or land use and that assigned to undeveloped land.

The various runoff coefficients and contribution factors for the applicable land use zones have been adapted from the runoff coefficients for land zones in the *PineRiversPlan*. Table 3.3A lists the equivalent zones under *PineRiversPlan* to those listed in *Caboolture ShirePlan* and the applicable runoff coefficients.

Table 3.3A – Runoff Coefficient Assumptions and Contribution Factors

Caboolture ShirePlan Zone	Equivalent PineRiversPlan Zone	Runoff Coefficient (C100)	Contribution Factor (CF_{QTY})/hectare
Metropolitan Centre	**Central Business**	1	0.19
District Centre	**Commercial**	1	0.19
Regional Industry	**General Industry**	1	0.19
District Industry	**General Industry**	1	0.19
Local Industry	**Service Industry**	1	0.19
Local Centre	**Local Business**	1	0.19
Open Space	**Park and Open Space**	0.84	0.00
Residential A (lots <600m^2)	**Residential A and Future Urban**	0.95	0.13
Residential A (lots <600m^2)	**Residential A (lots <600m^2)**	0.97	0.15
Residential B	**Residential B**	1	0.19
Rural	**Rural (lots no less than 16 Ha)**	0.84	0.00
Rural Residential	**Rural Residential and Rural other than above**	0.89	0.06

Stormwater Quantity infrastructure elements have been assessed on the basis of requirements to mitigate the impact of development to achieve Council's adopted desired standard of service.

3.3.2 Stormwater Quality Assessment

Stormwater Quality infrastructure elements have been evaluated on the basis of necessary works required to mitigate the impact of development to achieve Council's adopted desired standard of service in relation to water quality issues. Stormwater Quality Infrastructure includes Riparian Corridor Management Area and Rehabilitation / Revegetation Areas, as well as other Stormwater Treatment Measures. The costs for this infrastructure have been allocated across all existing and future demand in the former Caboolture Shire to ensure fair cost allocation.

The pollutant export loading rates have been determined utilising the former Pine Rivers Shire's adopted design standards in regard to the relative increase in the specific pollutant elements of Total Nitrogen (TN), Total Phosphorous (TP) and Suspended Solids (SS). The contribution factors for the calculation of the infrastructure contribution rate for Stormwater Quality management infrastructure have been based on the ratio between the average of the pollutant export loading rates assigned to each zone or land use and that assigned to undeveloped land.

Table 3.3B lists the equivalent zones under *PineRiversPlan* to those listed in *Caboolture ShirePlan* and the applicable annual pollutant export loads and contribution factors upon which the cost allocation method is based.

Table 3.3B – Pollutant Impact Assumptions and Contribution Factors

Caboolture ShirePlan Zone	Equivalent PineRiversPlan Zone	Annual Pollutant Export (Load – kg/ha)			Contribution Factor (CFqal)/hectare
		TP	TN	SS	
Metropolitan Centre	**Central Business**	2.3	10.7	1150	1.90
District Centre	**Commercial**	2.1	10.6	1100	1.74
Regional Industry	**General Industry**	2.3	10.7	1150	1.90
District Industry	**General Industry**	2.3	10.7	1150	1.90
Local Industry	**Service Industry**	2.1	10.6	1100	1.74
Local Centre	**Local Business**	2.1	10.6	1100	1.74
Open Space	**Park and Open Space**	0.8	7.8	380	0.17
-	**Park Residential**	1.1	9.0	570	0.58
Residential A	**Residential A and Future Urban**	1.6	10.3	950	1.32
Residential A (lots <600m^2)	**Residential A (lots <600m^2)**	1.9	10.4	1000	1.52
Residential B	**Residential B**	2.0	10.5	1050	1.63
Rural	**Rural (lots no less than 16 Ha)**	0.7	7.4	290	0.00
Rural Residential	**Rural Residential and Rural other than above**	0.9	8.0	400	0.25
Special Use	**Special Purposes**	2.0	10.5	1050	1.63

3.4 Stormwater Demand in Catchments (Demand Units)

Stormwater infrastructure requirements have been determined for 'ultimate' development of the former Shire under the current Planning Scheme. Table 3.4A shows the Equivalent Contributing Areas (ECA) or Demand Units - ECAqty and ECAqal - for existing and anticipated future activity within the Stormwater Service Catchments. The Equivalent Contributing Areas are calculated by multiplying the area of all land of a given Planning Scheme Zone in a catchment by the contribution factor for the zone, and then aggregating the results for the catchment.

Table 3.4A – Equivalent Contributing Existing and Future Land Use Areas

Catchment	ECAqal Existing	ECAqal Future	ECAqal Total	ECAqal Demand Change	ECAqty Existing	ECAqty Future	ECAqty Total	ECAqty Demand Change
Beerburrum Creek	24.48	0.00	24.48	0.0%	3.52	0.00	3.52	0.0%
Blackrock Creek	15.99	37.68	53.67	235.6%	2.91	3.71	6.62	127.7%
Bribie Island	2301.31	316.16	2617.47	13.7%	290.33	32.15	322.48	11.1%
Bullock Creek	10.38	1.92	12.30	18.5%	1.02	0.19	1.21	18.5%
Burpengary Creek	1152.63	470.36	1622.98	40.8%	166.24	57.79	224.03	34.8%
Byron Creek	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Caboolture Mouth	155.21	33.11	188.33	21.3%	20.72	3.61	24.33	17.4%
Caboolture River	784.86	877.99	1662.85	111.9%	97.10	99.27	196.37	102.2%
Deception Bay	393.83	95.86	489.70	24.3%	41.34	10.11	51.45	24.5%
Delaney Creek	13.51	0.08	13.58	0.6%	1.63	0.01	1.64	0.5%
Elimbah Creek	106.61	0.26	106.87	0.2%	12.44	0.03	12.46	0.2%
Glass Mountain Creek	21.50	29.95	51.45	139.3%	2.13	2.95	5.08	138.3%
Godwin Beach	486.39	196.78	683.17	40.5%	63.58	28.66	92.24	45.1%
Gregors Creek	0.58	0.00	0.58	0.0%	0.08	0.00	0.08	0.0%
Gympie Creek	188.11	400.32	588.43	212.8%	34.97	53.53	88.51	153.1%
King John Creek	468.47	528.50	996.97	112.8%	67.71	89.57	157.28	132.3%
Lagoon Creek	590.79	507.26	1098.05	85.9%	71.54	58.80	130.35	82.2%
Little Burpengary Creek	468.37	173.29	641.66	37.0%	64.42	24.11	88.52	37.4%
Mary River	0.06	0.00	0.06	0.0%	0.01	0.00	0.01	0.0%
Monkeybong Creek	151.36	159.33	310.69	105.3%	26.93	37.03	63.95	137.5%
Neurum Creek North	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Neurum South Creek	64.69	0.00	64.69	0.0%	9.31	0.00	9.31	0.0%
Ningi Creek	273.29	9.07	282.35	3.3%	42.34	2.18	44.52	5.1%
North Pine River	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
One Mile Creek	205.64	84.52	290.16	41.1%	34.52	15.26	49.78	44.2%
Running Creek	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Saltwater Creek	428.58	621.95	1050.53	145.1%	60.83	66.32	127.15	109.0%
Sheepstation Creek	727.15	555.08	1282.23	76.3%	104.79	62.08	166.87	59.2%
Sideling Dam	107.59	15.83	123.42	14.7%	14.40	1.74	16.14	12.1%
Six Mile Creek	62.33	34.59	96.92	55.5%	13.04	6.55	19.60	50.2%
Stanley River	97.45	34.42	131.87	35.3%	13.35	4.47	17.82	33.5%
Stony Creek	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Terrors Creek	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Wararba Creek	281.63	187.42	469.06	66.5%	46.75	22.76	69.51	48.7%
TOTAL	**9582.78**	**5371.74**	**14954.52**	**56.1%**	**1307.96**	**682.87**	**1990.83**	**52.2%**

The existing land areas used were derived from an assessment of land use as it existed in August 2005. This included the use of GIS and current aerial photography. The future land areas were derived by subtracting existing land area from total area at "ultimate" development of the former Shire.

4 Stormwater Plan for Trunk Infrastructure

4.1 Stormwater Trunk Infrastructure Network

For the purposes of this policy, stormwater infrastructure items have been considered in terms of River and Creek levels of planning. Infrastructure is further considered within each service catchment by function in terms of stormwater quantity or quality. Only those infrastructure items indicated on the maps in Schedule D are deemed to be Trunk Infrastructure for the purpose of planning and funding of the Trunk Stormwater Network.

River infrastructure components include the following mapped items along river corridors:

(1) waterway corridor revegetation and rehabilitation of the river system together with any necessary ancillary infrastructure and works;

(2) land needed for stormwater conveyance purposes;

(3) roadway crossing upgrades over waterways for major transport corridors including bridges and culverts.

Creek infrastructure components include the following mapped items along creek corridors:

(1) facilities for conveyance and detention of stormwater including any necessary land component;

(2) works for stormwater treatment including bioretention basins, gross pollutant traps, trash racks, sedimentation basins, wetlands and gully trap filters;

(3) waterway corridor revegetation and rehabilitation of creeks together with any necessary ancillary works;

(4) roadway/bikeway crossing upgrades over waterways for minor local streets including bridges and culverts.

4.2 Stormwater Trunk Infrastructure Items

The terms/titles listed in table 4.2A are used to describe specific components and actions comprising stormwater trunk infrastructure management. A complete definition for each of those terms appears in PSP21G – Administration Policy. These Trunk Infrastructure Items would ordinarily be constructed by Council using Infrastructure Contributions or by a developer where an agreed amount would be credited as 'works in lieu' of contributions payment. In order to qualify for an infrastructure credit the developer would be required to install or construct an agreed infrastructure item that conforms with the performance criteria detailed in the respective Catchment Management Plan (CMP), this policy and/or Council's Planning Scheme Policy 4 Design and Development Manual as well as the Stormwater Code in *Caboolture ShirePlan*. Within the various infrastructure listings, shortened titles are used for some of the infrastructure items as indicated in the Table 4.2A:

Table 4.2A – Stormwater Drainage Infrastructure Descriptions

Infrastructure Title	Short Title
Detention Basin	
Gross Pollutant Traps	GPT
Bioretention devices	Bioretention
Constructed Wetland	Wetland
Revegetation	
Rehabilitation	
Drainage Corridor – Reserve	Corridor – Reserve
Riparian Corridor Management Area	RCMA
Stormwater Quality Improvement Device	SQID
Road Crossing Upgrade	Crossing Upgrade
Open Channel Work	

4.3 Stormwater Trunk Infrastructure Determination

Trunk Infrastructure provision has been informed by the studies and reports identified in Section 2 as well as the "outline planning process" mentioned in section 3.1 of this policy. These studies and planning processes have identified the location and nature of the Stormwater Trunk Infrastructure networks for their respective service catchments.

In regard to the timing of the provision of the infrastructure, it should be noted that the infrastructure listed provides for ultimate development in accordance with the planning assumptions inherent in the *Caboolture*

ShirePlan and that infrastructure is identified outside the DISA. Particularly in the case of stormwater quality infrastructure, some infrastructure has been located external to the DISA for the benefit of development within the DISA where the supporting planning has identified an overall cost effectiveness and enhanced environmental outcomes compared to concentrating the provision of the infrastructure within the DISA.

Water Quantity Infrastructure

Open Channel Work:

Areas requiring Open Channel Work were identified from a hydraulic assessment of the capacity of the existing engineered channels. The need for upgrade was established where these channels were identified as having no additional capacity in areas where future growth was anticipated.

Road Crossing Upgrade (Crossing Upgrade):

Council's adopted Hydrologic Model was used to identify flows and estimated overtopping depths at each Culvert Structure for a range of design flood events. Those structures that did not meet Council's adopted Desired Standards of Service were identified as requiring an upgrade. Where a crossing upgrade was identified as potentially not being feasible, a cost allocation was made for the establishment of non-structural flood safety measures.

Detention Basin:

Council's hydrologic model was also used to run a future growth scenario aimed at identifying the amount of flood storage required to maintain a non-worsening condition in respect of catchment peak flow. The preferred location for detention basins was to be areas of denser urban growth where cumulative catchment area was optimal for placement of detention storage.

Drainage Corridor Reserve (Corridor - Reserve):

The extent of Drainage Corridor Reserve was required to address Council's servicing needs within the DISA and to encapsulate the following:

- for those areas where flood information was available – all areas inundated during a 100 year ARI event where the product of the velocity and depth of stormwater flows measured in – was greater than 0.4
- for those areas where flood information was not available (generally smaller creek systems) – all areas within a 10 metre buffer of a creek centreline for all creeks having a contributing catchment area of at least 10 hectares

Wherever a need for both a Riparian Corridor Management Area and a Drainage Corridor Reserve adjacent to the same feature has been identified, Council has taken due steps to ensure that the dual purpose land requirement is listed against only one of these infrastructure components (generally the larger component).

Given the limitations of available flood information at present, a number of assumptions were made to cost this infrastructure. Generally, Council will look to acquire all land inundated with the 100 year ARI event. However, in some areas it may be necessary for Council to acquire small areas of non-floodprone land to permit maintenance access as well as sensible linkages and layouts for adjoining development. Accordingly, valuation of land for Drainage Corridor Reserve includes 20% of the land at the flood-free rate.

Water Quality Infrastructure

RCMA and Rehabilitation / Revegetation Areas

The requirement for RCMA and rehabilitation/revegetation areas as water quality infrastructure is based on the Caboolture Shire-Wide Waterways Management Strategy undertaken by Natural Solutions in 2008 and up to date costs for this work were calculated using 01 January 2009 unit rates. Timing of Rehabilitation and Revegetation works was based on the Reach Priorities identified in the Strategy.

For those areas outside of the DISA, land identified for acquisition as RCMA was costed at a rate of 20% of the rural land value. For those areas within the DISA, refer discussion on Drainage Corridor Reserve above.

Stormwater Treatment Measures

The conceptual sizing and siting of stormwater treatment measures (STMs) was based solely on addressing the DSS for the ultimate development of the DISA. Stormwater quality issues emanating from land outside of the DISA have not been considered under this infrastructure contributions regime.

Current industry accepted methods of addressing stormwater quality include non-structural source control techniques (processes, prohibitions, and procedures), structural source control measures (generally low-technology practices designed to prevent rainfall or stormwater runoff from contacting pollutants), and micro-scale treatment control STMs located at or near to the source of non-point pollutant discharges.

Structural Treatment Control STMs are engineered technologies designed to remove pollutants from stormwater runoff and are generally required to augment Non-Structural and Structural Source Control STMs to reduce pollution from stormwater discharges to an acceptable level. The type of Treatment Control STMs to be implemented at a site depends on a number of factors including type of pollutants in the stormwater runoff, volume or flow of stormwater runoff to be treated, site constraints, and receiving water conditions. Unlike flood control measures that are designed to handle peak flows, stormwater Treatment Control STMs are designed to treat the more frequent, lower-flow storm events, or the first flush portions of runoff from larger storm events. (Small, frequent storm events represent approximately 90% of the total average annual rainfall for an area.)

The following types of Structural Treatment Control STMs identified on the maps in Schedule D are as the components of the stormwater network used for determining the amount of trunk infrastructure contributions payable for stormwater quality infrastructure:

- gross pollutant traps
- bioretention devices
- constructed wetlands

The methodology used for conceptually determining the size of Structural Treatment Control STMs is based on Healthy Waterways: Water Sensitive Urban Design: Technical Design Guidelines for South East Queensland: Version 1, June 2006 (hereinafter referred to as Healthy Waterways, 2006) and utilises regional research on the pollutant removal performance of various forms of device to guide the appropriate selection and sizing of Structural STMs.

Timing

While a particular development may have an obvious immediate impact on adjacent local drainage infrastructure, the impact of development on Creek and River level is generally for more gradual, thereby allowing Council greater flexibility in staging the delivery of the trunk stormwater network. It is therefore not considered imperative that Council deliver any identified infrastructure in the precise year nominated in tables 4.6A to 4.6D. Nor is it necessary for Council to complete all of one project in the same financial year. However, the delivery of the infrastructure is related to maintaining Council's desired standard of service. This is a function of the anticipated impact of development on stormwater quantity and quality in the various service catchments.

Trunk Infrastructure provision identified in this policy has therefore been based on an assessment of the change in land use consistent with the planning assumptions within each service catchment. Stormwater infrastructure requirements are aligned with land use and land use change, and the resultant change in runoff and pollutant export.

Stormwater infrastructure listed in the capital works program has been prioritised on the basis of a multi-criteria ranking system defined in Council's adopted stormwater capital works prioritisation methodology. The methodology considers a range of factors and results in the determination of the indicative timing for the infrastructure provision. Elements affecting the overall timing for infrastructure include:

(1) risk of flooding or other adverse impact;

(2) possible significant or otherwise unacceptable consequences;

(3) the timing or sequence of development expected within the catchment; and

(4) Council's desire to achieve a relatively uniform distribution of expenditure throughout its Capital Works Program.

4.4 Stormwater Trunk Infrastructure Valuations

Future Stormwater Management Infrastructure requirements and associated costs have been based on the recommendations of existing stormwater management studies or have been identified through an Outline Planning Process.

Infrastructure Cost Determination

(1) Infrastructure Item Costs

An infrastructure costing review was undertaken by Council in 2009. All items were reassessed and the costs of most items of infrastructure were recalculated from first principles. However, for a few items costs were recalculated to 01 January 2009 using various indexation values depending on the type of infrastructure.

(2) Land Acquisition

The estimates of costs for land in the stormwater network have been determined on Council's behalf by Planet Valuation Services for the base date of 01 January 2009 applying a unit rate. The underlying valuation approach used was to adopt a figure reflective of a 'replacement value' of the land. Not included in the valuation were factors such as zoning improvements, severance, injurious affection to adjoining lands and disturbance or enhancement.

The value is not market value as defined by the Australian Property Institute Professional Practice International Standard 1. It ignores the current zoning of the land and adopts a figure, in the case of urban lands, equivalent to the value of englobo residential values, i.e. land held in large parcels suitable for subdivision to allotments and, in the case of rural and rural residential lands, a value in line with that of the surrounding allotments. The value applied is a generic one for that particular locality.

The values have been allocated accordingly to the following land categories:

(a) Land above the Q100 flood level and storm surge which allows for development of the land for dwellings;

(b) Land between Q100 and Q50 flood levels which allows for limited development and usage; and

(c) Land below Q50 flood level which has very limited potential for use intensification and is currently used mainly for agricultural purposes.

Table 4.4A - Estimated Unit Rates for Land Valuation/Acquisition by Suburb ($/m^2) valid at 01 January 2009

Suburb	Above Storm Surge & Q100	Below Storm Surge	Q50-Q100	Below Q50
Banksia Beach	$75	$50	$35	$3
Beachmere	$75	$50	$35	$3
Bellara	$75	$50	$35	$3
Bellmere	$75		$35	$3
Bellthorpe	$2		$2	$2
Bongaree	$75	$50	$25	$3
Booroobin	$2		$2	$2
Bracalba	$2		$2	$2
Burpengary	$50	$35	$20	$3
Caboolture	$75		$35	$3
Caboolture South	$75		$35	$3
Campbells Pocket	$2		$2	$2
Cedarton	$2		$2	$2
Commissioners Flat	$2		$2	$2
D'Aguilar	$10		$4	$2
Deception Bay	$60	$40	$35	$3
Delaney's Creek	$4		$2	$2
Donnybrook	$50	$35	$20	$3
Elimbah	$10		$4	$2
Godwin Beach	$60	$40	$35	$3
Meldale	$2		$2	$2
Moodlu	$10		$4	$2
Moorina	$2		$2	$2
Mount Delaney	$2		$2	$2
Mount Mee	$10		$4	$2
Morayfield	$50		$20	$3

Suburb	Above Storm Surge & Q100	Below Storm Surge	Q50-Q100	Below Q50
Narangba	$50		$20	$3
Neurum	$2		$2	$2
Ningi	$20	$15	$10	$3
Rocksberg	$2		$2	$2
Sandstone Point	$75	$50	$35	$3
Stanmore	$2		$2	$2
Stoney Creek	$2		$2	$2
Toorbul	$50	$35	$20	$3
Upper Caboolture	$50		$20	$3
Wamuran	$10		$4	$2
Wamuran Basin	$2		$2	$2
Welsby	$2		$2	$2
Whitepatch	$50	$35	$20	$3
Woodford	$10		$4	$2
Woorim	$75	$50	$35	$3

4.5 Existing Stormwater Trunk Infrastructure

Infrastructure Contributions have been determined for future infrastructure only. No valuation or accounting of existing infrastructure has been included in this policy. The Trunk Infrastructure requirements determined for this policy are to address the impacts of future development and augmentations in the existing network to meet the DSS. Note that trunk infrastructure items required for both purposes have been apportioned to both existing and future development in order to ensure equitable cost allocation.

4.6 Future Stormwater Plan for Trunk Infrastructure

The maps in Schedule D show the extent of existing and future stormwater trunk infrastructure on which this policy and its infrastructure contributions regime is based, while tables 4.6A to 4.6D provide a detailed listing of each of the various components of future infrastructure, its projected construction date, and its net present value at 1 January 2009.

