Banana Shire Council
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MINUTES

BANANA SHIRE COUNCIL ORDINARY MEETING

Meeting Date: Thursday, 28th August 2025
Venue: Council Chambers, 62 Valentine Plains Road, Biloela
Time: 9.00 am

1.0 Opening of Meeting

"Council recognises that this meeting is held on the Land of the Gaangalu Nation and that the Banana Shire also includes land of the Iman People, Wulli Wulli People, Wadja People, Wakka Wakka People and Darumbal People."

2.0 Attendance including Apologies & Leave of Absence

3.0 National Anthem & Prayer

4.0 Confirmation of Minutes

4.0.1 Ordinary Meeting held 23rd July 2025

5.0 Mayor's Report / Minute

6.0 Business Outstanding

6.0.1 Business Arising from Previous Meetings & Matters Lying on the Table

7.0 Declaration of Interest on Matters on the Agenda

8.0 Notice of Motion

9.0 Financial Management

9.1.1 Budget Management Report – Period Ending 31 July 2025
9.1.2 Financial Report - Period Ending 31 July 2025
9.1.3 Major Capital Projects – Corporate & Community Services - Monthly Actual Expenditure as at 31 July 2025
9.1.4 Major Capital Projects – Infrastructure Services - Monthly Actual Expenditure as at 31 July 2025
9.1.5 Major Capital Projects – Council Services - Monthly Actual Expenditure as at 31 July 2025

9.1.6 Funding Projects – Monthly Actual Expenditure as at 31 July 2025

10.0 Corporate & Community Services

10.1 Corporate Services
10.1.1 Resolutions Actions Report
10.1.2 Water Consumption Charges Concession – Biloela Sports Clubs and Associations

10.2 Community
10.2.1 Regional Arts Development Fund Round 1 2025/2026

11.0 Infrastructure Services

11.1 Infrastructure Services
11.1.1 Resolutions Actions Report
11.1.2 Infrastructure Monthly Report
11.1.3 Infrastructure Capital Works Funding Reallocation
11.1.4 Biloela Splash Park

12.0 Council Services

12.1 Council Services
12.1.1 Resolutions Actions Report
12.1.2 Overview of the Regional Waste Education and Behaviour Change Implementation Plan
12.1.3 Fluoridation - Biloela & Moura Water Treatment Plants

12.2 Development and Planning
12.2.1 Charges Resolution (No.2) 2025
12.2.2 Draft Local Government Infrastructure Plan Amendment

13.0 Executive Services

13.1 Executive Services
13.1.1 Resolutions Actions Report
13.1.2 Register of Contact with a Lobbyist – Period Ending 30 June 2025
13.1.3 Central Queensland Regional Organisation of Councils Ltd Contribution
13.1.4 Adopt-a-Pot Strategy for Town Centre Beautification
13.1.5 Council Christmas Closures for 2025
13.1.6 Amendment to Resolution OM006480 23 July 2025 – Banana Accommodation Camp – Water by Agreement

14.0 Close of Meeting

Opening of Meeting

Meeting opened at 9:00am.

2.0 Attendance including Apologies & Leave of Absence

Councillors – Mayor Ferrier and Councillors Burling, Jensen, Casey, Leo, Bailey and Boyce via Teams.

Officers – Chief Executive Officer, Director Corporate & Community Services, Director Council Services, and Director Infrastructure Services.

3.0 National Anthem & Prayer

Following the National Anthem, Pastor Annette Hammill from the Church of Nazarene led Council in prayer.

4.0 Confirmation of Minutes

Minute No: OM006490

Resolution:

That the minutes of the Ordinary Meeting held on 23 July 2025 be taken as read and confirmed.

Moved: Cr Leo Seconded: Cr Bailey Carried

5.0 Mayor's Report / Minute

The Mayor advised on the following:

That Council and the Banana Shire community expresses their deepest condolences to the family of the late Dr Richard Tan OAM who sadly passed away on Tuesday 26th August 2025. Dr Tan was a long serving and outstanding medical practitioner who dedicated his life to serving the local the community for the past fifty-seven years. Dr Tan was also a wonderful teacher and role model to many practicing and training rural general practitioners in the area and will be truly missed.