Table 4.6A– River Quantity Stormwater Works

Project ID	Service Catchment	Type of Works	NPV as at 1 January 2009	Timing of Works (Year)
BUR_CU_1	Burpengary	Crossing Upgrade	$707,698	2012
BUR_CU_10	Burpengary	Crossing Upgrade	$233,680	2014
BUR_CU_11	Burpengary	Crossing Upgrade	$242,615	2014
BUR_CU_13	Burpengary	Crossing Upgrade	$28,553	2014
BUR_CU_17	Burpengary	Crossing Upgrade	$28,553	2014
BUR_CU_18	Burpengary	Crossing Upgrade	$28,553	2014
BUR_CU_19	Burpengary	Crossing Upgrade	$28,553	2014
BUR_CU_2	Burpengary	Crossing Upgrade	$517,275	2011
BUR_CU_20	Burpengary	Crossing Upgrade	$28,553	2014
BUR_CU_21	Burpengary	Crossing Upgrade	$28,553	2014
BUR_CU_22	Burpengary	Crossing Upgrade	$28,318	2015
BUR_CU_3	Burpengary	Crossing Upgrade	$539,900	2011
BUR_CU_4	Burpengary	Crossing Upgrade	$378,798	2011
BUR_CU_5	Burpengary	Crossing Upgrade	$217,794	2012
BUR_CU_6	Burpengary	Crossing Upgrade	$227,524	2012
BUR_CU_7	Burpengary	Crossing Upgrade	$636,926	2012
BUR_CU_8	Burpengary	Crossing Upgrade	$431,793	2012
BUR_CU_9	Burpengary	Crossing Upgrade	$247,523	2013
CAB_CU_1	Caboolture	Crossing Upgrade	$297,232	2012
CAB_CU_3	Caboolture	Crossing Upgrade	$28,318	2015
CAB_CU_4	Caboolture	Crossing Upgrade	$28,318	2015
CAB_CU_5	Caboolture	Crossing Upgrade	$28,318	2015
CBM_CU_2	Caboolture	Crossing Upgrade	$28,318	2015
GOD_CU_1	Caboolture	Crossing Upgrade	$239,620	2012
GOD_CU_10	Caboolture	Crossing Upgrade	$28,318	2015
GOD_CU_5	Caboolture	Crossing Upgrade	$28,318	2015
GOD_CU_6	Caboolture	Crossing Upgrade	$28,318	2015
GOD_CU_7	Caboolture	Crossing Upgrade	$28,318	2015
GOD_CU_8	Caboolture	Crossing Upgrade	$28,318	2015
GOD_CU_9	Caboolture	Crossing Upgrade	$28,318	2015
GYM_CU_1	Caboolture	Crossing Upgrade	$590,994	2012
GYM_CU_2	Caboolture	Crossing Upgrade	$267,426	2014
GYM_CU_4	Caboolture	Crossing Upgrade	$28,318	2015

Project ID	Service Catchment	Type of Works	NPV as at 1 January 2009	Timing of Works (Year)
GYM_CU_5	Caboolture	Crossing Upgrade	$28,318	2015
KJC_CU_1	Caboolture	Crossing Upgrade	$277,229	2011
KJC_CU_2	Caboolture	Crossing Upgrade	$306,012	2012
KJC_CU_3	Caboolture	Crossing Upgrade	$254,878	2012
KJC_CU_4	Caboolture	Crossing Upgrade	$279,099	2012
KJC_CU_5	Caboolture	Crossing Upgrade	$222,628	2013
KJC_CU_6	Caboolture	Crossing Upgrade	$28,318	2015
KJC_CU_7	Caboolture	Crossing Upgrade	$28,318	2015
LAG_CU_1	Caboolture	Crossing Upgrade	$440,536	2012
LAG_CU_10	Caboolture	Crossing Upgrade	$28,086	2016
LAG_CU_11	Caboolture	Crossing Upgrade	$28,086	2016
LAG_CU_2	Caboolture	Crossing Upgrade	$671,733	2012
LAG_CU_3	Caboolture	Crossing Upgrade	$291,938	2013
LAG_CU_4	Caboolture	Crossing Upgrade	$216,250	2013
LAG_CU_7	Caboolture	Crossing Upgrade	$28,553	2014
LAG_CU_8	Caboolture	Crossing Upgrade	$28,318	2015
LAG_CU_9	Caboolture	Crossing Upgrade	$28,318	2015
LBC_CU_1	Burpengary	Crossing Upgrade	$706,857	2012
LBC_CU_10	Burpengary	Crossing Upgrade	$28,086	2016
LBC_CU_11	Burpengary	Crossing Upgrade	$28,086	2016
LBC_CU_12	Burpengary	Crossing Upgrade	$28,086	2016
LBC_CU_13	Burpengary	Crossing Upgrade	$28,086	2016
LBC_CU_14	Burpengary	Crossing Upgrade	$28,086	2016
LBC_CU_2	Burpengary	Crossing Upgrade	$276,986	2012
LBC_CU_3	Burpengary	Crossing Upgrade	$573,475	2012
LBC_CU_4	Burpengary	Crossing Upgrade	$356,820	2014
LBC_CU_7	Burpengary	Crossing Upgrade	$28,553	2014
LBC_CU_8	Burpengary	Crossing Upgrade	$28,086	2016
LBC_CU_9	Burpengary	Crossing Upgrade	$28,086	2016
SSC_CU_1	Caboolture	Crossing Upgrade	$468,661	2012
SSC_CU_10	Caboolture	Crossing Upgrade	$26,731	2022
SSC_CU_11	Caboolture	Crossing Upgrade	$26,731	2022
SSC_CU_2	Caboolture	Crossing Upgrade	$349,571	2012
SSC_CU_3	Caboolture	Crossing Upgrade	$560,241	2012
SSC_CU_4	Caboolture	Crossing Upgrade	$269,430	2013
WAR_CU_1	Caboolture	Crossing Upgrade	$396,154	2012
WAR_CU_2	Caboolture	Crossing Upgrade	$580,880	2013
BRC_RES_1	Stanley River	Drainage Corridor Reserve	$1,220,075	2020
BRI_RES_1	Coastal Creeks	Drainage Corridor Reserve	$14,804,325	2018
BUR_RES_1	Burpengary	Drainage Corridor Reserve	$33,923,764	2012
CAB_RES_1	Caboolture	Drainage Corridor Reserve	$38,539,217	2015
CBM_RES_1	Caboolture	Drainage Corridor Reserve	$3,024,966	2015
DEC_RES_1	Burpengary	Drainage Corridor Reserve	$1,130,894	2016
GOD_RES_1	Caboolture	Drainage Corridor Reserve	$3,349,135	2016
GYM_RES_1	Caboolture	Drainage Corridor Reserve	$18,770,056	2016
KJC_RES_1	Caboolture	Drainage Corridor Reserve	$61,094,389	2019
LAG_RES_1	Caboolture	Drainage Corridor Reserve	$38,136,787	2019
LBC_RES_1	Burpengary	Drainage Corridor Reserve	$7,046,437	2021
MBC_RES_1	Stanley River	Drainage Corridor Reserve	$6,207,523	2021
NIN_RES_1	Coastal Creeks	Drainage Corridor Reserve	$269,269	2021
OM_RES_1	Stanley River	Drainage Corridor Reserve	$4,399,146	2021
SAL_RES_1	Coastal Creeks	Drainage Corridor Reserve	$18,653,872	2025
SMC_RES_1	Coastal Creeks	Drainage Corridor Reserve	$92,175	2021
SSC_RES_1	Caboolture	Drainage Corridor Reserve	$42,029,419	2022
STA_RES_1	Stanley River	Drainage Corridor Reserve	$2,590,335	2024
WAR_RES_1	Caboolture	Drainage Corridor Reserve	$40,583,497	2026
TOTAL			**$350,157,523**	

Table 4.6B– River Quality Stormwater Works

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
BBC_RCMA_1	Coastal Creeks	RCMA	$126,457	2016
BRC_RCMA_10	Stanley River	RCMA	$586,649	2016
BRC_RCMA_4	Stanley River	RCMA	$96,500	2016
BRC_RCMA_5	Stanley River	RCMA	$57,224	2016
BRC_RCMA_6	Stanley River	RCMA	$172,641	2012
BRC_RCMA_7	Stanley River	RCMA	$63,278	2016
BRC_RCMA_8	Stanley River	RCMA	$43,619	2016
BRC_RCMA_9	Stanley River	RCMA	$67,719	2016

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
BUR_RCMA_1	Burpengary	RCMA	$110,578	2021
BUR_RCMA_2	Burpengary	RCMA	$524,341	2021
BUR_RCMA_3	Burpengary	RCMA	$229,356	2021
BUR_RCMA_4	Burpengary	RCMA	$190,614	2021
BUR_RCMA_5	Burpengary	RCMA	$646,492	2021
BYR_RCMA_1	Stanley River	RCMA	$42,783	2012
CAB_RCMA_1	Caboolture	RCMA	$158,532	2021
CAB_RCMA_10	Caboolture	RCMA	$1,081,543	2014
CAB_RCMA_11	Caboolture	RCMA	$135,834	2014
CAB_RCMA_2	Caboolture	RCMA	$23,106	2021
CAB_RCMA_3	Caboolture	RCMA	$238,342	2021
CAB_RCMA_4	Caboolture	RCMA	$569,923	2015
CAB_RCMA_5	Caboolture	RCMA	$961,119	2015
CAB_RCMA_6	Caboolture	RCMA	$42,860	2021
CAB_RCMA_7	Caboolture	RCMA	$579,969	2017
CAB_RCMA_8	Caboolture	RCMA	$901,128	2017
CAB_RCMA_9	Caboolture	RCMA	$206,897	2017
CBM_RCMA_1	Caboolture	RCMA	$64,999	2021
CBM_RCMA_2	Caboolture	RCMA	$34,862	2021
DEL_RCMA_1	Stanley River	RCMA	$105,520	2019
DEL_RCMA_2	Stanley River	RCMA	$16,996	2019
DEL_RCMA_3	Stanley River	RCMA	$275,035	2019
DEL_RCMA_4	Stanley River	RCMA	$102,823	2014
DEL_RCMA_5	Stanley River	RCMA	$351,659	2019
DEL_RCMA_6	Stanley River	RCMA	$136,380	2019
DEL_RCMA_7	Stanley River	RCMA	$437,548	2014
ELI_RCMA_1	Coastal Creeks	RCMA	$9,079	2021
ELI_RCMA_2	Coastal Creeks	RCMA	$45,147	2021
ELI_RCMA_3	Coastal Creeks	RCMA	$68,801	2021
GRE_RCMA_1	Caboolture	RCMA	$3,575	2014
GRE_RCMA_2	Caboolture	RCMA	$147,692	2016
GRE_RCMA_3	Caboolture	RCMA	$19,272	2014
GRE_RCMA_4	Caboolture	RCMA	$116,176	2016
GYM_RCMA_1	Caboolture	RCMA	$259,577	2021
GYM_RCMA_2	Caboolture	RCMA	$53,444	2014
KJC_RCMA_1	Caboolture	RCMA	$311,034	2011
KJC_RCMA_2	Caboolture	RCMA	$180,251	2021
KJC_RCMA_3	Caboolture	RCMA	$576,727	2016
LAG_RCMA_1	Caboolture	RCMA	$586,656	2023
LAG_RCMA_2	Caboolture	RCMA	$33,134	2023
LAG_RCMA_3	Caboolture	RCMA	$1,513,314	2018
LAG_RCMA_5	Caboolture	RCMA	$59,072	2023
LAG_RCMA_6	Caboolture	RCMA	$771	2023
LIT_RCMA_1	Burpengary	RCMA	$121,631	2021
MAR_RCMA_1	Mary River	RCMA	$859,767	2017
MAR_RCMA_2	Mary River	RCMA	$191,476	2017
MAR_RCMA_3	Mary River	RCMA	$301,106	2017
MAR_RCMA_4	Mary River	RCMA	$282,548	2017
MAR_RCMA_5	Mary River	RCMA	$1,113,242	2017
MBC_RCMA_1	Stanley River	RCMA	$90,591	2024
MBC_RCMA_2	Stanley River	RCMA	$301,344	2024
MBC_RCMA_3	Stanley River	RCMA	$355,297	2020
MBC_RCMA_4	Stanley River	RCMA	$158,606	2024
MBC_RCMA_5	Stanley River	RCMA	$230,225	2024
MBC_RCMA_6	Stanley River	RCMA	$42,244	2020
NCN_RCMA_1	Stanley River	RCMA	$53,150	2016
NCN_RCMA_2	Stanley River	RCMA	$10,983	2016
NCN_RCMA_3	Stanley River	RCMA	$77,410	2016
NIN_RCMA_1	Coastal Creeks	RCMA	$220,663	2013
NIN_RCMA_2	Coastal Creeks	RCMA	$96,833	2016
NIN_RCMA_3	Coastal Creeks	RCMA	$323,863	2021
NSC_RCMA_1	Stanley River	RCMA	$1,585	2016
NSC_RCMA_10	Stanley River	RCMA	$125,955	2015
NSC_RCMA_2	Stanley River	RCMA	$267,275	2015
NSC_RCMA_3	Stanley River	RCMA	$66,734	2016
NSC_RCMA_4	Stanley River	RCMA	$26,817	2015
NSC_RCMA_5	Stanley River	RCMA	$70,840	2016
NSC_RCMA_6	Stanley River	RCMA	$10,244	2016
NSC_RCMA_7	Stanley River	RCMA	$84,466	2015
NSC_RCMA_8	Stanley River	RCMA	$3,028	2016

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
NSC_RCMA_9	Stanley River	RCMA	$57,084	2015
OM_RCMA_2	Stanley River	RCMA	$2,597	2016
OM_RCMA_3	Stanley River	RCMA	$165,291	2016
OM_RCMA_4	Stanley River	RCMA	$12,776	2016
RUN_RCMA_1	Stanley River	RCMA	$279,049	2016
RUN_RCMA_2	Stanley River	RCMA	$42,408	2016
RUN_RCMA_3	Stanley River	RCMA	$288,112	2015
RUN_RCMA_4	Stanley River	RCMA	$80,443	2015
RUN_RCMA_5	Stanley River	RCMA	$805,407	2015
SAL_RCMA_1	Coastal Creeks	RCMA	$2,578	2021
SMC_RCMA_1	Coastal Creeks	RCMA	$223,987	2026
SMC_RCMA_3	Coastal Creeks	RCMA	$99,219	2026
SMC_RCMA_4	Coastal Creeks	RCMA	$366,081	2026
SMC_RCMA_5	Coastal Creeks	RCMA	$558,922	2026
SMC_RCMA_6	Coastal Creeks	RCMA	$16,756	2021
SMC_RCMA_7	Coastal Creeks	RCMA	$702,341	2026
SMC_RCMA_8	Coastal Creeks	RCMA	$354,167	2021
SSC_RCMA_1	Caboolture	RCMA	$81,664	2023
SSC_RCMA_2	Caboolture	RCMA	$126,184	2023
SSC_RCMA_3	Caboolture	RCMA	$117,355	2023
STA_RCMA_1	Stanley River	RCMA	$752,122	2025
STA_RCMA_10	Stanley River	RCMA	$1,166,116	2018
STA_RCMA_11	Stanley River	RCMA	$22,199	2025
STA_RCMA_12	Stanley River	RCMA	$680,537	2018
STA_RCMA_13	Stanley River	RCMA	$1,638,205	2025
STA_RCMA_14	Stanley River	RCMA	$104,427	2018
STA_RCMA_2	Stanley River	RCMA	$87,038	2025
STA_RCMA_3	Stanley River	RCMA	$45,515	2025
STA_RCMA_4	Stanley River	RCMA	$538,834	2018
STA_RCMA_5	Stanley River	RCMA	$1,538,133	2019
STA_RCMA_6	Stanley River	RCMA	$1,990	2025
STA_RCMA_7	Stanley River	RCMA	$544,647	2019
STA_RCMA_8	Stanley River	RCMA	$123,650	2025
STA_RCMA_9	Stanley River	RCMA	$66,622	2025
STO_RCMA_1	Stanley River	RCMA	$467,251	2023
STO_RCMA_2	Stanley River	RCMA	$49,888	2012
STO_RCMA_3	Stanley River	RCMA	$396,257	2012
STO_RCMA_4	Stanley River	RCMA	$201,955	2012
STO_RCMA_6	Stanley River	RCMA	$281,428	2012
STO_RCMA_7	Stanley River	RCMA	$717,041	2013
WAR_RCMA_1	Caboolture	RCMA	$621,589	2022
WAR_RCMA_10	Caboolture	RCMA	$83,654	2022
WAR_RCMA_2	Caboolture	RCMA	$354,969	2022
WAR_RCMA_3	Caboolture	RCMA	$963,827	2022
WAR_RCMA_4	Caboolture	RCMA	$56,378	2022
WAR_RCMA_5	Caboolture	RCMA	$1,199,162	2022
WAR_RCMA_6	Caboolture	RCMA	$4,649,458	2022
WAR_RCMA_7	Caboolture	RCMA	$42,133	2022
WAR_RCMA_8	Caboolture	RCMA	$1,040,812	2022
WAR_RCMA_9	Caboolture	RCMA	$99,018	2022
BRC_REH_4	Stanley River	Rehabilitation	$519,025	2016
BRC_REH_5	Stanley River	Rehabilitation	$323,885	2016
BRC_REH_6	Stanley River	Rehabilitation	$1,487,698	2012
BRI_REH_1	Coastal Creeks	Rehabilitation	$3,999,450	2018
BUR_REH_1	Burpengary	Rehabilitation	$1,215,047	2020
BUR_REH_2	Burpengary	Rehabilitation	$3,751,775	2020
CAB_REH_1	Caboolture	Rehabilitation	$652,481	2017
CAB_REH_11	Caboolture	Rehabilitation	$998,083	2021
CAB_REH_2	Caboolture	Rehabilitation	$424,514	2017
CAB_REH_3	Caboolture	Rehabilitation	$2,269,311	2017
CAB_REH_4	Caboolture	Rehabilitation	$3,548,584	2018
CAB_REH_5	Caboolture	Rehabilitation	$5,905,686	2018
CAB_REH_6	Caboolture	Rehabilitation	$254,040	2017
CBM_REH_1	Caboolture	Rehabilitation	$746,460	2021
DEL_REH_1	Stanley River	Rehabilitation	$486,621	2019
DEL_REH_2	Stanley River	Rehabilitation	$226,213	2019
DEL_REH_3	Stanley River	Rehabilitation	$1,888,617	2019
DEL_REH_4	Stanley River	Rehabilitation	$580,597	2023
GRE_REH_1	Caboolture	Rehabilitation	$55,164	2014
GRE_REH_2	Caboolture	Rehabilitation	$1,202,858	2016

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
GYM_REH_1	Caboolture	Rehabilitation	$1,074,088	2021
GYM_REH_2	Caboolture	Rehabilitation	$5,012,003	2014
KJC_REH_1	Caboolture	Rehabilitation	$12,477,161	2016
LAG_REH_1	Caboolture	Rehabilitation	$2,287,712	2023
LAG_REH_2	Caboolture	Rehabilitation	$120,573	2023
LAG_REH_5	Caboolture	Rehabilitation	$354,795	2021
LIT_REH_1	Burpengary	Rehabilitation	$1,263,290	2021
MAR_REH_1	Mary River	Rehabilitation	$4,469,213	2018
MAR_REH_2	Mary River	Rehabilitation	$1,008,823	2018
MBC_REH_1	Stanley River	Rehabilitation	$585,813	2025
MBC_REH_2	Stanley River	Rehabilitation	$1,451,390	2025
MBC_REH_3	Stanley River	Rehabilitation	$2,119,321	2020
MBC_REH_4	Stanley River	Rehabilitation	$1,197,287	2025
NCN_REH_1	Stanley River	Rehabilitation	$286,812	2016
NCN_REH_2	Stanley River	Rehabilitation	$185,029	2016
NIN_REH_1	Coastal Creeks	Rehabilitation	$3,148,777	2014
NSC_REH_1	Stanley River	Rehabilitation	$37,073	2016
NSC_REH_2	Stanley River	Rehabilitation	$2,371,253	2015
NSC_REH_3	Stanley River	Rehabilitation	$478,245	2016
OM_REH_1	Stanley River	Rehabilitation	$214,351	2016
OM_REH_2	Stanley River	Rehabilitation	$33,751	2016
OM_REH_3	Stanley River	Rehabilitation	$978,821	2016
OM_REH_7	Stanley River	Rehabilitation	$208,284	2016
RUN_REH_1	Stanley River	Rehabilitation	$1,600,889	2016
SAL_REH_2	Coastal Creeks	Rehabilitation	$591,217	2021
SMC_REH_1	Coastal Creeks	Rehabilitation	$882,162	2025
SMC_REH_2	Coastal Creeks	Rehabilitation	$145,827	2025
SMC_REH_3	Coastal Creeks	Rehabilitation	$320,445	2025
SSC_REH_1	Caboolture	Rehabilitation	$414,212	2023
SSC_REH_2	Caboolture	Rehabilitation	$1,601,494	2023
SSC_REH_4	Caboolture	Rehabilitation	$856,101	2021
STA_REH_1	Stanley River	Rehabilitation	$2,459,827	2024
STA_REH_2	Stanley River	Rehabilitation	$1,034,289	2024
STA_REH_3	Stanley River	Rehabilitation	$163,126	2024
STA_REH_4	Stanley River	Rehabilitation	$3,147,513	2020
STA_REH_5	Stanley River	Rehabilitation	$8,026,615	2020
STA_REH_6	Stanley River	Rehabilitation	$7,257	2024
STA_REH_7	Stanley River	Rehabilitation	$3,428,930	2021
STO_REH_1	Stanley River	Rehabilitation	$1,722,704	2023
STO_REH_2	Stanley River	Rehabilitation	$439,779	2013
WAR_REH_1	Caboolture	Rehabilitation	$3,056,010	2023
WAR_REH_10	Caboolture	Rehabilitation	$353,449	2023
WAR_REH_2	Caboolture	Rehabilitation	$1,344,123	2023
WAR_REH_3	Caboolture	Rehabilitation	$4,218,795	2023
WAR_REH_4	Caboolture	Rehabilitation	$337,418	2023
WAR_REH_9	Caboolture	Rehabilitation	$351,237	2021
BBC_REV_1	Coastal Creeks	Revegetation	$3,806,169	2019
BBC_REV_2	Coastal Creeks	Revegetation	$250,599	2019
BBC_REV_3	Coastal Creeks	Revegetation	$269,615	2019
BRC_REV_10	Stanley River	Revegetation	$18,222,944	2021
BRC_REV_7	Stanley River	Revegetation	$490,633	2021
BRC_REV_8	Stanley River	Revegetation	$274,910	2021
BRC_REV_9	Stanley River	Revegetation	$597,686	2021
BUR_REV_3	Burpengary	Revegetation	$1,647,193	2021
BUR_REV_4	Burpengary	Revegetation	$3,947,761	2020
BUR_REV_5	Burpengary	Revegetation	$5,707,068	2020
BUR_REV_6	Burpengary	Revegetation	$321,208	2020
CAB_REV_10	Caboolture	Revegetation	$7,401,926	2015
CAB_REV_7	Caboolture	Revegetation	$3,389,689	2015
CAB_REV_8	Caboolture	Revegetation	$6,222,974	2017
CAB_REV_9	Caboolture	Revegetation	$1,022,845	2017
CBM_REV_2	Caboolture	Revegetation	$415,185	2021
DEL_REV_5	Stanley River	Revegetation	$2,145,409	2019
DEL_REV_6	Stanley River	Revegetation	$486,293	2019
DEL_REV_7	Stanley River	Revegetation	$2,559,718	2023
ELI_REV_1	Coastal Creeks	Revegetation	$388,754	2021
ELI_REV_2	Coastal Creeks	Revegetation	$2,608,083	2021
ELI_REV_3	Coastal Creeks	Revegetation	$981,265	2021
ELI_REV_4	Coastal Creeks	Revegetation	$1,739,045	2021
GMC_REV_1	Coastal Creeks	Revegetation	$1,382,633	2021

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
GRE_REV_3	Caboolture	Revegetation	$162,407	2014
GRE_REV_4	Caboolture	Revegetation	$636,648	2016
KJC_REV_2	Caboolture	Revegetation	$1,355,466	2021
KJC_REV_3	Caboolture	Revegetation	$5,402,579	2016
LAG_REV_3	Caboolture	Revegetation	$10,769,953	2017
LAG_REV_4	Caboolture	Revegetation	$777,205	2023
MAR_REV_3	Mary River	Revegetation	$1,580,684	2018
MAR_REV_4	Mary River	Revegetation	$1,618,766	2018
MBC_REV_5	Stanley River	Revegetation	$797,357	2025
MBC_REV_6	Stanley River	Revegetation	$3,208,820	2020
NCN_REV_3	Stanley River	Revegetation	$882,343	2016
NIN_REV_2	Coastal Creeks	Revegetation	$2,235,178	2016
NIN_REV_3	Coastal Creeks	Revegetation	$1,506,181	2021
NSC_REV_4	Stanley River	Revegetation	$624,586	2015
NSC_REV_5	Stanley River	Revegetation	$381,180	2016
NSC_REV_6	Stanley River	Revegetation	$474,463	2016
NSC_REV_7	Stanley River	Revegetation	$3,399,204	2015
OM_REV_5	Stanley River	Revegetation	$1,171,131	2013
OM_REV_4	Stanley River	Revegetation	$2,172,154	2016
OM_REV_6	Stanley River	Revegetation	$24,603	2016
RUN_REV_2	Stanley River	Revegetation	$236,595	2016
RUN_REV_3	Stanley River	Revegetation	$1,951,238	2015
RUN_REV_4	Stanley River	Revegetation	$949,793	2015
SAL_REV_1	Coastal Creeks	Revegetation	$6,546,404	2021
SAL_REV_3	Coastal Creeks	Revegetation	$8,640,245	2021
SMC_REV_4	Coastal Creeks	Revegetation	$171,801	2025
SMC_REV_5	Coastal Creeks	Revegetation	$3,863,802	2025
SMC_REV_6	Coastal Creeks	Revegetation	$2,892,372	2021
SMC_REV_7	Coastal Creeks	Revegetation	$1,057,093	2025
SSC_REV_3	Caboolture	Revegetation	$8,257,843	2023
SSC_REV_5	Caboolture	Revegetation	$88,760	2023
STA_REV_10	Stanley River	Revegetation	$3,913,255	2018
STA_REV_11	Stanley River	Revegetation	$5,834,675	2024
STA_REV_12	Stanley River	Revegetation	$665,488	2019
STA_REV_13	Stanley River	Revegetation	$829,513	2024
STA_REV_14	Stanley River	Revegetation	$566,191	2019
STA_REV_8	Stanley River	Revegetation	$3,492,854	2024
STA_REV_9	Stanley River	Revegetation	$1,693,103	2024
STO_REV_3	Stanley River	Revegetation	$559,192	2013
STO_REV_4	Stanley River	Revegetation	$799,755	2013
STO_REV_5	Stanley River	Revegetation	$696,920	2023
WAR_REV_5	Caboolture	Revegetation	$5,659,244	2024
WAR_REV_6	Caboolture	Revegetation	$23,703,762	2024
WAR_REV_7	Caboolture	Revegetation	$247,326	2024
WAR_REV_8	Caboolture	Revegetation	$3,778,403	2024
TOTAL			**$342,731,780**	

Table 4.6C – Creek Quantity Stormwater Works

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
BUR_CU_12	Burpengary Creek	Crossing Upgrade	$373,437	2014
BUR_CU_14	Burpengary Creek	Crossing Upgrade	$27,855	2017
BUR_CU_15	Burpengary Creek	Crossing Upgrade	$27,627	2018
BUR_CU_16	Burpengary Creek	Crossing Upgrade	$27,627	2018
BUR_DB_1	Burpengary Creek	Detention Basin	$3,304,338	2018
BUR_DB_10	Burpengary Creek	Detention Basin	$262,775	2018
BUR_DB_11	Burpengary Creek	Detention Basin	$623,035	2019
BUR_DB_2	Burpengary Creek	Detention Basin	$103,455	2026
BUR_DB_3	Burpengary Creek	Detention Basin	$751,509	2022
BUR_DB_4	Burpengary Creek	Detention Basin	$1,913,150	2021
BUR_DB_5	Burpengary Creek	Detention Basin	$175,184	2018
BUR_DB_6	Burpengary Creek	Detention Basin	$736,273	2015
BUR_DB_7	Burpengary Creek	Detention Basin	$262,775	2018
BUR_DB_8	Burpengary Creek	Detention Basin	$497,279	2018
BUR_DB_9	Burpengary Creek	Detention Basin	$700,735	2018
BUR_OCW_1	Burpengary Creek	Open Channel Work	$3,770,936	2025
CAB_CU_2	Caboolture River	Crossing Upgrade	$27,855	2017
CAB_DB_1	Caboolture River	Detention Basin	$2,544,443	2012
CAB_DB_10	Caboolture River	Detention Basin	$1,023,918	2026

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
CAB_DB_11	Caboolture River	Detention Basin	$1,255,616	2019
CAB_DB_12	Caboolture River	Detention Basin	$1,279,138	2020
CAB_DB_13	Caboolture River	Detention Basin	$191,673	2023
CAB_DB_2	Caboolture River	Detention Basin	$1,490,103	2018
CAB_DB_3	Caboolture River	Detention Basin	$1,872,739	2022
CAB_DB_4	Caboolture River	Detention Basin	$4,275,413	2017
CAB_DB_5	Caboolture River	Detention Basin	$1,615,225	2025
CAB_DB_6	Caboolture River	Detention Basin	$1,615,225	2025
CAB_DB_7	Caboolture River	Detention Basin	$1,822,135	2021
CAB_DB_8	Caboolture River	Detention Basin	$3,838,015	2020
CAB_DB_9	Caboolture River	Detention Basin	$1,392,794	2014
CAB_OCW_1	Caboolture River	Open Channel Work	$1,202,843	2023
CBM_CU_1	Caboolture Mouth	Crossing Upgrade	$27,627	2018
DEC_DB_1	Deception Bay	Detention Basin	$632,053	2014
DEC_DB_2	Deception Bay	Detention Basin	$642,182	2015
DEC_OCW_1	Deception Bay	Open Channel Work	$720,682	2015
DEC_OCW_2	Deception Bay	Open Channel Work	$388,265	2012
GOD_CU_2	Godwin Beach	Crossing Upgrade	$27,855	2017
GOD_CU_3	Godwin Beach	Crossing Upgrade	$27,855	2017
GOD_CU_4	Godwin Beach	Crossing Upgrade	$27,627	2018
GOD_DB_1	Godwin Beach	Detention Basin	$1,096,931	2026
GRE_CU_1	Gregors Creek	Crossing Upgrade	$104,942	2014
GRE_CU_2	Gregors Creek	Crossing Upgrade	$101,534	2014
GRE_CU_3	Gregors Creek	Crossing Upgrade	$27,627	2018
GYM_CU_3	Gympie Creek	Crossing Upgrade	$482,903	2014
GYM_DB_1	Gympie Creek	Detention Basin	$1,850,438	2026
GYM_DB_2	Gympie Creek	Detention Basin	$1,100,605	2025
GYM_DB_3	Gympie Creek	Detention Basin	$1,565,305	2021
KJC_DB_1	King John Creek	Detention Basin	$811,683	2026
KJC_DB_10	King John Creek	Detention Basin	$2,720,064	2023
KJC_DB_11	King John Creek	Detention Basin	$1,195,890	2023
KJC_DB_12	King John Creek	Detention Basin	$2,451,126	2024
KJC_DB_13	King John Creek	Detention Basin	$1,096,233	2024
KJC_DB_14	King John Creek	Detention Basin	$1,096,233	2024
KJC_DB_15	King John Creek	Detention Basin	$691,974	2022
KJC_DB_16	King John Creek	Detention Basin	$1,490,103	2018
KJC_DB_2	King John Creek	Detention Basin	$5,694,248	2024
KJC_DB_3	King John Creek	Detention Basin	$3,476,626	2026
KJC_DB_4	King John Creek	Detention Basin	$1,420,821	2026
KJC_DB_5	King John Creek	Detention Basin	$1,369,834	2024
KJC_DB_6	King John Creek	Detention Basin	$1,303,077	2023
KJC_DB_7	King John Creek	Detention Basin	$925,169	2021
KJC_DB_8	King John Creek	Detention Basin	$986,842	2020
KJC_DB_9	King John Creek	Detention Basin	$4,092,301	2022
LAG_CU_5	Lagoon Creek	Crossing Upgrade	$164,836	2014
LAG_CU_6	Lagoon Creek	Crossing Upgrade	$122,045	2014
LAG_DB_1	Lagoon Creek	Detention Basin	$829,231	2023
LAG_DB_10	Lagoon Creek	Detention Basin	$1,672,754	2015
LAG_DB_11	Lagoon Creek	Detention Basin	$1,697,583	2013
LAG_DB_12	Lagoon Creek	Detention Basin	$1,613,673	2016
LAG_DB_2	Lagoon Creek	Detention Basin	$1,162,490	2026
LAG_DB_3	Lagoon Creek	Detention Basin	$473,846	2023
LAG_DB_4	Lagoon Creek	Detention Basin	$437,060	2026
LAG_DB_5	Lagoon Creek	Detention Basin	$3,194,672	2022
LAG_DB_6	Lagoon Creek	Detention Basin	$1,315,789	2020
LAG_DB_7	Lagoon Creek	Detention Basin	$1,733,584	2015
LAG_DB_8	Lagoon Creek	Detention Basin	$1,204,222	2016
LAG_DB_9	Lagoon Creek	Detention Basin	$674,059	2016
LAG_OCW_1	Lagoon Creek	Open Channel Work	$845,969	2015
LBC_CU_5	Little Burpengary Creek	Crossing Upgrade	$270,880	2014
LBC_CU_6	Little Burpengary Creek	Crossing Upgrade	$102,204	2014
LBC_DB_1	Little Burpengary Creek	Detention Basin	$2,092,693	2019
LBC_DB_2	Little Burpengary Creek	Detention Basin	$1,674,154	2019
LBC_DB_3	Little Burpengary Creek	Detention Basin	$921,721	2021
LBC_DB_4	Little Burpengary Creek	Detention Basin	$1,677,122	2026
LBC_DB_5	Little Burpengary Creek	Detention Basin	$902,933	2014
LBC_DB_6	Little Burpengary Creek	Detention Basin	$396,455	2015
LBC_OCW_1	Little Burpengary Creek	Open Channel Work	$1,094,013	2021
LBC_OCW_2	Little Burpengary Creek	Open Channel Work	$1,308,894	2019
SSC_CU_5	Sheepstation Creek	Crossing Upgrade	$150,892	2014

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
SSC_CU_6	Sheepstation Creek	Crossing Upgrade	$27,855	2017
SSC_CU_7	Sheepstation Creek	Crossing Upgrade	$27,855	2017
SSC_CU_8	Sheepstation Creek	Crossing Upgrade	$27,855	2017
SSC_CU_9	Sheepstation Creek	Crossing Upgrade	$27,627	2018
SSC_DB_1	Sheepstation Creek	Detention Basin	$845,448	2022
SSC_DB_2	Sheepstation Creek	Detention Basin	$375,755	2022
SSC_DB_3	Sheepstation Creek	Detention Basin	$1,586,248	2012
SSC_DB_4	Sheepstation Creek	Detention Basin	$427,691	2022
SSC_DB_5	Sheepstation Creek	Detention Basin	$2,428,741	2019
SSC_DB_6	Sheepstation Creek	Detention Basin	$553,032	2021
SSC_DB_7	Sheepstation Creek	Detention Basin	$374,230	2022
SSC_DB_8	Sheepstation Creek	Detention Basin	$2,131,897	2020
SSC_DB_9	Sheepstation Creek	Detention Basin	$509,728	2015
SSC_OCW_1	Sheepstation Creek	Open Channel Work	$2,161,860	2017
SSC_OCW_2	Sheepstation Creek	Open Channel Work	$3,240,283	2013
WAR_CU_3	Wararba Creek	Crossing Upgrade	$298,185	2014
WAR_CU_4	Wararba Creek	Crossing Upgrade	$27,627	2018
WAR_DB_1	Wararba Creek	Detention Basin	$1,700,040	2023
WAR_DB_2	Wararba Creek	Detention Basin	$2,203,222	2022
WAR_DB_3	Wararba Creek	Detention Basin	$2,203,222	2022
TOTAL			**$127,563,955**	

Table 4.6D – Creek Quality Stormwater Works

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
BRI_BIO_1	Bribie Island	Bioretention	$36,562,724	2014
BUL_BIO_1	Bullock Creek	Bioretention	$753,131	2023
BUR_BIO_10	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_11	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_12	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_13	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_14	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_15	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_16	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_17	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_18	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_19	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_2	Burpengary Creek	Bioretention	$814,692	2011
BUR_BIO_20	Burpengary Creek	Bioretention	$814,692	2011
BUR_BIO_21	Burpengary Creek	Bioretention	$814,692	2011
BUR_BIO_22	Burpengary Creek	Bioretention	$814,692	2011
BUR_BIO_23	Burpengary Creek	Bioretention	$781,802	2016
BUR_BIO_24	Burpengary Creek	Bioretention	$808,005	2012
BUR_BIO_25	Burpengary Creek	Bioretention	$781,802	2016
BUR_BIO_26	Burpengary Creek	Bioretention	$781,802	2016
BUR_BIO_27	Burpengary Creek	Bioretention	$814,692	2011
BUR_BIO_28	Burpengary Creek	Bioretention	$808,005	2012
BUR_BIO_29	Burpengary Creek	Bioretention	$781,802	2016
BUR_BIO_3	Burpengary Creek	Bioretention	$737,974	2023
BUR_BIO_30	Burpengary Creek	Bioretention	$808,005	2012
BUR_BIO_31	Burpengary Creek	Bioretention	$781,802	2016
BUR_BIO_32	Burpengary Creek	Bioretention	$781,802	2016
BUR_BIO_33	Burpengary Creek	Bioretention	$781,802	2016
BUR_BIO_34	Burpengary Creek	Bioretention	$769,021	2018
BUR_BIO_35	Burpengary Creek	Bioretention	$769,021	2018
BUR_BIO_36	Burpengary Creek	Bioretention	$769,021	2018
BUR_BIO_37	Burpengary Creek	Bioretention	$769,021	2018
BUR_BIO_38	Burpengary Creek	Bioretention	$769,021	2018
BUR_BIO_39	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_4	Burpengary Creek	Bioretention	$737,974	2023
BUR_BIO_40	Burpengary Creek	Bioretention	$775,385	2017
BUR_BIO_41	Burpengary Creek	Bioretention	$762,709	2019
BUR_BIO_42	Burpengary Creek	Bioretention	$762,709	2019
BUR_BIO_43	Burpengary Creek	Bioretention	$762,709	2019
BUR_BIO_44	Burpengary Creek	Bioretention	$762,709	2019
BUR_BIO_45	Burpengary Creek	Bioretention	$762,709	2019
BUR_BIO_46	Burpengary Creek	Bioretention	$762,709	2019
BUR_BIO_47	Burpengary Creek	Bioretention	$762,709	2019

Project ID	SERVICE CATCHMENT	TYPE OF WORK	NPV (as at 1 January 2009)	TIMING OF WORKS (YEAR)
BUR_BIO_48	Burpengary Creek	Bioretention	$762,709	2019
BUR_BIO_49	Burpengary Creek	Bioretention	$737,974	2023
BUR_BIO_5	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_50	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_51	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_52	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_53	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_54	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_55	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_56	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_57	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_58	Burpengary Creek	Bioretention	$756,449	2020
BUR_BIO_6	Burpengary Creek	Bioretention	$737,974	2023
BUR_BIO_7	Burpengary Creek	Bioretention	$737,974	2023
BUR_BIO_8	Burpengary Creek	Bioretention	$737,974	2023
BUR_BIO_9	Burpengary Creek	Bioretention	$737,974	2023
BUR_WET_1	Burpengary Creek	Wetland	$1,261,298	2013
BUR_WET_10	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_11	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_12	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_13	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_14	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_15	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_16	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_17	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_18	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_19	Burpengary Creek	Wetland	$1,210,378	2018
BUR_WET_2	Burpengary Creek	Wetland	$1,261,298	2013
BUR_WET_20	Burpengary Creek	Wetland	$1,190,590	2020
BUR_WET_21	Burpengary Creek	Wetland	$1,190,590	2020
BUR_WET_22	Burpengary Creek	Wetland	$1,190,590	2020
BUR_WET_3	Burpengary Creek	Wetland	$1,261,298	2013
BUR_WET_4	Burpengary Creek	Wetland	$1,261,298	2013
BUR_WET_5	Burpengary Creek	Wetland	$1,261,298	2013
BUR_WET_6	Burpengary Creek	Wetland	$1,261,298	2013
BUR_WET_7	Burpengary Creek	Wetland	$1,261,298	2013
BUR_WET_8	Burpengary Creek	Wetland	$1,261,298	2013
BUR_WET_9	Burpengary Creek	Wetland	$1,261,298	2013
CAB_BIO_59	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_60	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_61	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_62	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_63	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_64	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_65	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_66	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_67	Caboolture River	Bioretention	$1,284,781	2011
CAB_BIO_68	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_69	Caboolture River	Bioretention	$1,222,793	2017
CAB_BIO_70	Caboolture River	Bioretention	$1,284,781	2011
CAB_BIO_71	Caboolture River	Bioretention	$1,284,781	2011
CAB_BIO_72	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_73	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_74	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_75	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_76	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_77	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_78	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_79	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_80	Caboolture River	Bioretention	$1,212,757	2018
CAB_BIO_81	Caboolture River	Bioretention	$1,284,781	2011
CAB_BIO_82	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_83	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_84	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_85	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_86	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_87	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_88	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_89	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_90	Caboolture River	Bioretention	$1,284,781	2011