Attended the 2025 Regional Leaders Summit with the Chief Executive Officer on 5th and 6th August 2025 where they liaised with and provided advice to fellow regional Council leaders.

Attended the annual Moura Coal & Country Festival on 15th August 2025 which was once again a fantastic event with wonderful attendance and great atmosphere.

Attended the annual Wowan Show on 16th August 2025. The crowd was enormous and attended the show early. Great effort by all involved.

The Mayor has been attending several Locusts Taskforce Meetings over the past month with the Department of Primary Industries to keep up to date with the emerging locusts swarms occurring in the Northwestern Queensland region near Hughenden and Muttaburra areas.

Attended the Queensland State Emergency Services 2025 State Awards Ceremony in Brisbane on 23rd August where the Local Banana SES Unit received the Operational Response of the Year Award for their response and rescue of two people at Robinson Gorge northwest of Taroom. It is an excellent achievement and well-deserved recognition for the dedication and efforts of the Banana SES Unit.

Invited to attend the Queensland Renewable Energy Council Parliamentary Friends of Renewables Bipartisan Networking Event on 25th August 2025 in Brisbane with State Parliament Ministers and Renewable Energy Companies.

Attended the Central Queensland Regional Organisation of Councils Parliamentary Delegations with the Chief Executive Officer in Brisbane on the 26th and 27th August 2025 where CQROC members met with several Ministers and the Premier of Queensland.

The Mayor advised that due to the closure of the North Burnett Council Washdow Bay Facilities there has been increased demand on the Washdow Bay Facilities in the Banana Shire Council area. Council is liaising with Westside Corporation and Powerlink to source funding to establish an additional Washdown Bay Facility in the Shire to accommodate the increased demand.

6.0 Business Outstanding

It was noted there was no business arising from previous meetings or matters lying on the table.

7.0 Declaration of Interest on Matters on the Agenda

It was noted there were no Declarations of Interest on Matters on the Agenda.

8.0 Notice of Motion

It was noted there were no Notice of Motions raised.

9.0 Financial Management

9.1.1 BUDGET MANAGEMENT REPORT – PERIOD ENDING 31 JULY 2025

Date: 6 August 2025
Author: Senior Financial Accountant – Harshala Ramaiya
File ID:
Letter ID:
Attachment: July 2025 Revenue and Expenditure Variance Report
Roads Expenditure Breakdown
Water Expenditure Breakdown
Sewerage Expenditure Breakdown
Waste Expenditure Breakdown
Minute No: OM006491

Resolution:

That Council receives the Budget Management Report for July 2025.

Moved: Cr Jensen Seconded: Cr Burling Carried

Report

Detailed income and expenditure report for financials is provided for Council consideration. A report explaining the variances is also provided.

This report ensures the Council have visibility of detailed income and expenditure on a monthly basis.

The expenditure and income were profiled equally between 12 months and officers explain variances on a monthly basis.