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CAB_BIO_91	Caboolture River	Bioretention	$1,192,930	2020
CAB_BIO_92	Caboolture River	Bioretention	$1,192,930	2020
CAB_WET_23	Caboolture River	Wetland	$2,018,757	2012
CAB_WET_24	Caboolture River	Wetland	$2,018,757	2012
CAB_WET_25	Caboolture River	Wetland	$2,018,757	2012
CAB_WET_26	Caboolture River	Wetland	$2,018,757	2012
CAB_WET_27	Caboolture River	Wetland	$2,018,757	2012
CAB_WET_28	Caboolture River	Wetland	$2,018,757	2012
CAB_WET_29	Caboolture River	Wetland	$2,002,187	2013
CAB_WET_30	Caboolture River	Wetland	$2,002,187	2013
CAB_WET_31	Caboolture River	Wetland	$2,002,187	2013
CAB_WET_32	Caboolture River	Wetland	$2,002,187	2013
CAB_WET_33	Caboolture River	Wetland	$2,002,187	2013
CAB_WET_34	Caboolture River	Wetland	$2,002,187	2013
DEC_BIO_2	Deception Bay	Bioretention	$11,508,757	2015
ELI_BIO_3	Elimbah Creek	Bioretention	$1,112,215	2018
GMC_WET_35	Glass Mountain Creek	Wetland	$1,017,782	2023
GMC_WET_36	Glass Mountain Creek	Wetland	$1,017,782	2023
GOD_BIO_100	Godwin Beach	Bioretention	$340,056	2026
GOD_BIO_101	Godwin Beach	Bioretention	$340,056	2026
GOD_BIO_102	Godwin Beach	Bioretention	$384,805	2011
GOD_BIO_103	Godwin Beach	Bioretention	$384,805	2011
GOD_BIO_104	Godwin Beach	Bioretention	$384,805	2011
GOD_BIO_105	Godwin Beach	Bioretention	$384,805	2011
GOD_BIO_106	Godwin Beach	Bioretention	$384,805	2011
GOD_BIO_107	Godwin Beach	Bioretention	$384,805	2011
GOD_BIO_108	Godwin Beach	Bioretention	$384,805	2011
GOD_BIO_109	Godwin Beach	Bioretention	$384,805	2011
GOD_BIO_110	Godwin Beach	Bioretention	$360,251	2019
GOD_BIO_111	Godwin Beach	Bioretention	$340,056	2026
GOD_BIO_112	Godwin Beach	Bioretention	$360,251	2019
GOD_BIO_113	Godwin Beach	Bioretention	$340,056	2026
GOD_BIO_114	Godwin Beach	Bioretention	$360,251	2019
GOD_BIO_115	Godwin Beach	Bioretention	$360,251	2019
GOD_BIO_4	Godwin Beach	Bioretention	$576,526	2026
GOD_BIO_5	Godwin Beach	Bioretention	$127,092	2026
GOD_BIO_6	Godwin Beach	Bioretention	$1,185,049	2026
GOD_BIO_7	Godwin Beach	Bioretention	$195,643	2026
GOD_BIO_8	Godwin Beach	Bioretention	$4,707,497	2026
GOD_BIO_9	Godwin Beach	Bioretention	$4,272,579	2026
GOD_BIO_93	Godwin Beach	Bioretention	$369,270	2016
GOD_BIO_94	Godwin Beach	Bioretention	$369,270	2016
GOD_BIO_95	Godwin Beach	Bioretention	$357,295	2020
GOD_BIO_96	Godwin Beach	Bioretention	$357,295	2020
GOD_BIO_97	Godwin Beach	Bioretention	$357,295	2020
GOD_BIO_98	Godwin Beach	Bioretention	$357,295	2020
GOD_BIO_99	Godwin Beach	Bioretention	$357,295	2020
GOD_WET_37	Godwin Beach	Wetland	$547,548	2020
GOD_WET_38	Godwin Beach	Wetland	$547,548	2020
GOD_WET_39	Godwin Beach	Wetland	$552,080	2019
GOD_WET_40	Godwin Beach	Wetland	$547,548	2020
GOD_WET_41	Godwin Beach	Wetland	$547,548	2020
GOD_WET_42	Godwin Beach	Wetland	$547,548	2020
GOD_WET_43	Godwin Beach	Wetland	$543,054	2021
GOD_WET_44	Godwin Beach	Wetland	$543,054	2021
GOD_WET_45	Godwin Beach	Wetland	$543,054	2021
GOD_WET_46	Godwin Beach	Wetland	$543,054	2021
GYM_BIO_116	Gympie Creek	Bioretention	$673,811	2011
GYM_BIO_117	Gympie Creek	Bioretention	$673,811	2011
GYM_BIO_118	Gympie Creek	Bioretention	$673,811	2011
GYM_WET_47	Gympie Creek	Wetland	$1,003,850	2017
GYM_WET_48	Gympie Creek	Wetland	$1,003,850	2017
GYM_WET_49	Gympie Creek	Wetland	$1,003,850	2017
GYM_WET_50	Gympie Creek	Wetland	$1,003,850	2017
GYM_WET_51	Gympie Creek	Wetland	$1,003,850	2017
GYM_WET_52	Gympie Creek	Wetland	$979,334	2020
GYM_WET_53	Gympie Creek	Wetland	$979,334	2020
GYM_WET_54	Gympie Creek	Wetland	$979,334	2020
GYM_WET_55	Gympie Creek	Wetland	$979,334	2020
GYM_WET_56	Gympie Creek	Wetland	$979,334	2020

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GYM_WET_57	Gympie Creek	Wetland	$979,334	2020
GYM_WET_58	Gympie Creek	Wetland	$1,012,158	2016
KJC_BIO_119	King John Creek	Bioretention	$1,276,387	2013
KJC_WET_59	King John Creek	Wetland	$2,058,277	2011
KJC_WET_60	King John Creek	Wetland	$2,058,277	2011
KJC_WET_61	King John Creek	Wetland	$2,058,277	2011
KJC_WET_62	King John Creek	Wetland	$2,058,277	2011
KJC_WET_63	King John Creek	Wetland	$2,058,277	2011
KJC_WET_64	King John Creek	Wetland	$2,058,277	2011
KJC_WET_65	King John Creek	Wetland	$2,058,277	2011
KJC_WET_66	King John Creek	Wetland	$2,058,277	2011
KJC_WET_67	King John Creek	Wetland	$2,058,277	2011
KJC_WET_68	King John Creek	Wetland	$2,024,628	2013
KJC_WET_69	King John Creek	Wetland	$2,024,628	2013
KJC_WET_70	King John Creek	Wetland	$2,024,628	2013
LAG_BIO_120	Lagoon Creek	Bioretention	$1,642,896	2013
LAG_BIO_121	Lagoon Creek	Bioretention	$1,642,896	2013
LAG_BIO_122	Lagoon Creek	Bioretention	$1,642,896	2013
LAG_BIO_123	Lagoon Creek	Bioretention	$1,602,773	2016
LAG_BIO_124	Lagoon Creek	Bioretention	$1,602,773	2016
LAG_BIO_125	Lagoon Creek	Bioretention	$1,602,773	2016
LAG_WET_71	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_72	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_73	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_74	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_75	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_76	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_77	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_78	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_79	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_80	Lagoon Creek	Wetland	$2,425,531	2022
LAG_WET_81	Lagoon Creek	Wetland	$2,405,622	2023
LAG_WET_82	Lagoon Creek	Wetland	$2,405,622	2023
LAG_WET_83	Lagoon Creek	Wetland	$2,405,622	2023
LBC_BIO_10	Little Burpengary Creek	Bioretention	$12,831,754	2013
MBC_WET_100	Monkeybong Creek	Wetland	$436,597	2013
MBC_WET_101	Monkeybong Creek	Wetland	$436,597	2013
MBC_WET_102	Monkeybong Creek	Wetland	$436,597	2013
MBC_WET_103	Monkeybong Creek	Wetland	$436,597	2013
MBC_WET_104	Monkeybong Creek	Wetland	$436,597	2013
MBC_WET_105	Monkeybong Creek	Wetland	$436,597	2013
MBC_WET_106	Monkeybong Creek	Wetland	$436,597	2013
MBC_WET_107	Monkeybong Creek	Wetland	$433,013	2014
MBC_WET_108	Monkeybong Creek	Wetland	$433,013	2014
MBC_WET_109	Monkeybong Creek	Wetland	$433,013	2014
MBC_WET_95	Monkeybong Creek	Wetland	$422,438	2017
MBC_WET_96	Monkeybong Creek	Wetland	$422,438	2017
MBC_WET_97	Monkeybong Creek	Wetland	$422,438	2017
MBC_WET_98	Monkeybong Creek	Wetland	$422,438	2017
MBC_WET_99	Monkeybong Creek	Wetland	$422,438	2017
NIN_BIO_127	Ningi Creek	Bioretention	$206,793	2011
NIN_BIO_128	Ningi Creek	Bioretention	$206,793	2011
NIN_WET_110	Ningi Creek	Wetland	$289,813	2015
NIN_WET_111	Ningi Creek	Wetland	$289,813	2015
NIN_WET_112	Ningi Creek	Wetland	$289,813	2015
NIN_WET_113	Ningi Creek	Wetland	$289,813	2015
NIN_WET_114	Ningi Creek	Wetland	$289,813	2015
NIN_WET_115	Ningi Creek	Wetland	$289,813	2015
OM_BIO_129	One Mile Creek	Bioretention	$789,103	2011
OM_BIO_130	One Mile Creek	Bioretention	$789,103	2011
OM_BIO_131	One Mile Creek	Bioretention	$789,103	2011
OM_BIO_132	One Mile Creek	Bioretention	$789,103	2011
OM_WET_116	One Mile Creek	Wetland	$1,215,501	2013
OM_WET_117	One Mile Creek	Wetland	$1,215,501	2013
OM_WET_118	One Mile Creek	Wetland	$1,215,501	2013
OM_WET_119	One Mile Creek	Wetland	$1,215,501	2013
OM_WET_120	One Mile Creek	Wetland	$1,215,501	2013
OM_WET_121	One Mile Creek	Wetland	$1,215,501	2013
SAL_WET_122	Saltwater Creek	Wetland	$1,711,665	2017
SAL_WET_123	Saltwater Creek	Wetland	$1,464,682	2017

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SAL_WET_124	Saltwater Creek	Wetland	$212,124	2017
SAL_WET_125	Saltwater Creek	Wetland	$1,512,379	2016
SAL_WET_126	Saltwater Creek	Wetland	$1,226,520	2017
SAL_WET_127	Saltwater Creek	Wetland	$3,519,935	2017
SAL_WET_128	Saltwater Creek	Wetland	$2,434,973	2017
SAL_WET_129	Saltwater Creek	Wetland	$1,826,336	2017
SAL_WET_130	Saltwater Creek	Wetland	$1,826,336	2017
SAL_WET_131	Saltwater Creek	Wetland	$1,235,340	2017
SAL_WET_132	Saltwater Creek	Wetland	$944,253	2017
SAL_WET_133	Saltwater Creek	Wetland	$2,814,269	2017
SAL_WET_134	Saltwater Creek	Wetland	$141,558	2017
SSC_BIO_133	Sheepstation Creek	Bioretention	$1,495,961	2016
SSC_BIO_134	Sheepstation Creek	Bioretention	$1,495,961	2016
SSC_BIO_135	Sheepstation Creek	Bioretention	$1,495,961	2016
SSC_BIO_136	Sheepstation Creek	Bioretention	$1,495,961	2016
SSC_BIO_137	Sheepstation Creek	Bioretention	$1,520,824	2014
SSC_WET_135	Sheepstation Creek	Wetland	$2,414,287	2014
SSC_WET_136	Sheepstation Creek	Wetland	$2,414,287	2014
SSC_WET_137	Sheepstation Creek	Wetland	$2,414,287	2014
SSC_WET_138	Sheepstation Creek	Wetland	$2,414,287	2014
SSC_WET_139	Sheepstation Creek	Wetland	$2,414,287	2014
SSC_WET_140	Sheepstation Creek	Wetland	$2,414,287	2014
SSC_WET_141	Sheepstation Creek	Wetland	$2,414,287	2014
SSC_WET_142	Sheepstation Creek	Wetland	$2,414,287	2014
SSC_WET_143	Sheepstation Creek	Wetland	$2,241,685	2023
SSC_WET_144	Sheepstation Creek	Wetland	$2,241,685	2023
SSC_WET_145	Sheepstation Creek	Wetland	$2,241,685	2023
SSC_WET_146	Sheepstation Creek	Wetland	$2,394,470	2015
SSC_WET_147	Sheepstation Creek	Wetland	$2,394,470	2015
SSC_WET_148	Sheepstation Creek	Wetland	$2,374,817	2016
SSC_WET_149	Sheepstation Creek	Wetland	$2,374,817	2016
SSC_WET_150	Sheepstation Creek	Wetland	$2,374,817	2016
SSC_WET_151	Sheepstation Creek	Wetland	$2,374,817	2016
SSC_WET_152	Sheepstation Creek	Wetland	$2,374,817	2016
STA_BIO_138	Stanley River	Bioretention	$499,127	2014
STA_WET_153	Stanley River	Wetland	$751,502	2017
STA_WET_154	Stanley River	Wetland	$751,502	2017
WAR_BIO_139	Wararba Creek	Bioretention	$442,270	2014
WAR_BIO_140	Wararba Creek	Bioretention	$442,270	2014
WAR_BIO_141	Wararba Creek	Bioretention	$453,342	2011
WAR_BIO_142	Wararba Creek	Bioretention	$442,270	2014
WAR_BIO_143	Wararba Creek	Bioretention	$453,342	2011
WAR_BIO_144	Wararba Creek	Bioretention	$417,477	2021
WAR_BIO_145	Wararba Creek	Bioretention	$442,270	2014
WAR_BIO_146	Wararba Creek	Bioretention	$442,270	2014
WAR_BIO_147	Wararba Creek	Bioretention	$438,640	2015
WAR_BIO_148	Wararba Creek	Bioretention	$438,640	2015
WAR_BIO_149	Wararba Creek	Bioretention	$438,640	2015
WAR_BIO_150	Wararba Creek	Bioretention	$438,640	2015
WAR_BIO_151	Wararba Creek	Bioretention	$438,640	2015
WAR_BIO_152	Wararba Creek	Bioretention	$438,640	2015
WAR_BIO_153	Wararba Creek	Bioretention	$438,640	2015
WAR_WET_155	Wararba Creek	Wetland	$698,173	2011
WAR_WET_156	Wararba Creek	Wetland	$698,173	2011
WAR_WET_157	Wararba Creek	Wetland	$698,173	2011
WAR_WET_158	Wararba Creek	Wetland	$698,173	2011
WAR_WET_159	Wararba Creek	Wetland	$698,173	2011
WAR_WET_160	Wararba Creek	Wetland	$698,173	2011
WAR_WET_161	Wararba Creek	Wetland	$698,173	2011
WAR_WET_162	Wararba Creek	Wetland	$698,173	2011
WAR_WET_163	Wararba Creek	Wetland	$698,173	2011
WAR_WET_164	Wararba Creek	Wetland	$698,173	2011
WAR_WET_165	Wararba Creek	Wetland	$698,173	2011
WAR_WET_166	Wararba Creek	Wetland	$698,173	2011
WAR_WET_167	Wararba Creek	Wetland	$698,173	2011
WAR_WET_168	Wararba Creek	Wetland	$698,173	2011
TOTAL			**$415,877,929**	

4.7 Stormwater Infrastructure Costs by Catchment

The distribution of the costs of future planned infrastructure works apportioned between existing and future development is demonstrated in Table 4.7A. The level of future development contribution towards the total cost of the stormwater infrastructure network per catchment is highlighted in the table.

The proportion of future infrastructure expenditure anticipated to be collected from future development after 01 January 2009 is equivalent to 58.8%, without giving regard to the effects of the capping regime. The remaining 41.2% of future infrastructure costs will be funded directly by Council so that costs associated with augmentations within the existing network to meet the DSS are not passed to proponents of development approved after 1 January 2009.

Table 4.7A – Future Stormwater Infrastructure Costs by Catchment allocated between existing and future demand in NPV as at 01 January 2009

Catchment	Quantity Existing	Quantity Future	Total Quantity	Quality Existing	Quality Future	Total Quality	Estimated % funding rate[2]
Caboolture River	$4,212,297	$314,745,626	$318,957,923	$222,501,879	$104,107,515	$326,609,395	64.88%
Burpengary River	$5,360,574	$61,229,073	$66,589,647	$64,802,075	$5,400,647	$70,202,722	48.71%
North Pine River	$0	$0	$0	$0	$0	$0	0.00%
Mary River	$0	$0	$0	$11,425,625	$0	$11,425,625	0.00%
Caboolture Mouth	$23,524	$4,102	$27,627	$0	$0	$0	14.85%
Godwin Beach	$57,443	$1,122,825	$1,180,269	$7,877,350	$3,187,036	$11,064,386	35.20%
Gregors Creek	$234,103	$0	$234,103	$0	$0	$0	0.00%
Gympie Creek	$190,818	$4,808,432	$4,999,250	$4,452,762	$9,476,082	$13,928,844	75.47%
King Johns Creek	$0	$30,822,224	$30,822,224	$12,158,368	$13,716,399	$25,874,767	78.56%
Lagoon Creek	$157,460	$16,984,352	$17,141,813	$22,171,952	$19,037,231	$41,209,183	61.73%
Sheep Station Creek	$164,584	$14,732,413	$14,896,998	$28,472,183	$21,734,858	$50,207,041	56.01%
Wararba Creek	$219,143	$6,213,153	$6,432,296	$9,835,196	$6,545,219	$16,380,415	55.93%
Deception Bay	$0	$2,383,183	$2,383,183	$9,255,780	$2,252,976	$11,508,757	33.37%
Little Burpengary Creek	$271,487	$10,169,582	$10,441,069	$9,366,366	$3,465,388	$12,831,754	58.59%
Black Rock Creek	$0	$0	$0	$0	$0	$0	0.00%
Byron Creek	$0	$0	$0	$0	$0	$0	0.00%
Delaney Creek	$0	$0	$0	$0	$0	$0	0.00%
Monkeybong Creek	$0	$0	$0	$3,150,748	$3,316,659	$6,467,407	51.28%
Neurum Creek North	$0	$0	$0	$0	$0	$0	0.00%
Neurum South Creek	$0	$0	$0	$0	$0	$0	0.00%
One Mile Creek	$0	$0	$0	$7,405,632	$3,043,784	$10,449,415	29.13%
Running Creek	$0	$0	$0	$0	$0	$0	0.00%
Stanley River Creek	$0	$0	$0	$1,479,598	$522,533	$2,002,132	26.10%
Stony Creek	$0	$0	$0	$0	$0	$0	0.00%
North Pine River	$0	$0	$0	$0	$0	$0	0.00%
Sideling Dam	$0	$0	$0	$0	$0	$0	0.00%
Terrors Creek	$0	$0	$0	$0	$0	$0	0.00%
Beerburrum Creek	$0	$0	$0	$0	$0	$0	0.00%
Bribie Island	$0	$0	$0	$32,146,365	$4,416,360	$36,562,724	12.08%
Bullock Creek	$0	$0	$0	$635,420	$117,711	$753,131	15.63%
Saltwater Creek	$0	$0	$0	$8,514,449	$12,355,922	$20,870,371	59.20%
Six Mile Creek	$0	$0	$0	$0	$0	$0	0.00%
Elimbah	$0	$0	$0	$1,109,494	$2,720	$1,112,215	0.24%
Glass Mountain	$0	$0	$0	$850,593	$1,184,971	$2,035,564	58.21%
Ningi	$0	$0	$0	$2,083,351	$69,112	$2,152,463	3.21%
coastal Creeks	$0	$37,201,606	$37,201,606	$38,538,919	$12,103,098	$50,642,018	56.13%
Total	**$10,891,435**	**$500,416,571**	**$511,308,006**	**$498,234,105**	**$226,056,224**	**$724,290,329**	**58.80%**

[2] Future Infrastructure Costs are allocated to both existing and future demand. This value represents the estimated level of funding for future infrastructure to be met by Contributions in each catchment. The remainder of funding for the planned works is to be met by Council's own funds. The actual level of contribution is dependent on actual growth and its timing.

Table 4.7B – Future Stormwater Infrastructure cost allocation between current and future demand in NPV as at 01 January 2009

Allocation of Development	Quantity	Quality	Total
Existing Development	$10,891,435	$498,234,105	$509,125,540
Future Development	$500,416,571	$226,056,224	$726,472,795
TOTAL	**$511,308,006**	**$724,290,329**	**$1,235,598,334**

Schedule A: Demand Factors

Table A – Demand Factors for Stormwater Infrastructure Contributions

Caboolture ShirePlan Zone	Equivalent PineRiversPlan Zone	Contribution Factor (CF_{QAL}/Ha)	Contribution Factor (CF_{QTY}/Ha)
Metropolitan Centre	Central Business	1.90	0.19
District Centre	Commercial	1.74	0.19
-	Extractive Industry	0.87	0.06
Regional Industry	General Industry	1.90	0.19
District Industry	General Industry	1.90	0.19
Local Industry	General Industry	1.74	0.19
Local Centre	Local Business	1.74	0.19
-	Neighbourhood Facilities	1.63	0.19
Open Space	Park and Open Space	*	*
-	Park Residential	0.58	0.06
Residential A	Residential A and Future Urban	1.32	0.13
Residential A (for lots <600m^2)	Residential A (<600m^2)	1.52	0.15
Residential B	Residential B	1.63	0.19
Rural	Rural (lots no less than 16 Ha)	0.00	0.00
Rural Residential	Rural Residential and Rural other than above	0.25	0.06
-	Service Industry	1.74	0.19
-	Special Residential (Urban)	1.32	0.13
-	Special Residential (Non-Urban)	0.58	0.06
-	Sports and Recreation	*	*
Special Use	Home Industry	1.63	0.19
-	Urban Village	1.90	0.19
-	Village Centre	1.9	0.19

The applicable Charge Area (in Ha) is to be calculated exclusive of any area under the Q100 level.

NOTE:

The demand factors/contribution factors listed in Table A above apply to all development applications for reconfiguring a lot (RAL) or a material change of use (MCU) corresponding to the actual zone of the land.

If the development proposal incorporates a land use which is not specifically listed as "consistent" for the zone of the land in Part 5 of *Caboolture ShirePlan*, the demand factor for that component of the development will be based on the demand factor for any zone in which that land use and the majority of the other uses comprising the development are listed as "consistent".

* From Part 5 of the *Caboolture ShirePlan*, determine the zone in which the proposal would constitute a "consistent" land use and apply the demand factor corresponding to that zone (where more than one zone would apply, the most appropriate zone in that context is to be used).

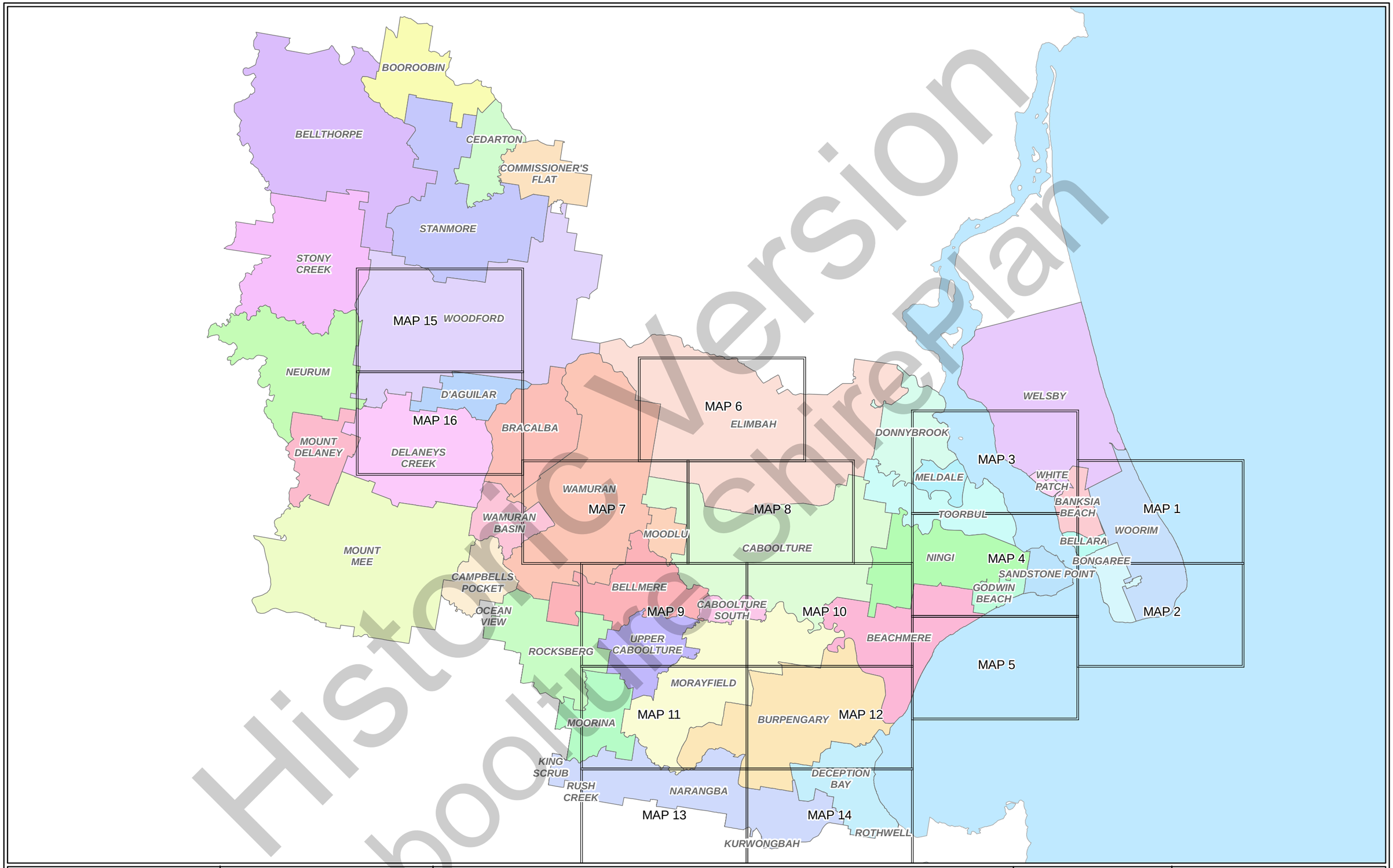
Schedule B: Infrastructure Contribution Rates

Table B shows the Infrastructure Contribution Rates for the network.

Table B – Stormwater Infrastructure Contribution Rates

CATCHMENT	(ICR/ECA$_{QAL}$)	(ICR/ECA$_{QTY}$)
RIVER CATCHMENT		
Caboolture	$22,379	$514,185
North Pine River	$0	$0
Burpengary	$8,292	$447,899
Mary River	$0	$0
Coastal Creeks	$13,855	$285,616
CREEK CATCHMENT		
Caboolture Catchment		
Caboolture River	$45,804	$217,106
Caboolture Mouth	$0	$1,318
Godwin Beach	$18,798	$33,476
Gregors Creek	$0	$0
Gympie Creek	$27,474	$77,811
King John Creek	$30,123	$291,538
Lagoon Creek	$43,560	$252,069
Sheepstation Creek	$45,447	$201,558
Wararba Creek	$40,533	$232,782
Blackrock Creek	$40,533	$232,782
Byron Creek	$0	$0
Delaney Creek	$0	$0
Monkeybong Creek	$24,161	$232,782
Neurum Creek North	$0	$0
Neurum South Creek	$0	$0
One Mile Creek	$41,799	$232,782
Running Creek	$0	$0
Stanley River	$17,622	$232,782
Stony Creek	$0	$0
Burpengary Catchment		
Deception Bay	$27,278	$273,592
Burpengary Creek	$50,760	$194,452
Little Burpengary Creek	$23,211	$358,740
North Pine River Catchment		
North Pine River	$0	$0
Sideling Dam	$0	$0
Terrors Creek	$0	$0
Coastal Creeks		
Beerburrum Creek	$0	$291,538
Bribie Island	$16,213	$33,476
Bullock Creek	$71,042	$291,538
Saltwater Creek	$23,058	$291,538
Six Mile Creek	$30,123	$291,538
Elimbah Creek	$12,079	$291,538
Glass Mountain Creek	$45,924	$291,538
Ningi Creek	$0	$291,538

Schedule C: Service Catchments



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Kilometres

N

SCALE 1:200,000 (at A3)

Caboolture Shire
Index to Map Sheets

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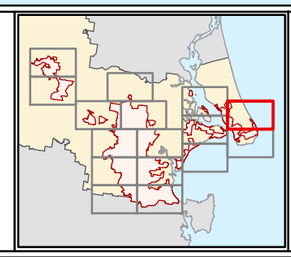
Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

- DISA Boundary
- Shire Boundary
- Cadastre



Caboolture Shire

Stormwater Service Catchments

MAP SWC 1

EFFECTIVE FROM 29 October 2009

BELLARA

SANDSTONE POINT

BONGAREE

WOORIM

FIRST AVENUE

BRI

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 2

EFFECTIVE FROM 29 October 2009

GMC
DONNYBROOK
BUL
MELDALE
ELI
NIN
TOORBUL
PUMICESTONE ROAD
WELSBY
BRI
WHITE PATCH
BANKSIA BEACH
NINGI

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 3

EFFECTIVE FROM 29 October 2009

WHITE PATCH
TOORBUL
ELI
BANKSIA BEACH
BRI
BELLARA
NIN
BRIBIE ISLAND ROAD
NINGI
BRIBIE ISLAND ROAD
SANDSTONE POINT
GOD
GODWIN BEACH
BEACHMERE
JC

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 4

EFFECTIVE FROM 29 October 2009

KJC

BEACHMERE

GOD

CBM

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

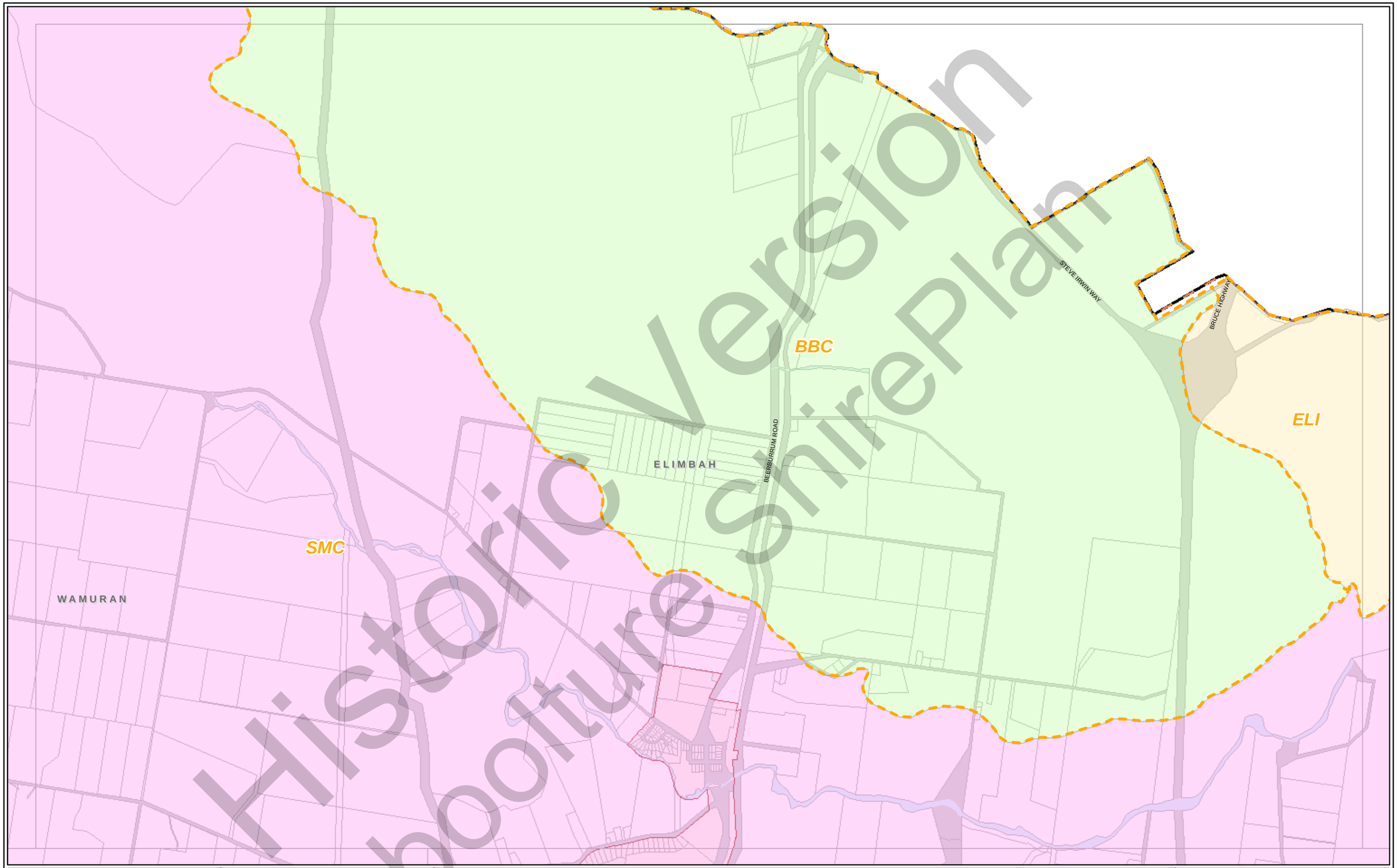
- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 5

EFFECTIVE FROM 29 October 2009



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SCALE 1:25,000 (at A3)
N

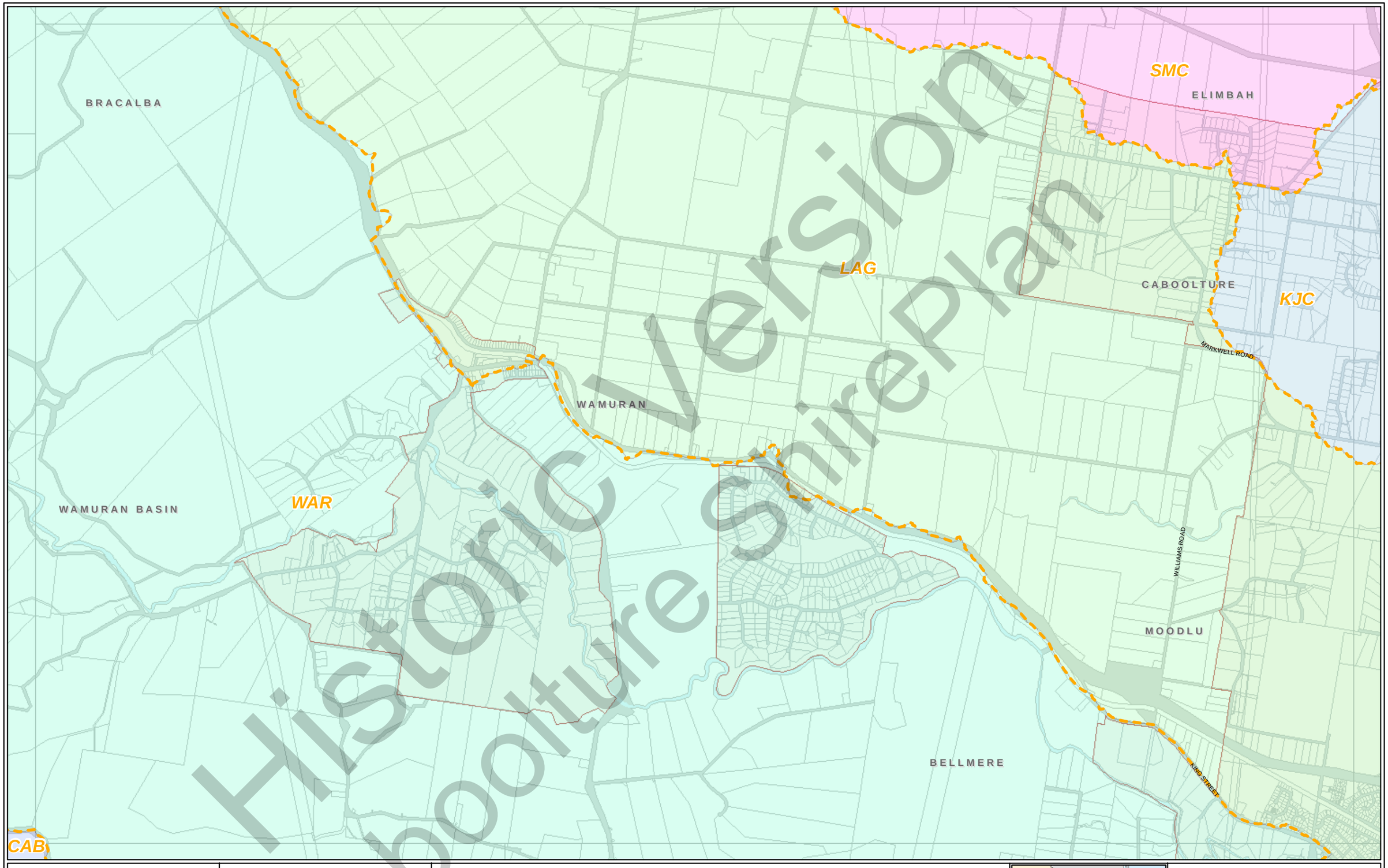
- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 6

EFFECTIVE FROM 29 October 2009



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Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
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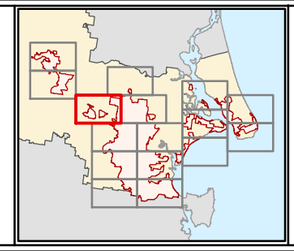
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

- DISA Boundary
- Shire Boundary
- Cadastre



Caboolture Shire

Stormwater Service Catchments

MAP SWC 7

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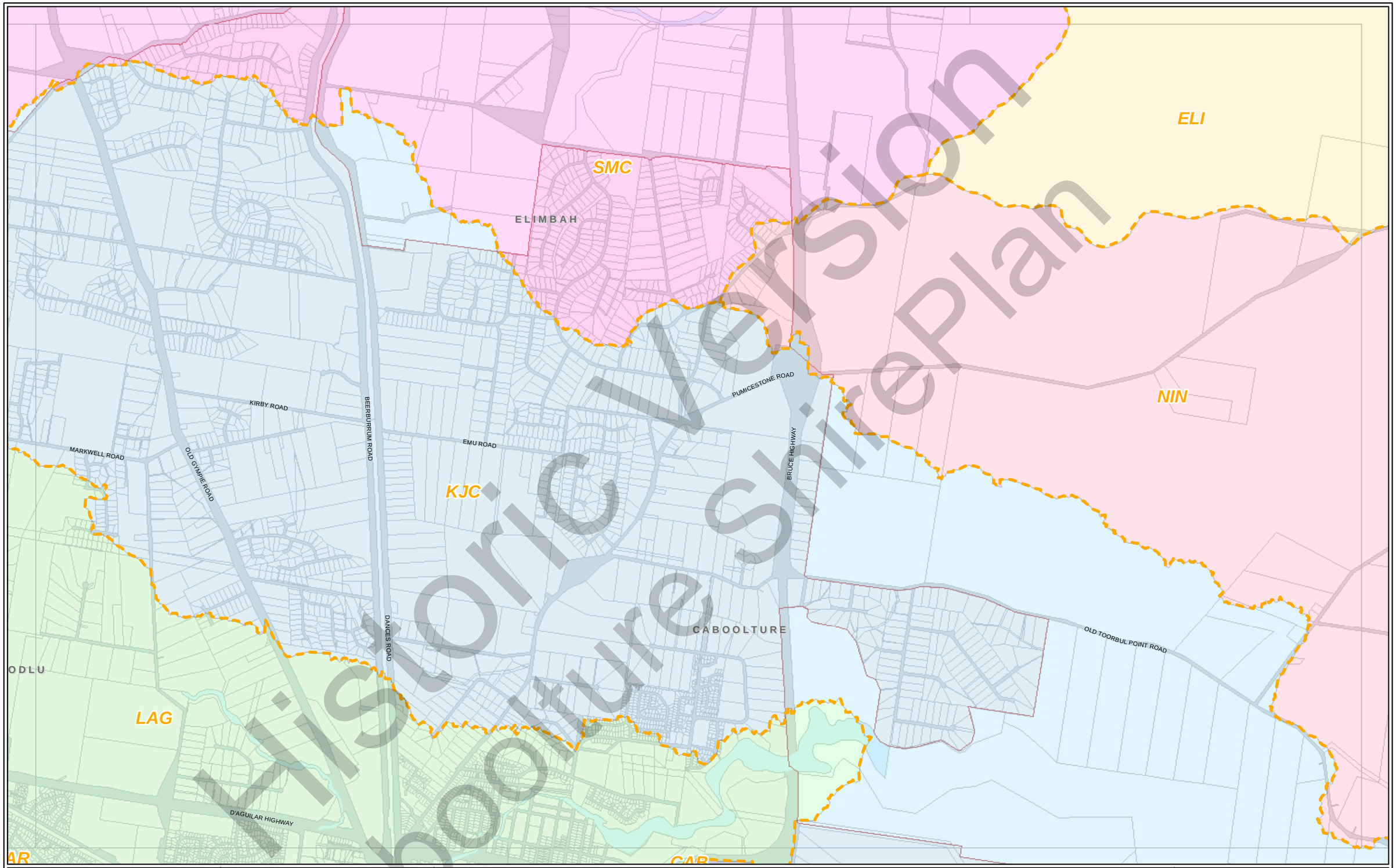

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Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
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- Little Burpengary Creek
- Mary River
- Monkeybong Creek
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- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 8

EFFECTIVE FROM 29 October 2009

MOODLU

D'AGUILAR HIGHWAY

WAMURAN

WAR

LAG

CABOOLTURE

BEERBURRUM ROAD

KING STREET

BELLMERE

BELLMERE ROAD

CABOOLTURE SOUTH

MORAYFIELD ROAD

ROCKSBERG

CAB

UPPER CABOOLTURE

CABOOLTURE RIVER ROAD

BUCHANAN ROAD

SSC

WALKERS ROAD

MORAYFIELD

TINNEY ROAD

OAKEY FLAT ROAD

PETERSEN ROAD

GRE

GYM

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
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- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

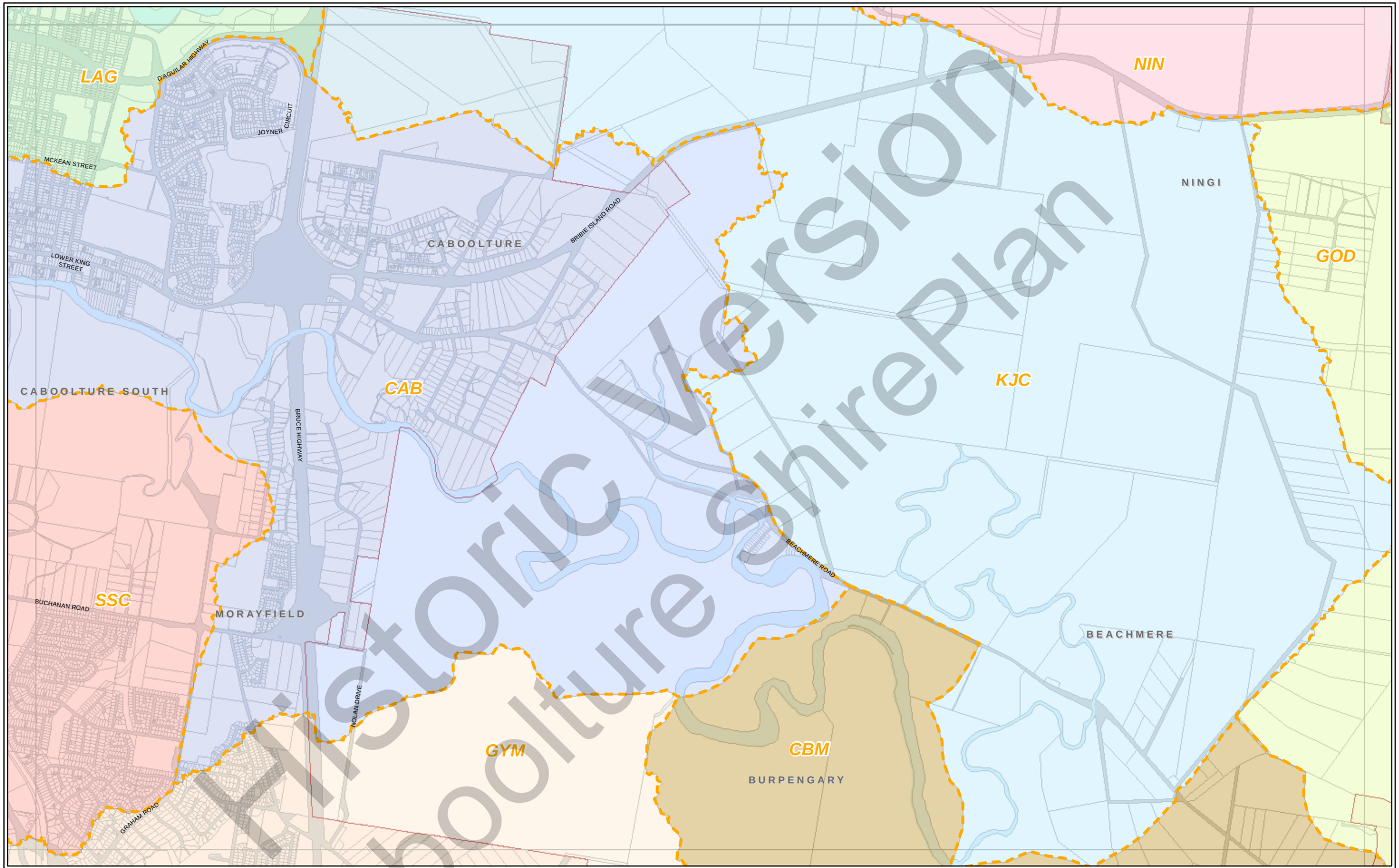
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 9