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01000 - Elected Members					
Employee Costs	66,741	5,172	.00	5,172	
Internal	69,120	5,760	.00	5,760	
Materials	26,500	2,208	655.52	1,552	
Other Expenses	528,496	40,797	39,098.04	1,699	
01000 - Elected Members Total	**690,857**	**53,937**	**39,753.56**	**14,183**	
01010 - Office of the CEO					
Contracts	22,000	1,834	7,500.00	(5,666)	
Employee Costs	796,027	61,273	66,596.79	(5,324)	
Internal	27,913	2,326	.00	2,326	
Materials	325,770	65,647	36,605.52	29,041	
Other Expenses	546,000	40,749	330,678.04	(289,929)	Insurance expense booked in July
01010 - Office of the CEO Total	**1,717,710**	**171,829**	**441,380.35**	**(269,551)**	
01020 - Governance & Risk					
Contracts	100,000	22,500	40.67	22,459	
Employee Costs	544,764	41,904	33,214.42	8,690	
Materials	4,400	367	.00	367	
Other Expenses	26,200	2,183	.00	2,183	
01020 - Governance & Risk Total	**675,364**	**66,954**	**33,255.09**	**33,699**	
01030 - Public Relations & Media					
Contracts	150,000	12,500	.00	12,500	
Employee Costs	67,589	5,199	.00	5,199	
Materials	1,500	125	1,078.45	(953)	
01030 - Public Relations & Media Total	**219,089**	**17,824**	**1,078.45**	**16,746**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01035 - Employee Overheads					
Employee Costs	8,649,500	667,910	734,234.37	(66,324)	
Internal	(9,747,320)	(749,793)	(674,367.74)	(75,425)	
Materials	267,000	20,538	10,614.77	9,923	
Other Revenues	(100,000)	(7,692)	.00	(7,692)	
01035 - Employee Overheads Total	**(930,820)**	**(69,037)**	**70,481.40**	**(139,518)**	Proportion of internal to external is different to budget
01040 - Human Resources					
Contracts	195,200	16,267	4,390.91	11,876	
Employee Costs	645,994	50,036	49,377.74	658	
Internal	34,560	2,880	.00	2,880	
Materials	75,500	6,292	71,629.30	(65,337)	
Other Expenses	2,200	183	190.88	(8)	
01040 - Human Resources Total	**953,454**	**75,658**	**125,588.83**	**(49,931)**	Timing -Annual expense booked in July
01050 - Payroll Services					
Contracts	1,000	83	.00	83	
Employee Costs	245,222	18,863	20,347.64	(1,485)	
Internal	500	42	.00	42	
Materials	1,500	125	.00	125	
01050 - Payroll Services Total	**248,222**	**19,113**	**20,347.64**	**(1,235)**	
01060 - Workplace Health & Safety					
Contracts	71,000	5,917	.00	5,917	
Employee Costs	544,449	41,908	34,633.48	7,275	
Internal	24,000	2,000	280.00	1,720	
Materials	42,700	3,559	3,596.05	(37)	
Other Expenses	2,200	183	312.66	(130)	
Other Revenues	0	0	(34,234.41)	34,234	
01060 - Workplace Health & Safety Total	**684,349**	**53,567**	**4,587.78**	**48,979**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01070 - Learning & Development					
Contracts	5,000	417	.00	417	
Employee Costs	251,853	19,599	19,949.51	(351)	
Grants - State Recurrant	(110,000)	(9,166)	.00	(9,166)	
Internal	2,500	209	.00	209	
Materials	476,500	39,711	40,920.82	(1,210)	
Other Expenses	4,100	343	.00	343	
Other Revenues	(25,000)	(2,083)	(1,421.82)	(661)	
01070 - Learning & Development Total	**604,953**	**49,030**	**59,448.51**	**(10,419)**	Timing of the grants
01080 - Process & Performance					
Contracts	162,000	20,250	14,850.00	5,400	
Employee Costs	251,837	19,408	19,295.92	112	
Internal	34,560	2,880	.00	2,880	
Materials	6,600	550	787.97	(238)	
Other Expenses	1,680	140	.00	140	
01080 - Process & Performance Total	**456,677**	**43,228**	**34,933.89**	**8,294**	
01200 - CCS Directorate - General					
Employee Costs	473,540	36,452	30,102.78	6,349	
Internal	268,790	7,041	937.50	6,104	
Materials	36,750	2,741	467.08	2,274	
Other Expenses	18,500	1,542	.00	1,542	
User Charges	(2,000)	(73)	(22.73)	(50)	
01200 - CCS Directorate - General Total	**795,580**	**47,703**	**31,484.63**	**16,218**	
01205 - Customer Service					
Employee Costs	430,447	33,116	34,555.07	(1,439)	
Internal	300	25	.00	25	
Materials	7,750	646	354.22	292	
Other Expenses	4,000	333	836.22	(503)	
01205 - Customer Service Total	**442,497**	**34,120**	**35,745.51**	**(1,626)**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01207 - Records Management					
Contracts	25,000	6,250	540.49	5,710	
Employee Costs	296,506	22,811	21,709.56	1,101	
Materials	500	125	99.40	26	
01207 - Records Management Total	**322,006**	**29,186**	**22,349.45**	**6,837**	
01210 - Finance & Accounting					
Contracts	122,500	35,000	2,086.00	32,914	
Employee Costs	1,169,287	72,649	121,759.20	(49,110)	
Grants - Federal Recurrant	(8,999,500)	0	.00	0	
Internal	34,560	2,880	31.25	2,849	
Investment Income	(1,850,000)	(154,166)	(127,303.77)	(26,862)	
Materials	31,200	2,767	24,136.77	(21,370)	
Other Expenses	99,650	8,096	2,741.56	5,354	
01210 - Finance & Accounting Total	**(9,392,303)**	**(32,774)**	**23,451.01**	**(56,225)**	Timing with rates related charges and annual expenses
01215 - Rates Services					
Contracts	125,000	167	3,593.44	(3,426)	
Employee Costs	315,850	24,329	18,124.24	6,205	
Fees	(101,000)	(8,417)	(9,339.40)	922	
Internal	700	58	.00	58	
Materials	85,000	0	1,526.40	(1,526)	
Other Expenses	15,000	0	.00	0	
Other Revenues	(152,000)	(2,667)	.00	(2,667)	
01215 - Rates Services Total	**288,550**	**13,470**	**13,904.68**	**(435)**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01220 - General Purpose Funds					
Investment Income	(86,000)	(7,250)	(1,106.97)	(6,143)	
Other Expenses	52,000	0	.00	0	
Rates	(35,058,600)	0	(69,121.25)	69,121	
Special Rates	(1,016,400)	0	1,042.24	(1,042)	
01220 - General Purpose Funds Total	**(36,109,000)**	**(7,250)**	**(69,185.98)**	**61,936**	
01230 - Inventory Management (Stores)					
Internal	(317,600)	7,700	.00	7,700	
Materials	141,500	11,792	35,473.44	(23,681)	Stock adjustment of $13,000 in July 2025
Other Expenses	16,000	1,333	1,369.86	(37)	
01230 - Inventory Management (Stores) Total	**(160,100)**	**20,825**	**36,843.30**	**(16,018)**	Manual journal of internal charges required
01235 - Procurement					
Employee Costs	420,500	32,397	36,733.36	(4,336)	
Materials	1,700	500	.00	500	
Other Expenses	250	0	.00	0	
01235 - Procurement Total	**422,450**	**32,897**	**36,733.36**	**(3,836)**	Under estimated employee costs
01250 - Information & Communication Technology					
Contracts	100,000	8,333	.00	8,333	
Depreciation Amortisation & Impairment	190,058	15,838	15,838.00	0	
Employee Costs	541,051	41,633	45,752.99	(4,120)	
Materials	650,000	162,500	391,330.16	(228,830)	
Other Expenses	506,500	42,208	48,129.23	(5,921)	
01250 - Information & Communication Technology Total	**1,987,609**	**270,512**	**501,050.38**	**(230,538)**	Timing-Annual expenses booked for licenses/subscriptions