EFFECTIVE FROM 29 October 2009



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Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
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- Lagoon Creek
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- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 10

EFFECTIVE FROM 29 October 2009

ROCKSBERG

CAB

UPPER CABOOLTURE

SSC

MORAYFIELD

GYM

GRE

MOORINA

NARANGBA

BUR

BURPENGARY

SID

PETERSEN ROAD

CLARK ROAD

LINDSAY ROAD

BLEWERS ROAD

OAKEY FLAT ROAD

BRIDGES ROAD

HAUTON ROAD

OBRIEN ROAD

ROWLEY ROAD

BURPENGARY ROAD

YOUNG ROAD

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
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- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 11

EFFECTIVE FROM 29 October 2009

SSC
MORAYFIELD
COACH ROAD EAST
GYM
KJC
GOD
BEACHMERE ROAD
BEACHMERE
LINDSAY ROAD
MORAYFIELD ROAD
GLEESON ROAD
BUCKLEY ROAD
CBM
BRUCE HIGHWAY
BURPENGARY
O'BRIEN ROAD
STATION ROAD
BUR
OLD BAY ROAD
OLD GYMPIE ROAD
ANGBA
PITT ROAD
LBC
DECEPTION BAY
DEC

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
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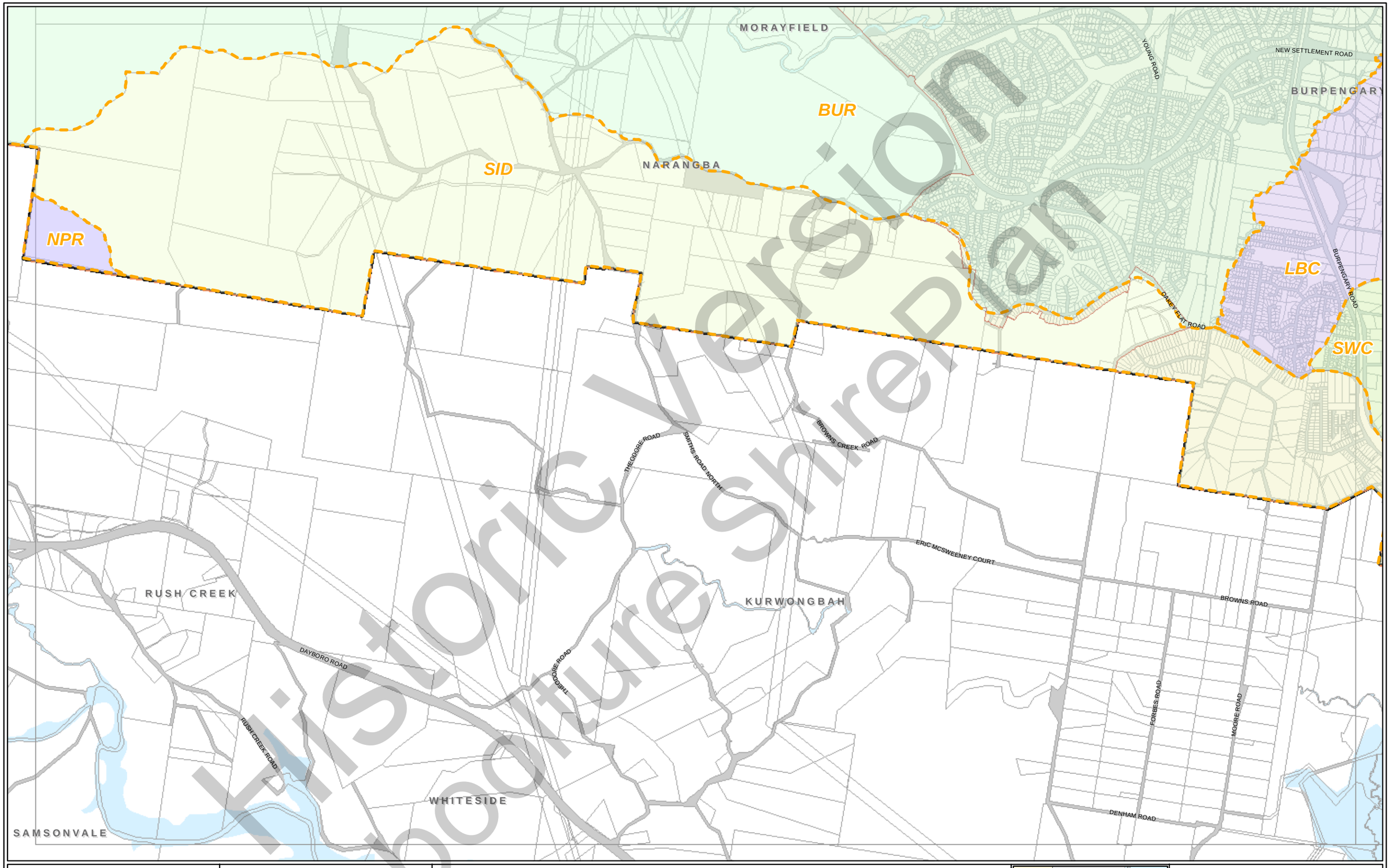
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 12

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1

Kilometres

N

SCALE 1:25,000 (at A3)

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
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- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

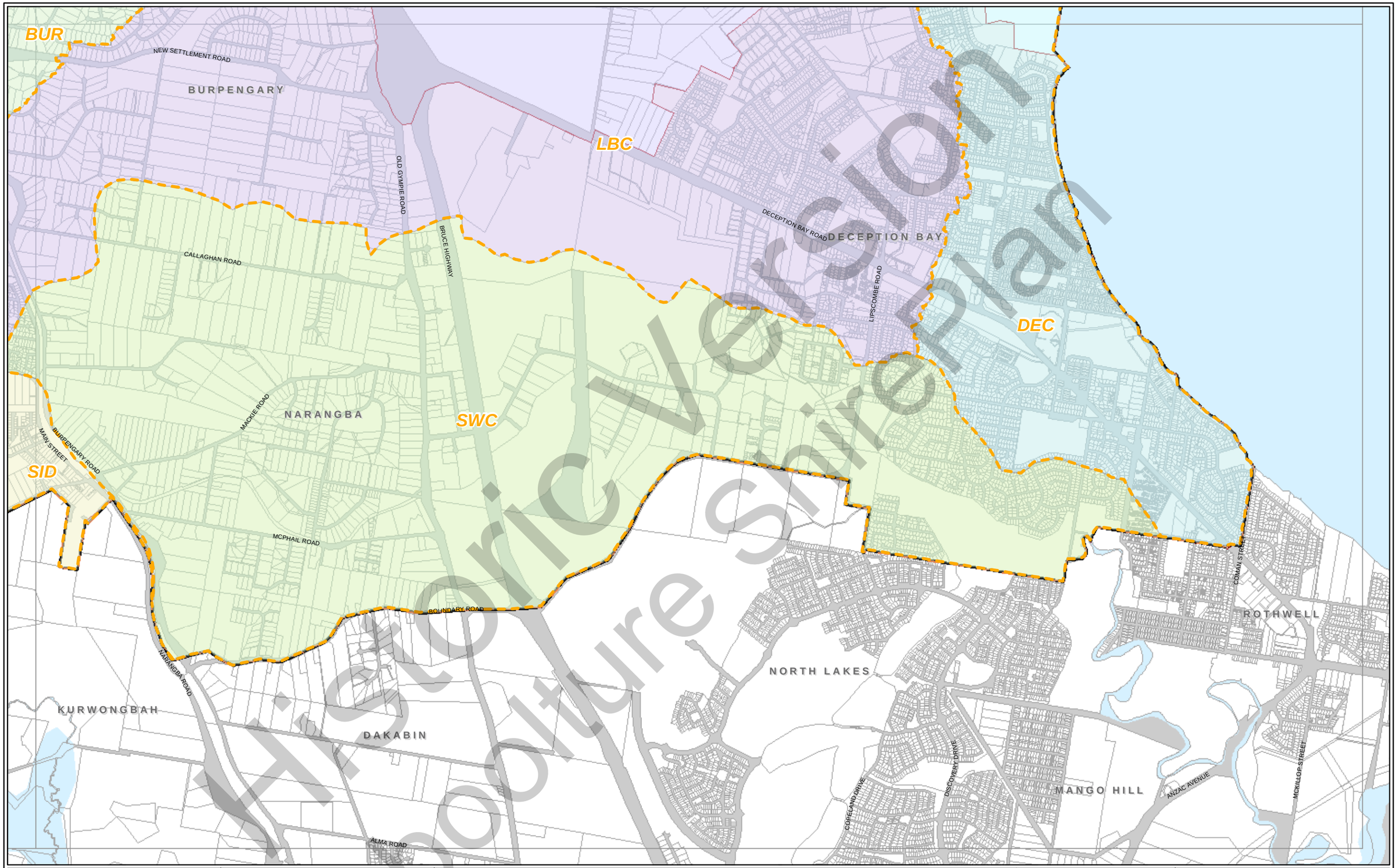
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 13

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
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- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 14

EFFECTIVE FROM 29 October 2009

STONY CREEK

KILCOY-BEERWAH ROAD

D'AGUILAR HIGHWAY

STANMORE

STA

BRC

NEURUM

WOODFORD

MBC

ARCHER STREET

OMC

D'AGUILAR

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Stormwater Service Catchments

MAP SWC 15

EFFECTIVE FROM 29 October 2009

STA

URUM

WOODFORD

MANORDOWNS DRIVE

OMC

D'AGUILAR

D'AGUILAR HIGHWAY

MBC

DELANEYS CREEK

MOUNT MEE ROAD

CURRAJONG CIRCUIT

SKELFORD DRIVE

WAR

BRACALBA

DELANEY

DEL

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

- Beerburrum Creek
- Blackrock Creek
- Bribie Island
- Bullock Creek
- Burpengary Creek
- Byron Creek
- Caboolture Mouth
- Caboolture River
- Deception Bay
- Delaney Creek
- Elimbah Creek
- Glass Mountain Creek
- Godwin Beach
- Gregors Creek
- Gympie Creek
- King John Creek
- Lagoon Creek
- Little Burpengary Creek
- Mary River
- Monkeybong Creek
- Neurum Creek North
- Neurum South Creek
- Ningi Creek
- North Pine River
- One Mile Creek
- Running Creek
- Saltwater Creek
- Sheepstation Creek
- Sideling Dam
- Six Mile Creek
- Stanley River
- Stony Creek
- Terrors Creek
- Wararba Creek

- DISA Boundary
- Shire Boundary
- Cadastre

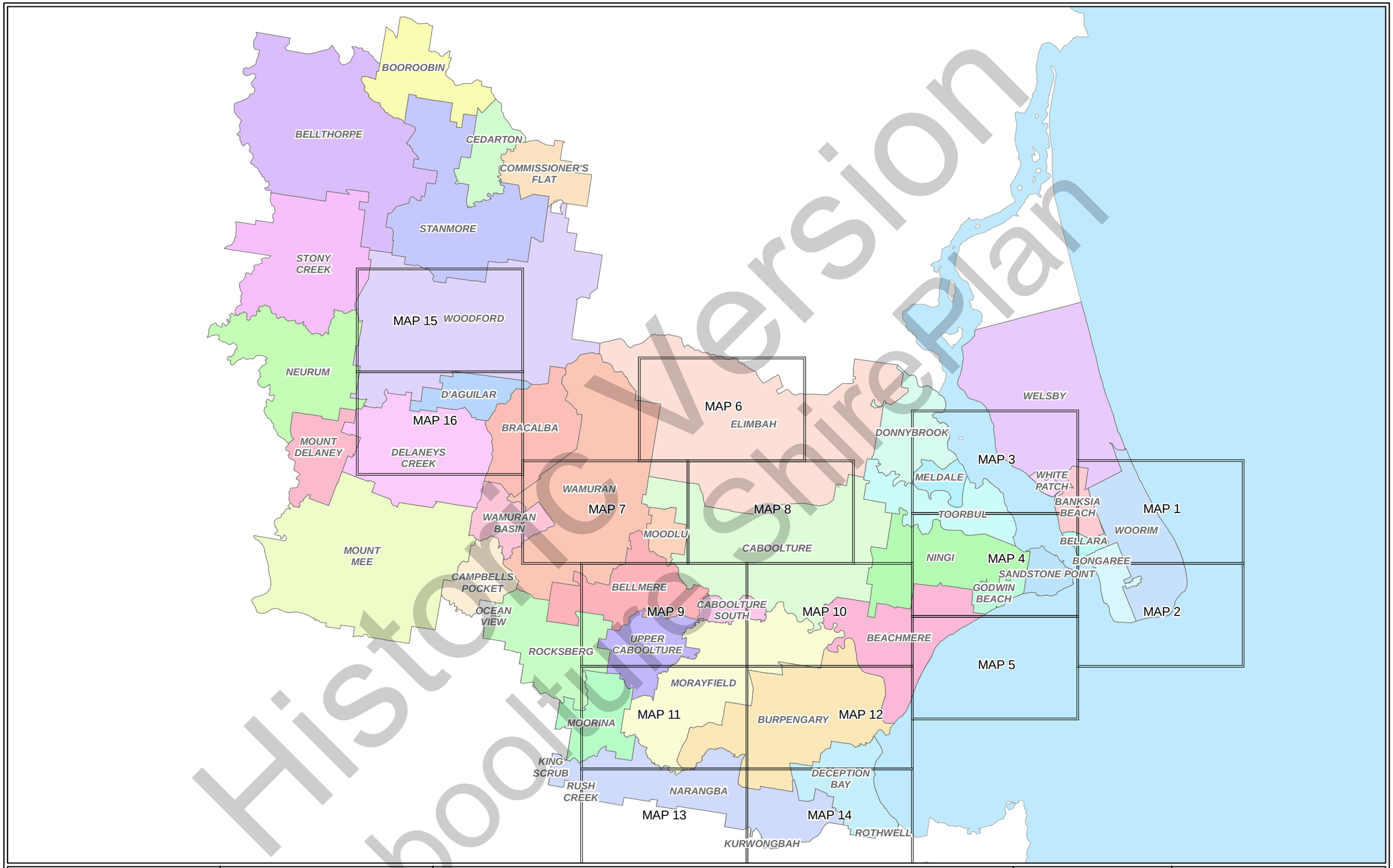
Caboolture Shire

Stormwater Service Catchments

MAP SWC 16

EFFECTIVE FROM 29 October 2009

Schedule D: Network Assets



0 2.5 5 10
Kilometres

N

SCALE 1:200,000 (at A3)

Caboolture Shire
Index to Map Sheets

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains
Existing Stormwater Quality Improvement Device (SQID)
DISA Boundary
Shire Boundary
Cadastre

Caboolture Shire

Existing Stormwater

MAP SWE 1

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

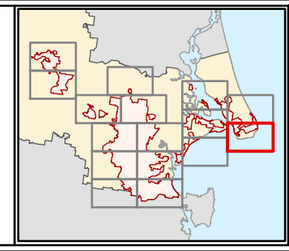
Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre



Caboolture Shire

Existing Stormwater

MAP SWE 2

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

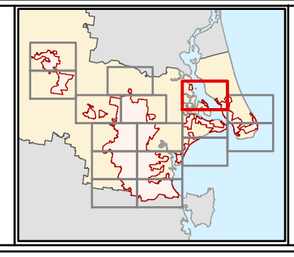
Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre



Caboolture Shire

Existing Stormwater

MAP SWE 3

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains
Existing Stormwater Quality Improvement Device (SQID)
DISA Boundary
Shire Boundary
Cadastre

Caboolture Shire

Existing Stormwater

MAP SWE 4

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains
Existing Stormwater Quality Improvement Device (SQID)
DISA Boundary
Shire Boundary
Cadastre

Caboolture Shire

Existing Stormwater

MAP SWE 5

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains
Existing Stormwater Quality Improvement Device (SQID)
DISA Boundary
Shire Boundary
Cadastre

Caboolture Shire

Existing Stormwater

MAP SWE 6

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

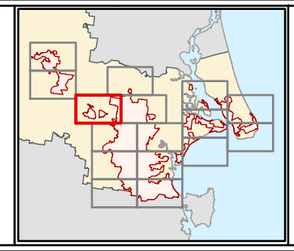
Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre



Caboolture Shire

Existing Stormwater

MAP SWE 7

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

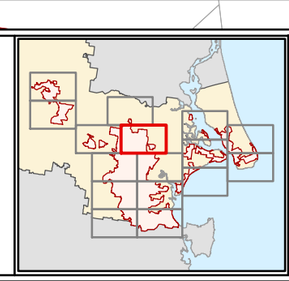
Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre



Caboolture Shire

Existing Stormwater

MAP SWE 8

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre

Caboolture Shire

Existing Stormwater

MAP SWE 9

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

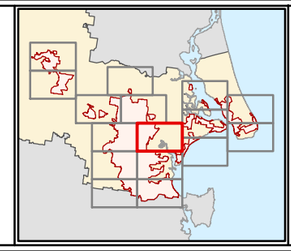
Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre



Caboolture Shire

Existing Stormwater

MAP SWE10

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre

Caboolture Shire

Existing Stormwater

MAP SWE11

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

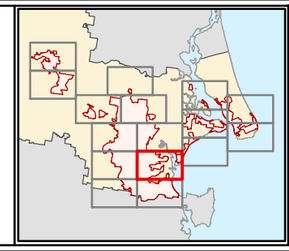
Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre



Caboolture Shire

Existing Stormwater

MAP SWE12

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains
Existing Stormwater Quality Improvement Device (SQID)
DISA Boundary
Shire Boundary
Cadastre

Caboolture Shire

Existing Stormwater

MAP SWE13

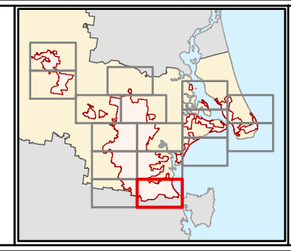
EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains
Existing Stormwater Quality Improvement Device (SQID)
DISA Boundary
Shire Boundary
Cadastre



Caboolture Shire

Existing Stormwater

MAP SWE14

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre

Caboolture Shire

Existing Stormwater

MAP SWE15

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

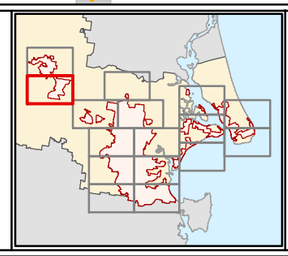
Existing Trunk Stormwater Mains

Existing Stormwater Quality Improvement Device (SQID)

DISA Boundary

Shire Boundary

Cadastre

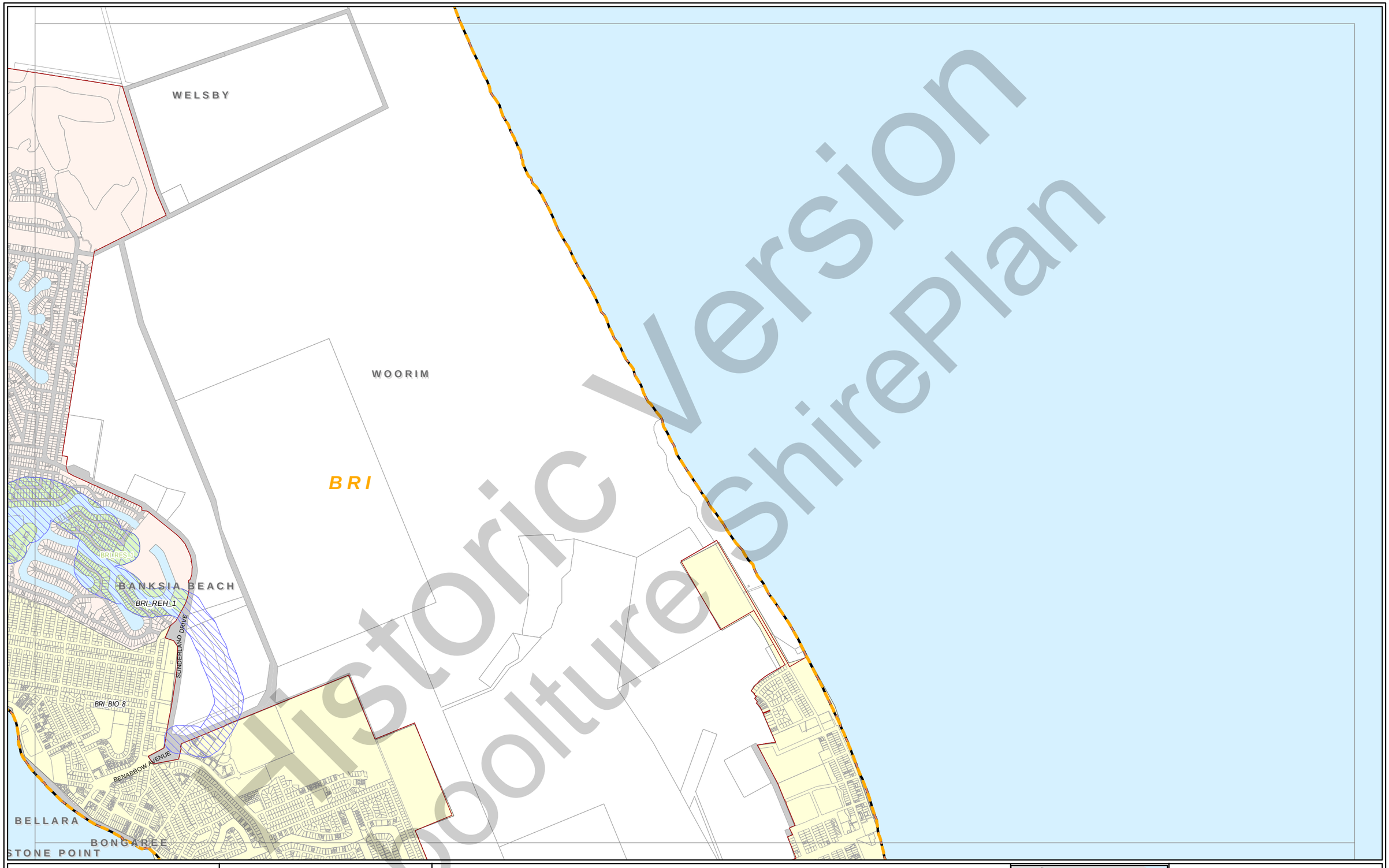


Caboolture Shire

Existing Stormwater

MAP SWE16

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

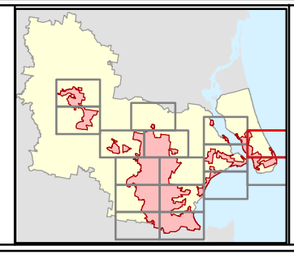
N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre