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01255 - ICT - Enterprise Resource Planning (ERP)					
Contracts	350,000	0	.00	0	
Employee Costs	207,021	12,079	21,351.88	(9,273)	
Materials	54,000	0	.00	0	
Other Expenses	215,000	0	38,925.89	(38,926)	
01255 - ICT - Enterprise Resource Planning (ERP) Total	**826,021**	**12,079**	**60,277.77**	**(48,199)**	Timing-'Annual expenses booked for licenses/subscriptions
01270 - Geographic Information Systems (GIS)					
Contracts	5,000	0	.00	0	
Employee Costs	218,276	16,791	10,472.67	6,318	
Materials	5,000	0	.00	0	
01270 - Geographic Information Systems (GIS) Total	**228,276**	**16,791**	**10,472.67**	**6,318**	
01280 - Asset Management					
Employee Costs	215,313	16,447	16,497.51	(51)	
Materials	12,500	2,500	2,395.00	105	
01280 - Asset Management Total	**227,813**	**18,947**	**18,892.51**	**54**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01290 - Plant & Fleet Management					
Contracts	715,000	59,583	81,850.03	(22,267)	
Depreciation Amortisation & Impairment	1,845,317	153,776	153,776.00	0	
Employee Costs	769,402	59,538	60,991.93	(1,454)	
Fees	(6,000)	(500)	(1,765.45)	1,265	
Internal	(9,745,000)	(812,081)	(456,198.76)	(355,882)	Timing issue for internal overheads recovery
Materials	2,028,200	168,433	388,727.90	(220,295)	timing with Materials
Other Expenses	749,700	62,476	345,140.86	(282,665)	Timing due to annual charges
Other Revenues	(10,000)	(833)	.00	(833)	
01290 - Plant & Fleet Management Total	**(3,653,381)**	**(309,608)**	**572,522.51**	**(882,131)**	Timing due to annual charges
01295 - Aerodromes					
Contracts	91,780	7,649	1,552.10	6,097	
Depreciation Amortisation & Impairment	707,729	58,977	58,977.00	0	
Employee Costs	356,454	27,687	31,924.38	(4,237)	
Fees	(72,500)	(6,042)	(6,197.27)	155	
Internal	165,500	13,793	5,378.80	8,414	
Materials	29,950	2,496	1,557.80	938	
Other Expenses	44,073	15,100	17,866.51	(2,767)	
User Charges	(238,500)	(19,875)	(24,401.79)	4,527	
01295 - Aerodromes Total	**1,084,486**	**99,785**	**86,657.53**	**13,127**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01300 - Community Services Management					
Employee Costs	177,254	13,635	871.99	12,763	
Internal	35,000	0	.00	0	
Other Expenses	0	0	659.40	(659)	
01300 - Community Services Management Total	**212,254**	**13,635**	**1,531.39**	**12,104**	
01305 - Community Grants Operations					
Materials	450	37	.00	37	
Other Expenses	170,000	0	.00	0	
01305 - Community Grants Operations Total	**170,450**	**37**	**.00**	**37**	
01307 - Community Development					
Contracts	101,500	8,333	.00	8,333	
Contributions	(2,000)	0	.00	0	
Employee Costs	111,483	7,999	.00	7,999	
Internal	100	0	.00	0	
Materials	56,700	3,042	.00	3,042	
Other Expenses	16,100	15,083	32.72	15,050	
Other Revenues	(150)	0	.00	0	
01307 - Community Development Total	**283,733**	**34,457**	**32.72**	**34,424**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01310 - Tourism & Promotion					
Contracts	21,000	1,667	.00	1,667	
Employee Costs	102,469	7,882	7,892.08	(10)	
Fees	(1,000)	(83)	.00	(83)	
Internal	800	0	.00	0	
Materials	65,300	5,417	10,299.65	(4,883)	
Other Expenses	40,300	3,359	957.24	2,402	
Other Revenues	(2,000)	(167)	(140.90)	(26)	
01310 - Tourism & Promotion Total	**226,869**	**18,075**	**19,008.07**	**(933)**	
01320 - Arts & Culture					
Contracts	55,000	917	.00	917	
Contributions	(5,000)	(1,250)	.00	(1,250)	
Employee Costs	122,923	10,802	7,048.71	3,753	
Fees	(1,000)	(84)	(308.18)	224	
Grants - State Recurrant	(31,500)	0	.00	0	
Materials	48,062	6,222	198.27	6,024	
Other Expenses	4,500	375	2,450.94	(2,076)	
Other Revenues	(17,700)	(4,142)	(4,000.00)	(142)	
01320 - Arts & Culture Total	**175,285**	**12,840**	**5,389.74**	**7,450**	
01330 - Library Services					
Contracts	16,000	833	.00	833	
Employee Costs	1,023,090	78,658	84,724.17	(6,066)	
Fees	(22,000)	(1,000)	(1,759.37)	759	
Grants - State Recurrant	(112,437)	0	.00	0	
Internal	113,100	9,383	.00	9,383	
Materials	168,667	8,145	10,374.76	(2,230)	
Other Expenses	214,000	5,916	36,010.46	(30,094)	Insurance & licenses - annual charge in July
01330 - Library Services Total	**1,400,420**	**101,935**	**129,350.02**	**(27,415)**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01340 - Community Resource Centre					
Contracts	525,000	2,167	8,265.57	(6,099)	
Depreciation Amortisation & Impairment	72,282	6,023	6,023.00	0	
Employee Costs	269,054	20,542	32,229.62	(11,688)	
Fees	(60,500)	0	(17,629.54)	17,630	
Grants - State Recurrant	(701,000)	0	.00	0	
Internal	39,000	0	102.00	(102)	
Materials	226,500	16,083	1,961.39	14,122	
Other Expenses	29,000	0	8,931.16	(8,931)	
User Charges	0	0	(2.73)	3	
01340 - Community Resource Centre Total	**399,336**	**44,815**	**39,880.47**	**4,935**	
01350 - Home Care Services					
Contracts	371,809	30,068	11,335.84	18,732	
Contributions	(835,000)	0	(32,317.91)	32,318	
Employee Costs	219,086	13,728	43,878.90	(30,151)	
Grants - Federal Recurrant	(36,000)	0	.00	0	
Internal	67,000	0	.00	0	
Materials	14,000	0	1,785.23	(1,785)	
Other Expenses	36,500	0	1,858.87	(1,859)	
User Charges	(1,200)	0	(40.00)	40	
01350 - Home Care Services Total	**(163,805)**	**43,796**	**26,500.93**	**17,295**	
01400 - Council Services Directorate - General					
Employee Costs	799,071	61,507	73,337.53	(11,831)	
Internal	24,000	2,000	242.38	1,758	
Materials	12,000	1,000	1,402.65	(403)	
01400 - Council Services Directorate - General Total	**835,071**	**64,507**	**74,982.56**	**(10,476)**	Under estimated employee costs