Caboolture Shire

Future Stormwater

MAP SWF 1

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAP SWF 2

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

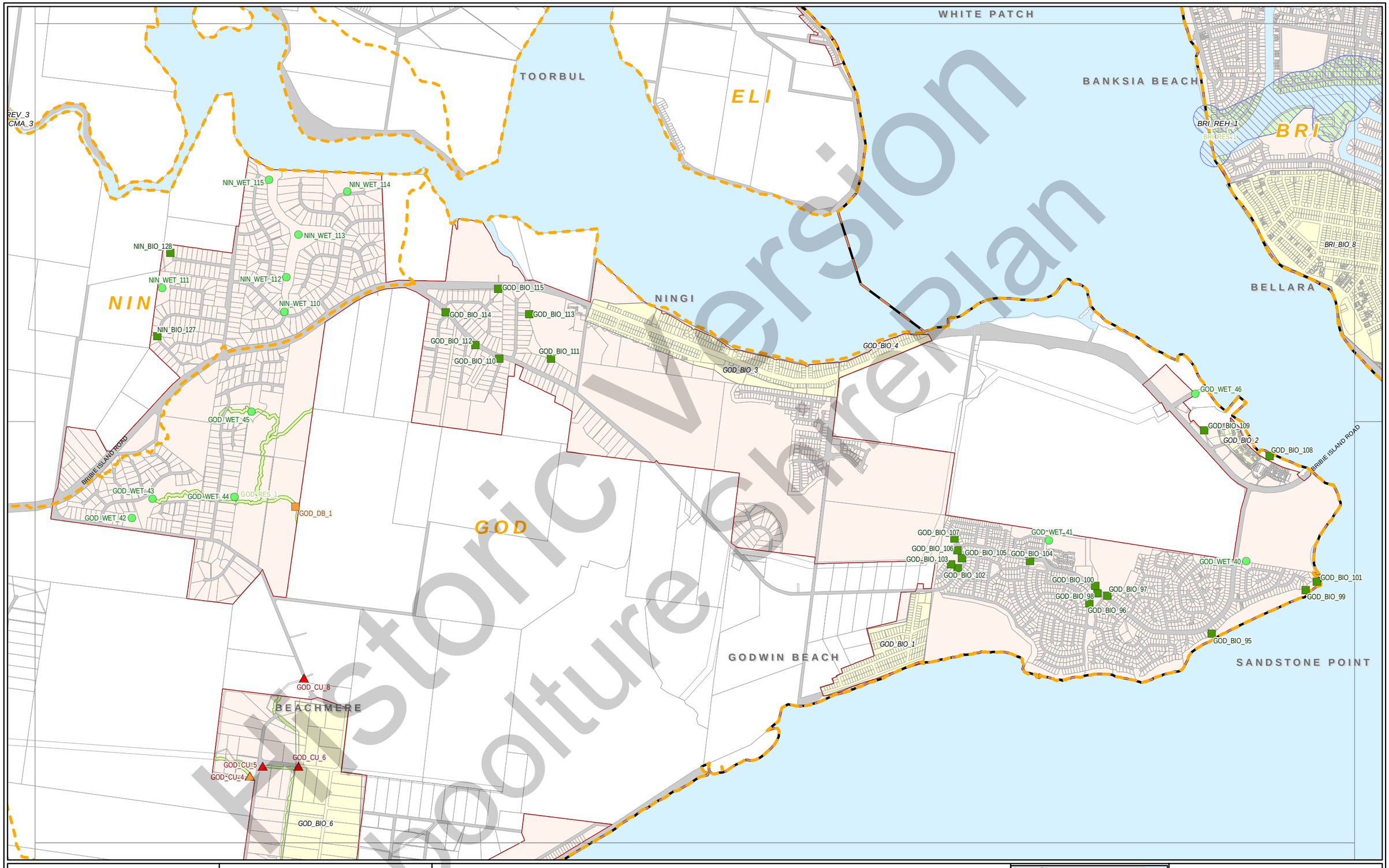
- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAP SWF 3

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAP SWF 4

EFFECTIVE FROM 29 October 2009

KJC

GOD

CBM

BEACHMERE

GODWIN BEACH

GOD_CU_3

GOD_CU_9

GOD_BIO_6

GOD_CU_7

GOD_CU_2

GOD_CU_10

GOD_BIO_5

GOD_CU_1

CBM_RES_1

0 0.25 0.5 1

Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades

- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAP SWF 5

EFFECTIVE FROM 29 October 2009

BBC
SMC
ELI
WAMURAN
ELIMBAH
BEERBURRUM ROAD
STEVE IRWIN WAY
BRUCE HIGHWAY
BBC_REV_2
SMC_RCMA_4
SMC_REV_4
BBC_REV_1
SMC_REH_1
SMC_RCMA_1
SMC_REH_3
SMC_RCMA_3
SMC_RCMA_8
SMC_REV_6
SMC_RES_1
SMC_RCMA_6
SMC_REV_7
SMC_RCMA_7
BBC_RCMA_1
BBC_REV

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

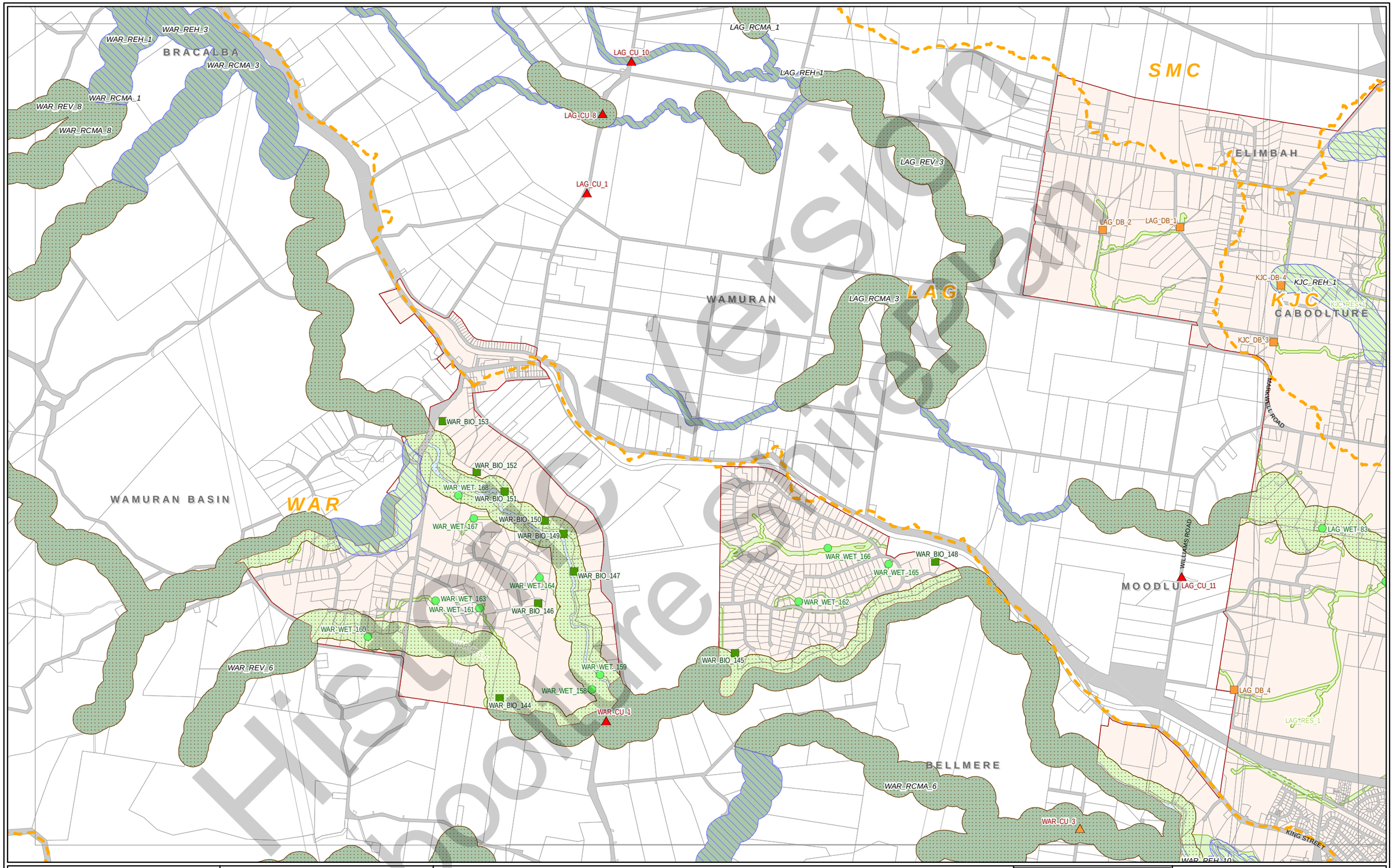
- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAP SWF 6

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAP SWF 7

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

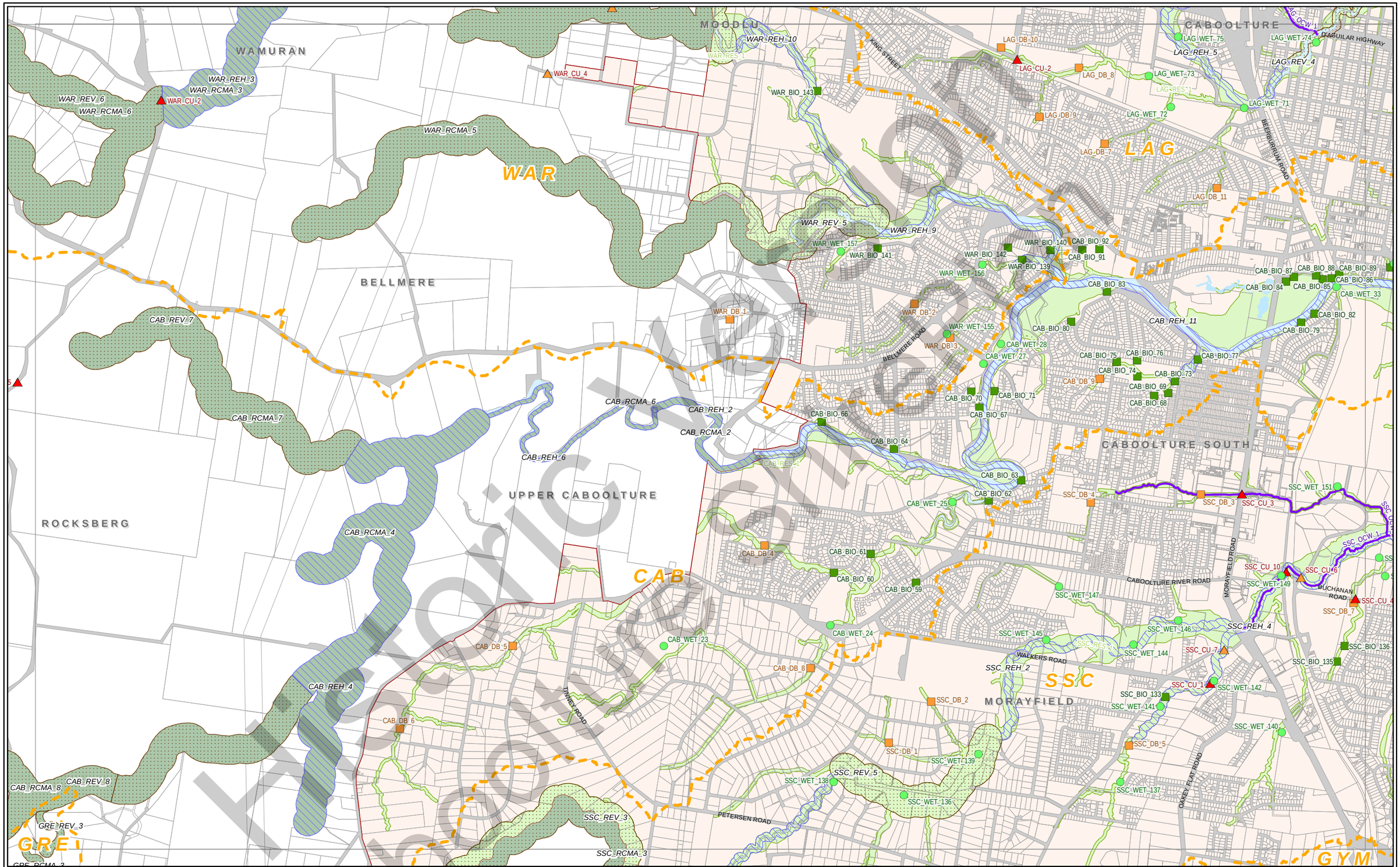
- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAP SWF 8

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAP SWF 9

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

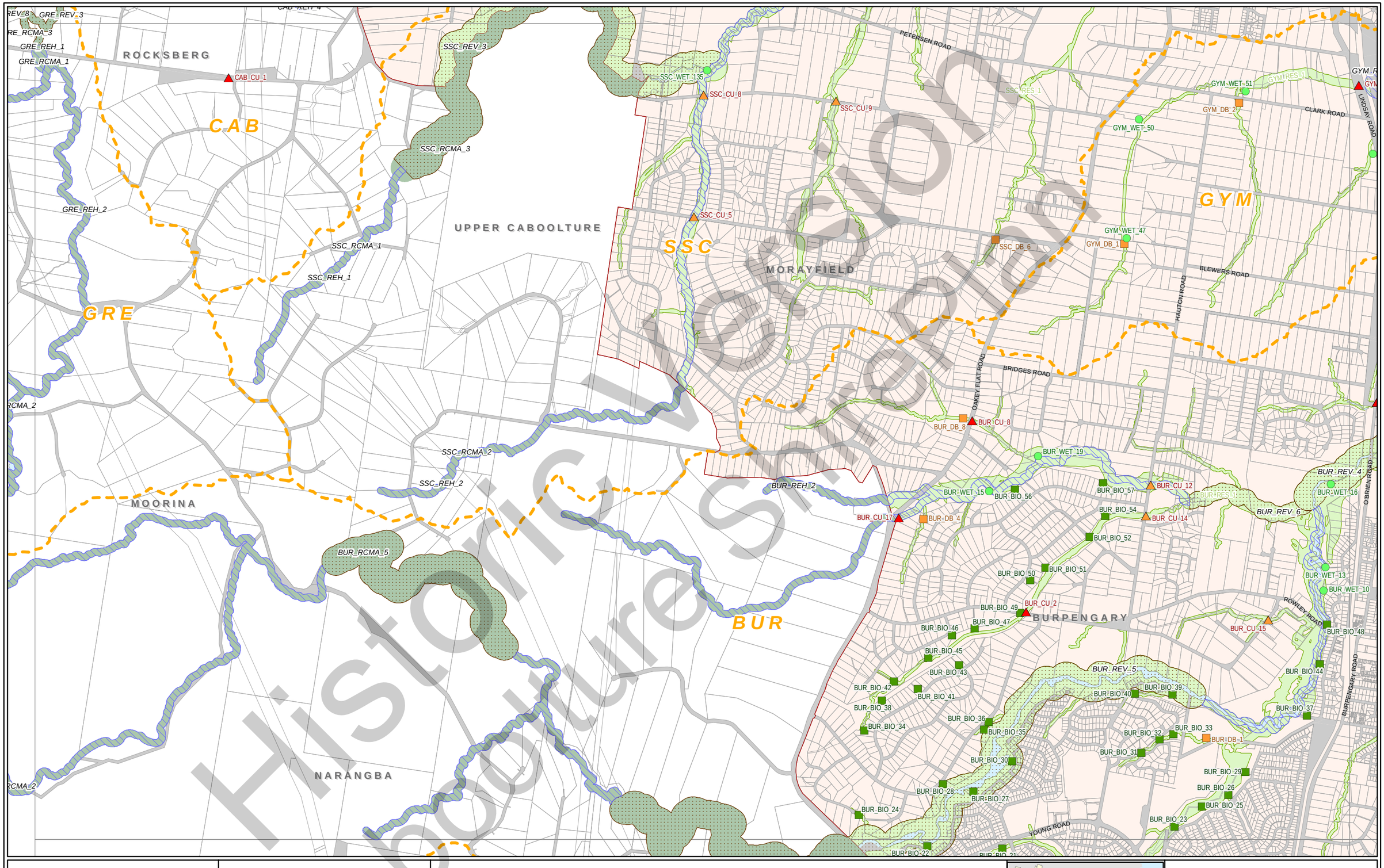
- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAPSWF 10

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

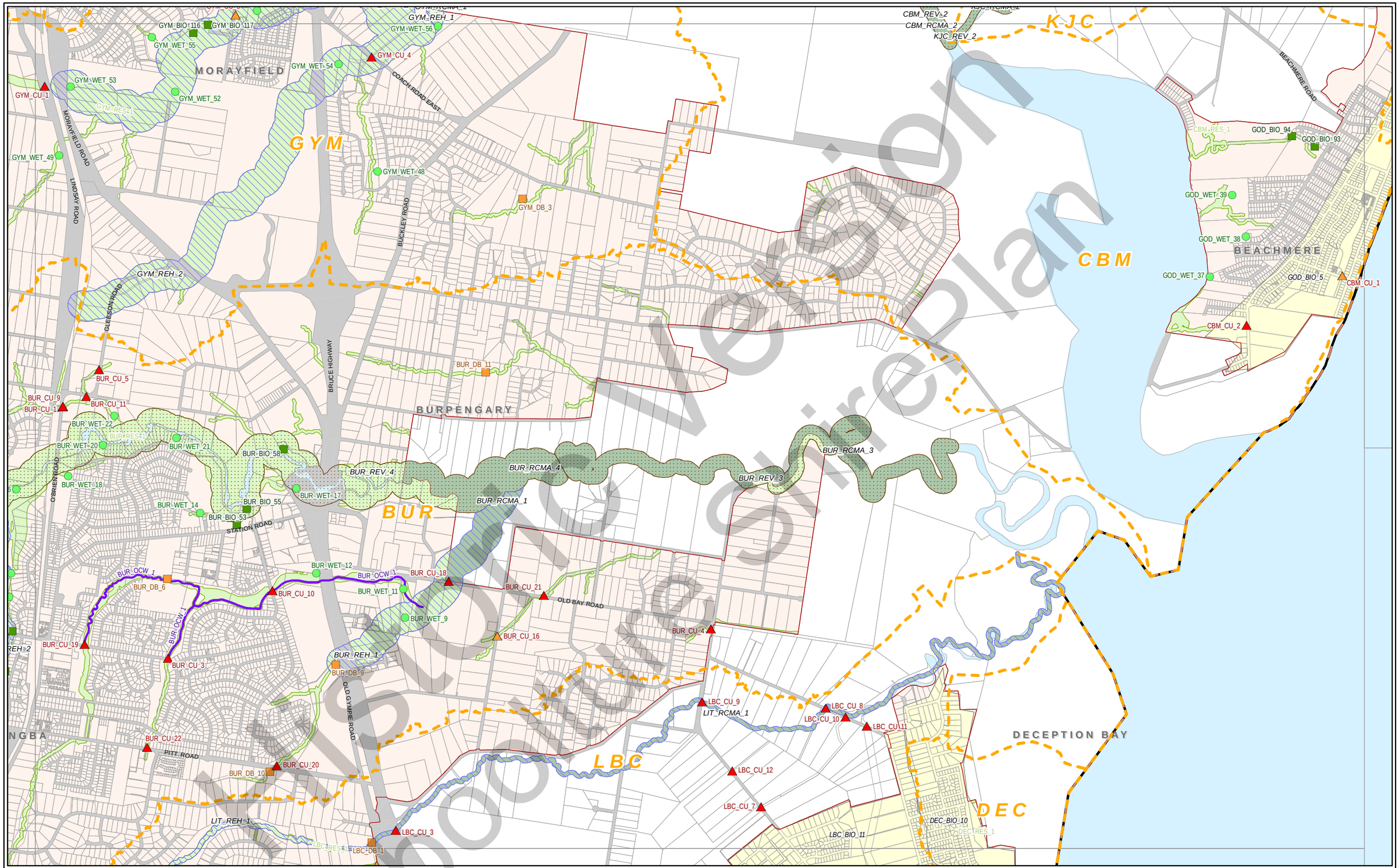
- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAPSWF 11