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01405 - Plumbing & Building Services					
Contracts	11,000	0	.00	0	
Employee Costs	258,579	20,095	20,478.39	(383)	
Fees	(249,500)	(19,508)	(19,708.91)	201	
Internal	22,000	2,250	.00	2,250	
Materials	6,400	500	.00	500	
Other Expenses	5,565	380	868.07	(488)	
01405 - Plumbing & Building Services Total	**54,044**	**3,717**	**1,637.55**	**2,079**	
01410 - Planning Services					
Contracts	120,000	10,000	.00	10,000	
Employee Costs	292,147	22,473	14,678.15	7,795	
Fees	(175,000)	(14,583)	(4,907.00)	(9,676)	
Materials	1,350	50	1,566.37	(1,516)	
Other Expenses	600	0	.00	0	
01410 - Planning Services Total	**239,097**	**17,940**	**11,337.52**	**6,602**	
01415 - Environmental Health					
Contracts	19,000	1,583	.00	1,583	
Employee Costs	288,347	22,204	26,085.99	(3,882)	
Fees	(90,000)	(7,500)	(64,622.00)	57,122	
Grants - State Recurrant	(40,200)	0	.00	0	
Internal	60,000	5,000	.00	5,000	
Materials	9,669	807	1,071.20	(264)	
Other Expenses	3,630	302	330.64	(29)	
Other Revenues	(11,000)	(917)	(327.70)	(589)	
01415 - Environmental Health Total	**239,446**	**21,479**	**(37,461.87)**	**58,941**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01420 - Environmental Sustainability					
Employee Costs	355,877	27,387	22,808.68	4,578	
Internal	30,000	2,500	.00	2,500	
Materials	7,050	587	1,899.29	(1,312)	
Other Revenues	(17,500)	(1,458)	(2,971.00)	1,513	
01420 - Environmental Sustainability Total	**375,427**	**29,016**	**21,736.97**	**7,279**	
01425 - Land Protection					
Contracts	29,600	2,466	544.00	1,922	
Employee Costs	927,130	71,347	67,089.43	4,258	
Fees	(110,000)	(9,167)	(1,619.68)	(7,547)	
Internal	101,441	8,453	4,286.16	4,167	
Materials	162,255	13,521	7,898.29	5,623	
Other Expenses	6,816	568	207.24	361	
01425 - Land Protection Total	**1,117,242**	**87,188**	**78,405.44**	**8,783**	
01430 - Stock Routes					
Contracts	65,100	5,424	.00	5,424	
Fees	(160)	(13)	.00	(13)	
Internal	600	50	.00	50	
Materials	1,577	132	.00	132	
Other Expenses	450	37	.00	37	
User Charges	(279)	(23)	.00	(23)	
01430 - Stock Routes Total	**67,288**	**5,607**	**.00**	**5,607**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01440 - Dip Yards					
Contracts	6,200	517	.00	517	
Employee Costs	1,686	140	1,393.95	(1,254)	
Fees	(30,000)	(2,500)	(3,514.07)	1,014	
Internal	4,599	383	1,536.50	(1,154)	
Materials	19,000	1,583	488.37	1,095	
Other Expenses	40,649	3,387	2,355.46	1,032	
User Charges	(80,000)	(6,667)	(10,069.42)	3,402	
01440 - Dip Yards Total	**(37,866)**	**(3,157)**	**(7,809.21)**	**4,652**	
01445 - Washdown Facilities					
Contracts	48,179	4,014	1,183.20	2,831	
Depreciation Amortisation & Impairment	73,324	6,110	6,110.00	0	
Employee Costs	0	0	168.72	(169)	
Internal	2,500	208	.00	208	
Materials	25,957	2,162	206.92	1,955	
Other Expenses	32,331	2,692	9,607.39	(6,915)	
User Charges	(68,100)	(5,675)	(8,279.05)	2,604	
01445 - Washdown Facilities Total	**114,191**	**9,511**	**8,997.18**	**514**	
01450 - Animal Control					
Contracts	19,000	2,000	5,327.24	(3,327)	
Employee Costs	412,475	31,706	35,076.53	(3,371)	
Fees	(74,280)	(1,440)	(24,879.10)	23,439	
Internal	43,000	3,580	.00	3,580	
Materials	37,924	7,127	88.85	7,038	
Other Expenses	23,700	6,115	3,095.69	3,019	
Other Revenues	(19,000)	(1,000)	(1,097.85)	98	
01450 - Animal Control Total	**442,819**	**48,088**	**17,611.36**	**30,477**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01455 - Local Laws					
Contracts	6,000	40,000	(166.39)	40,166	
Employee Costs	250	0	.00	0	
Materials	1,500	0	427.49	(427)	
Other Revenues	(7,200)	0	.00	0	
01455 - Local Laws Total	**550**	**40,000**	**261.10**	**39,739**	
01465 - Cemeteries					
Contracts	75,000	6,153	790.00	5,363	
Employee Costs	0	0	945.23	(945)	
Fees	(85,100)	(6,655)	(13,542.21)	6,887	
Internal	6,000	705	466.00	239	
Materials	6,500	375	.00	375	
Other Expenses	18,250	1,600	3,414.63	(1,815)	
01465 - Cemeteries Total	**20,650**	**2,178**	**(7,926.35)**	**10,104**	
01470 - Swimming Pools					
Contracts	852,000	82,100	12,190.71	69,909	
Depreciation Amortisation & Impairment	468,189	39,016	39,016.00	0	
Internal	9,500	0	.00	0	
Materials	355,700	30,444	26,817.45	3,627	
Other Expenses	289,000	14,753	51,679.08	(36,926)	
01470 - Swimming Pools Total	**1,974,389**	**166,313**	**129,703.24**	**36,610**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01475 - Properties - Land and Leased					
Contracts	596,700	51,205	69,813.32	(18,608)	
Employee Costs	227,660	17,512	11,117.80	6,394	
Fees	(600,500)	(44,063)	(61,701.07)	17,638	
Internal	40,000	925	953.50	(29)	
Materials	438,700	34,955	(6,676.26)	41,631	
Other Expenses	821,450	47,385	235,724.30	(188,339)	Annual insurance booked in July
Other Revenues	(16,000)	0	(2,245.86)	2,246	
User Charges	(7,890)	0	(1,765.55)	1,766	
01475 - Properties - Land and Leased Total	**1,500,120**	**107,919**	**245,220.18**	**(137,301)**	
01480 - Properties - Construction & Maintenance					
Contracts	853,700	55,800	43,131.01	12,669	
Depreciation Amortisation & Impairment	3,766,910	313,908	313,908.00	0	
Employee Costs	404,863	31,321	36,258.35	(4,937)	
Internal	59,400	4,900	1,697.65	3,202	
Materials	121,900	10,900	9,237.40	1,663	
Other Expenses	0	0	136.27	(136)	
01480 - Properties - Construction & Maintenance Total	**5,206,773**	**416,829**	**404,368.68**	**12,460**	
01485 - Native Title & Cultural Heritage					
Contracts	140,000	11,667	.00	11,667	
01485 - Native Title & Cultural Heritage Total	**140,000**	**11,667**	**.00**	**11,667**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01490 - Economic Development					
Contracts	84,000	0	.00	0	
Contributions	(12,000)	0	.00	0	
Employee Costs	167,503	12,885	13,756.13	(871)	
Materials	125,000	1,500	2,047.26	(547)	
01490 - Economic Development Total	**364,503**	**14,385**	**15,803.39**	**(1,418)**	
01500 - Kerbside Waste Services					
Annual Charges	(2,350,000)	0	(891.44)	891	
Contracts	852,800	71,067	69,299.83	1,767	
Employee Costs	0	0	1,765.62	(1,766)	
Internal	279	23	7.25	16	
Investment Income	(8,000)	0	(206.63)	207	
Materials	4,557	379	.00	379	
Other Expenses	1,488	124	103.62	20	
User Charges	(784,150)	0	(3,496.27)	3,496	
01500 - Kerbside Waste Services Total	**(2,283,026)**	**71,593**	**66,581.98**	**5,011**	
01510 - Waste Facilities					
Contracts	1,767,512	147,291	34,699.28	112,592	
Depreciation Amortisation & Impairment	178,770	14,897	14,897.00	0	
Employee Costs	1,118,831	86,119	79,263.20	6,856	
Fees	(1,528,500)	(127,374)	(81,932.71)	(45,441)	
Grants - Federal Recurrant	(525,000)	(43,750)	.00	(43,750)	
Internal	1,334,100	111,174	25,799.07	85,375	
Materials	262,059	21,840	45,700.57	(23,861)	
Other Expenses	1,472,988	125,567	34,482.67	91,084	
Other Revenues	(1,100)	(91)	.00	(91)	
User Charges	(105,500)	(8,792)	(2,052.00)	(6,740)	
01510 - Waste Facilities Total	**3,974,160**	**326,881**	**150,857.08**	**176,024**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01600 - Water					
Annual Charges	(5,142,900)	0	2,509.01	(2,509)	
Contracts	932,370	77,698	16,371.28	61,327	
Depreciation Amortisation & Impairment	4,460,858	371,737	371,737.00	0	
Employee Costs	3,051,435	236,073	206,292.51	29,780	
Fees	0	0	(2,062.50)	2,063	
Grants - State Non Recurrant	(180,000)	0	.00	0	
Internal	469,027	39,086	22,528.76	16,557	
Investment Income	(27,500)	(2,292)	(500.35)	(1,792)	
Materials	2,195,603	182,967	65,268.49	117,699	
Other Expenses	2,117,005	176,414	328,698.11	(152,284)	
User Charges	(3,355,600)	(36,584)	(76,202.20)	39,618	
01600 - Water Total	**4,520,298**	**1,045,099**	**934,640.11**	**110,459**	
01700 - Sewerage					
Annual Charges	(5,493,100)	0	736.36	(736)	
Contracts	516,536	43,045	16,976.78	26,068	
Depreciation Amortisation & Impairment	2,031,621	169,301	169,301.00	0	
Employee Costs	1,247,380	97,015	134,385.46	(37,370)	
Fees	(140,000)	(11,666)	(11,930.22)	264	
Internal	141,258	11,771	10,169.98	1,601	
Investment Income	(19,100)	(1,592)	(296.61)	(1,295)	
Materials