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

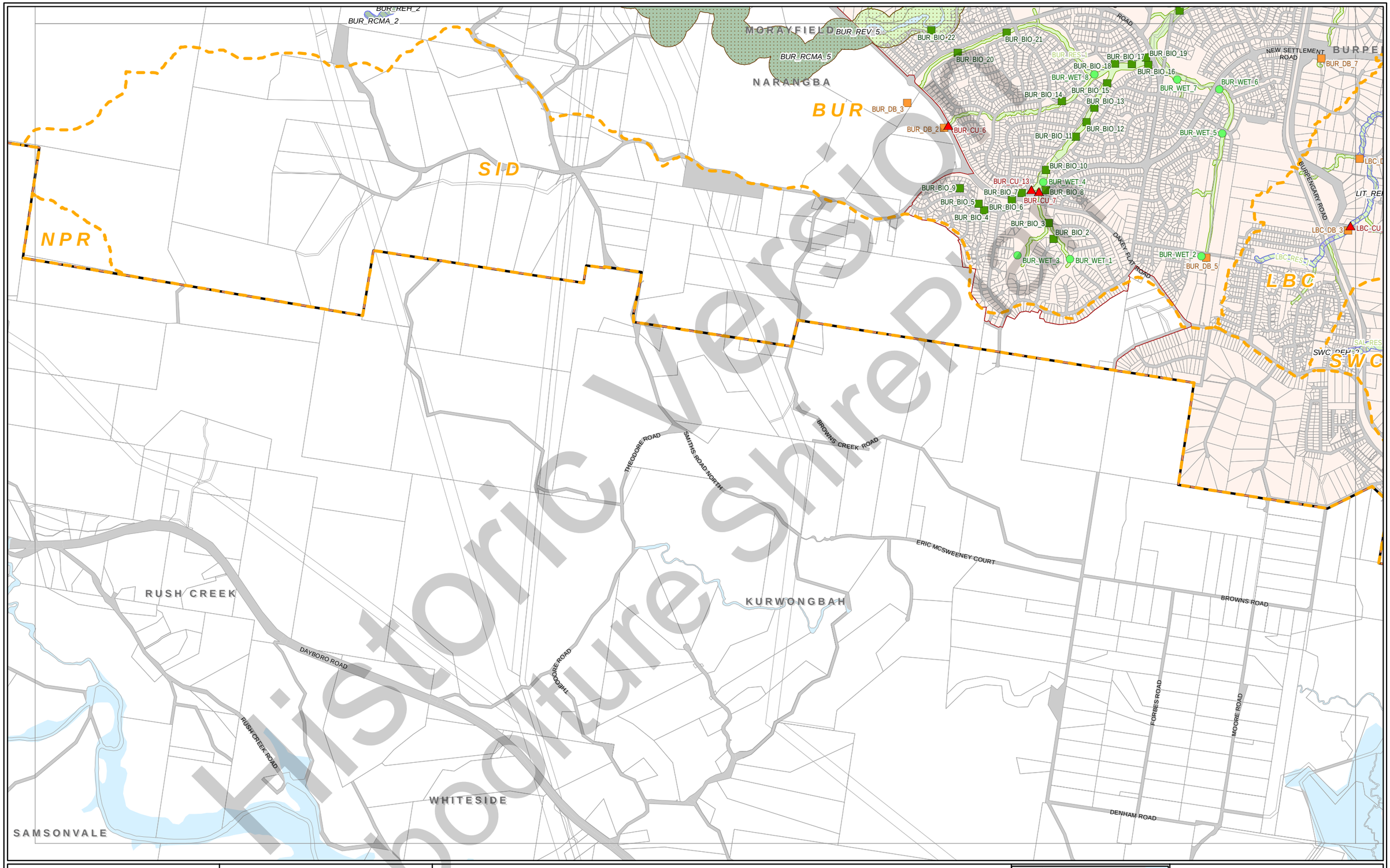
- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAPSWF 12

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAPSWF 13

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

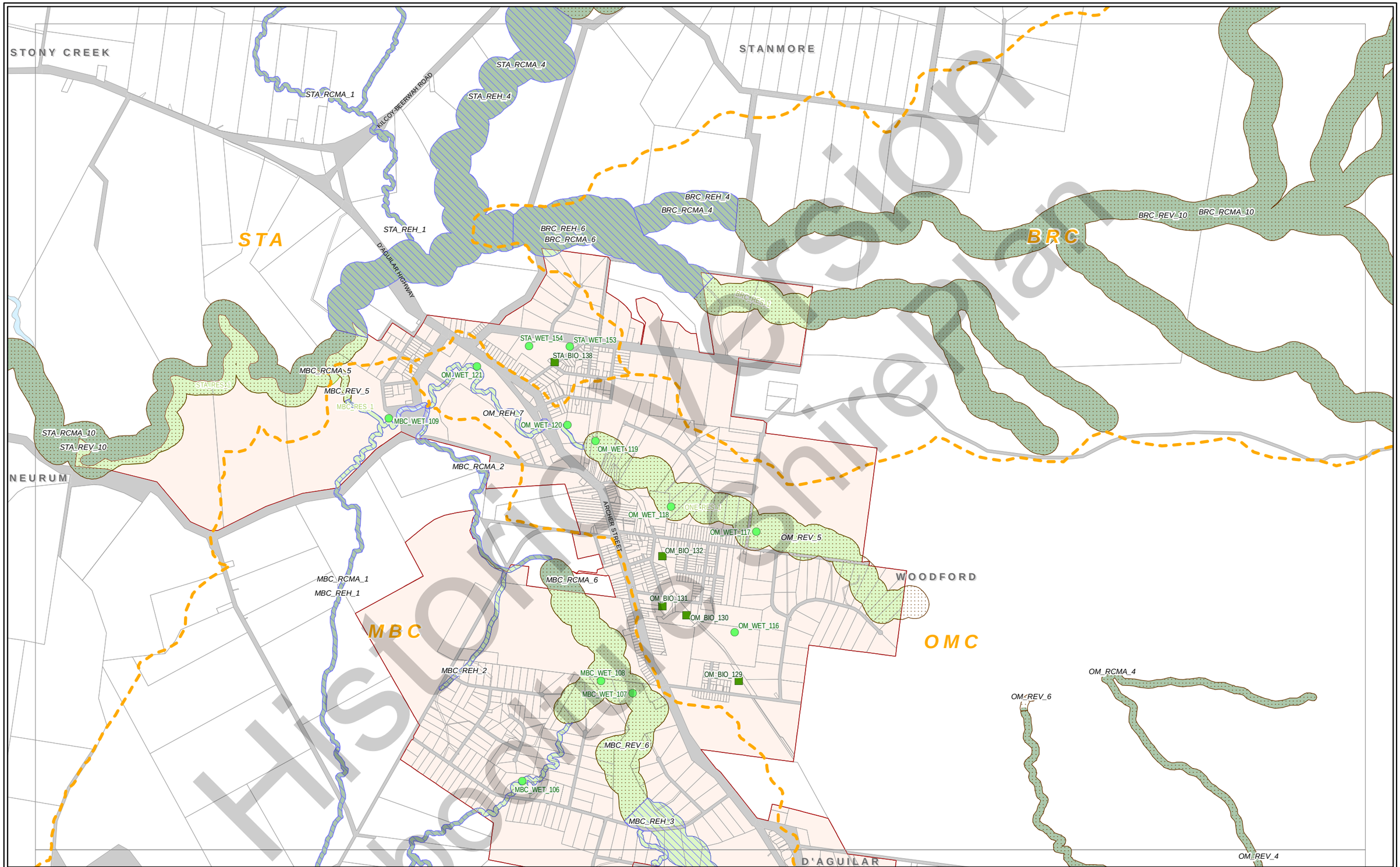
- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAPSWF 14

EFFECTIVE FROM 29 October 2009



0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAPSWF 15

EFFECTIVE FROM 29 October 2009

0 0.25 0.5 1
Kilometres

SCALE 1:25,000 (at A3)

N

- Wetland
- Bioretention Basin
- Detention Basin
- Open Channel Works

Crossing Upgrades
- Major
- Minor

- Rehabilitation
- Revegetation
- Riparian Corridor Management Area (RCMA)
- Corridor Reserve
- Unallocated Location for Bioretention

- Stormwater Catchments
- DISA Boundary
- Shire Boundary
- Cadastre

Caboolture Shire

Future Stormwater

MAPSWF 16

EFFECTIVE FROM 29 October 2009

Schedule E: Desired Standards of Service

The Desired Standards of Service for Stormwater Trunk Infrastructure network under this policy are detailed below in terms of 'Planning Requirements' and 'Design Objectives'. The 'Planning Requirements' and 'Design Objectives' were developed as a mechanism for implementing the purpose of the *Integrated Planning Act* and satisfying the relevant requirements of the *Environmental Protection Act* as well as the objectives of Council's Corporate Plan. The design objectives are the means by which the planning requirements are achieved.

Planning Requirements

Table E1 - Planning Requirements - Catchments

DESIRED STANDARD OF SERVICE	USER / COMMUNITY BENEFIT	ENVIRONMENTAL BENEFIT
• Corporate Objectives • Legal Responsibility • Community Needs	• Community & Customer Service • Quality and Safety • Economic Activity Support	• Ecological Protection • Ecosystem Rehabilitation
Provide a system of infrastructure that caters for the adequate and safe drainage of urban lands to receiving waters in a way that achieves the user/community benefit and environmental benefit listed opposite.	• Minimises risk of inundation of habitable areas. • Minimises the damage and risk associated with flooding. • Provides economic use of urban landscape. • Sets safe standards for the road system consistent with traffic movement and access requirements.	
Maximise the retention and enhancement of each natural waterway in a way that achieves the user/community benefit and environmental benefit listed opposite.		• Protects the environmental values of waterway systems. • Minimises the impact of development on the ecological health of waterways. • Minimises the adverse impact of development on water quality.
Optimise the use of natural waterways and overland flow paths in a way that achieves the user/community benefit and environmental benefit listed opposite.	• Reduces the long-term costs of maintaining the waterways corridor.	• Protects areas of natural riparian vegetation in key habitat areas. • Provides for faunal movement and migration. • Reduces the risk of streambank erosion.
Optimise the provision of infrastructure in a way that achieves the user/community benefit and environmental benefit listed opposite, taking into account the use of Water Sensitive Urban Design techniques.	• Provides waterway infrastructure at least life cycle cost. • Reduces the scale of infrastructure by maintaining existing hydrological parameters, such as flows, flow velocities and patterns. • Improves water quality and waterways health.	• Improves water quality at the point of discharge. • Controls peak flows and thereby reduces the potential for erosion and sedimentation.
Retention of riparian land in rural areas for stormwater runoff and treatment in a way that achieves the user/community benefit and environmental benefit listed opposite.	• Minimises risk of inundation to habitable areas. • Stabilise adjacent productive land.	• Minimises the adverse impact of rural activities and development on the ecological health of waterways • Minimises the adverse impact of rural activities and development on water quality.
Provide a system of stormwater infrastructure capable of removing harmful pollutant concentrations and loads in a way that achieves the user/community benefit and environmental benefit listed opposite.	• Minimises risk of unsafe stream, river and ocean water for human contact. •	• Minimises adverse impact of development on stream and receiving environment water quality. • Optimises aquatic health and stream ecology and bio-diversity.

Table E2 - Planning Requirements - Waterways

DESIRED STANDARD OF SERVICE	USER / COMMUNITY BENEFIT	ENVIRONMENTAL BENEFIT
• Corporate Objectives • Legal Responsibility • Community Need	• Community & Customer Service • Quality and Safety • Economic Activity Support	• Ecological Protection • Ecosystem Rehabilitation
Conveyance of the design runoff in an allocated waterway corridor in a way that achieves the user/community benefit and environmental benefit listed opposite. Corridors shall preferably incorporate natural channels and floodplains.	• Minimises risk of inundation of habitable areas. • Minimises the damage and risk associated with flooding. • Reduces the cost of flood damage to the community.	• Maintains the natural functions of creeks and floodplains. • Reduces environmental damage due to flooding by maintaining the natural functions of floodplains.
Rehabilitate degraded waterway banks and floodplains through planting of native vegetation, erosion treatment measures and natural channel design features in a way that achieves the user/community benefit and environmental benefit listed opposite.	• Ensures reasonable levels of water quality and turbidity in waterways are not exceeded.	• Protects environmentally sensitive areas from development. • Enhances nature conservation by retaining riparian areas for environmental purposes. • Minimises the adverse impact of development on waterways health.
Cater for long term morphological processes, such as erosion and sedimentation in a way that achieves the user/community benefit and environmental benefit listed opposite, by allowing sufficient width within waterway corridors.	• Minimises the impact of erosion or sedimentation on private property. • Reduces the need for costly structural treatments of waterway banks.	• Provides for natural processes of erosion and sedimentation.
Maintain, where possible, the design runoff at natural flow rates using regional detention facilities in a way that achieves the user/community benefit and environmental benefit listed opposite.	• Controls the impact of flow rate increase on downstream landholders.	• Minimises the impact of peak flow rate increase on natural waterways.

Table E3 - Planning Requirements - Overland Flow Systems

DESIRED STANDARD OF SERVICE	USER / COMMUNITY BENEFIT	ENVIRONMENTAL BENEFIT
• Corporate Objectives • Legal Responsibility • Community Need	• Community & Customer Service • Quality and Safety • Economic Activity Support	• Ecological Protection • Ecosystem Rehabilitation
Convey floodwater from the local catchment by a network of underground pipes, natural channels and overland flow paths in a way that achieves the user/community benefit and environmental benefit listed opposite. This is to be achieved without adversely impacting on properties or compromising environmental values associated with the flow paths and at an appropriate design runoff rate.	Ensures habitable areas are protected from inundation.	Promotes the protection of environmentally sensitive areas.
Design of the overland flow system is to comply with established codes and local authority standards which achieve the user/community benefits and environmental benefits listed opposite.	Provides an optimal balance of underground pipes, natural channels and overland flow paths in order to achieve economic land use.	Promotes the retention of natural channels or rehabilitation of existing natural flow paths.
Minimise any increase in flow rate in a way that achieves the user/community benefit and environmental benefit listed opposite utilising local and on-site detention facilities where appropriate.	• Minimises adverse impacts from flooding for existing and future developments. • Optimises the size of waterway corridors and underground drainage.	• Minimises the adverse impact on the environmental values of downstream waterways by maintaining natural flows and velocities. • Minimises channel erosion by the reduction of flow velocities.
Minimise the discharge of pollutant materials from point and non-point sources in a way that achieves the user/community benefit and environmental benefit listed opposite.	• Minimises the risk of human, animal or ecosystem contact with unsafe or polluted water in streams, rivers or ocean waters.	• Minimises adverse impact of development on stream and receiving environment water quality. • Maintains aquatic health as well as sustainable stream ecology and bio-diversity.

Table E4 - Planning Requirements - Waterway Crossings

DESIRED STANDARD OF SERVICE	USER / COMMUNITY BENEFIT	ENVIRONMENTAL BENEFIT
• Corporate Objectives • Legal Responsibility • Community Need	• Community & Customer Service • Quality and Safety • Economic Activity Support	• Ecological Protection • Ecosystem Rehabilitation
Design culverts and bridges with appropriate flood immunity and capacity to convey floodwater.	• Ensures road crossings operate safely in times of inundation. • Reduces the risk of flooding for upstream properties.	
Upgrading of bridges and culverts is carried out in a manner that does not adversely impact on the natural environment, such as through the loss of vegetation or undesirable impacts on bio-diversity, and in a way that achieves the user/community benefit and environmental benefit listed opposite.		Minimises environmental impact.

Design Objectives

Design Criteria shall be as shown in the Tables E5 to E8, unless noted otherwise in Catchment Management Plans/Master Drainage Reports and/or by detailed Engineering Analysis. For additional explanation of the Design Criteria, refer to Planning Scheme Policy 4 Design and Development Manual and the Stormwater Code in *Caboolture ShirePlan*.

Table E5 - Design Objectives - Flooding of Habitable Areas

DESIGN ISSUE	DESIGN CRITERIA			
FLOOD IMMUNITY	**MAJOR DRAINAGE SYSTEM**			
	Zone		**Design ARI (years)**	
	All		100	
	MINOR DRAINAGE SYSTEM			
	Zone		**Design ARI (years)**	
	Central Business, Commercial, Local Business, Neighbourhood Facilities		20	
	Service Industry, General Industry, Home Industry		20	
	Residential B		10	
	Residential A, Special Residential (Urban), Future Urban		10	
	Special Residential (non urban), Park Residential, Rural Residential, Rural, Future Rural Living		10	
	Park and Open Space, Sports and Recreation where length of drain is:		< 50m – adopt 5 > 50m enhance open watercourse (see Note 3)	
	MAJOR DRAINAGE SYSTEM REQUIREMENTS			
		Town Planning Zone		
		Urban, Rural Residential, Rural Area	**Park Area**	
	Minimum requirements	An overland flow system for runoff in excess of the capacity of the pipe system, such that the design flow is carried through the subdivision or development clear of, and with required freeboard to, allotments/buildings	Major system flows are contained within the park area.	
DEVELOPMENT LEVELS	**Zone**		**Min. Area within Allotment**	**Minimum Development Levels**
	General Industry, Service Industry		4000 m^2	Q100 + freeboard
	Residential A, Residential B, Special Residential, Future Urban, Neighbourhood Facilities, Local Business, Central Business, Home Industry, Commercial		2000 m^2	Q100 + freeboard
	Park Residential, Rural Residential, Rural, Future Rural Living		1500 m^2	Q100 + freeboard
MINIMUM FREEBOARD	**Flooding Source**	**Minimum Freeboard**		

DESIGN ISSUE	DESIGN CRITERIA		
	Existing Natural Watercourse	Calculated 100 year ARI ultimate flood level + 300 mm freeboard	
	Engineered Channels	Calculated 100 year ARI ultimate flood level + 300 mm freeboard	
	Urban Road Drainage	Greater of 250mm; or - 150mm + difference in level due to blocked catchpits or inlets.	
	Overland Flowpaths	Calculated 100 year ARI flow depth + 50 mm freeboard	
	In areas affected by tidal water	Adopted 100 year ARI storm tide level + 300 mm freeboard (The adopted 100 year ARI storm tide is RL 2.8 AHD. This value incorporates greenhouse effects)	
	For Major Storm (a) Where floor levels of adjacent buildings are above road level	(i) Total flow contained within road reserve (ii) Freeboard > 250mm to floor level of adjacent buildings, and with maximum flow depth of 200mm	(i) Total flow contained within road reserve (ii) Freeboard ≥ 250mm to floor level of adjacent buildings, and with maximum flow depth of 300mm
	(b) Where floor levels of adjacent buildings are below or less than 300mm above road level (i) where 100mm fall on footpath towards kerb; (ii) where less than 100mm fall on footpath towards kerb; (c) other.	50mm above top of kerb Top of kerb As determined by Council's Engineer	50mm above top of kerb Top of kerb As determined by Council's Engineer

Table E6 - Design Objectives – Roadways

DESIGN ISSUE	DESIGN CRITERIA		
FLOOD IMMUNITY			**Design ARI (years)**
	Major Road	Kerb and Channel Flow	50
		Cross Drainage (Culverts)	50
	Minor Road	Kerb and Channel Flow	Refer to relevant development category (satisfy highest ARI of abutting zones)
		Cross Drainage (Culverts)	10
	Bikeway	Cross Drainage	2
SAFETY	**Roadway Flow Width and Depth Limitation**		
	Major Roads		**Minor Roads**
	The road crossing shall be designed to ensure that the road remains trafficable (passable to traffic) in the major storm event. The limiting criterion of depth by velocity product less than 0.6 shall be applied to overtopping of roads during the major design storm events. The water depth above the crown of the road shall not exceed 200mm		The road crossing shall be designed to ensure that the road remains trafficable (passable to traffic) in the major storm event. The limiting criterion of depth by velocity product less than 0.6 shall be applied to overtopping of roads during the major design storm events. The water depth above the crown of the road shall not exceed 200mm
	Vehicle Safety = ≤ 0.6 m^2/s		Vehicle Safety = ≤ 0.6 m^2/s

Table E7 - Design Objectives - Detention Areas

DESIGN ISSUE	DESIGN CRITERIA	
FLOOD IMMUNITY	**Design Parameter**	**Criteria**
	ARIs to be investigated for analysis	1, 5, 20 and 100 for critical durations
SAFETY	Depth / ARI	1.2m for 20 year event max
	Structural Stability of outlet	Check under PF. conditions
	Basin Batter Slopes	1V:4H max
	Spillway Embankment Slopes	1V:6H max
	Minimum Spillway Width	3 metres
	Minimum Crossfall	1:100 - Multi Use Detention Basins (Playing Fields, Parks etc)
	Desired Crossfall	1:70 - Multi Use Detention Basins (Playing Fields, Parks etc)
	Max. Crossfall Length	70 metres - Multi Use Detention Basins (Playing Fields, Parks etc)
	Drainage Location	Sited along perimeter - Multi Use Detention Basins (with Single Playing Fields)
	Crown Location	Along longest centreline - Multi Use Detention Basins (with Single Playing Fields)

Table E8 - Design Objectives - Environmental

DESIGN ISSUE	DESIGN CRITERIA
WATERWAY BANK STABILITY	Existing watercourses or drainage features shall be re-vegetated with native species. An investigation into the stability of banks is required to ensure that no allotments will be subject to erosion or landslip. The investigation needs to cover site geology, stream hydraulics, creek morphology, remediation of buffer works
WATERWAY HEALTH	• Receiving Water Quality standards shall be in accordance with the ANZECC standards. • Oil/Grit Separators are to be provided for carparks or hardstand areas of Commercial or Industrial developments where other catchment based water quality treatment devices are not available. • Council standard weir type sediment and trash traps are to be provided on all outlets of stormwater drainage pipes serving catchments greater than 2 hectares. • GPTs designed for the collection and easy removal of sediment and trash are to be provided on the outlets of stormwater drainage systems serving catchments greater than 5 hectares. • All detention basins are to include a low flow water quality treatment facility. The minimum storage time is 24 hours and the maximum storage time is 48 hours. • Water Quality Control Ponds, Lakes and/or Artificial Wetlands are to be incorporated in developments that are traversed by a natural drainage feature. Generally, these facilities will be applicable to subdivisional developments which are in excess of five (5) hectares or where Council's Engineer determines that the development will have a detrimental effect on the quality of the receiving waters. • Existing watercourses or drainage features shall be re-vegetated with native species in accordance with an approved landscaping plan.

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 Infrastructure Management.

VERSION CONTROL

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

Related Links: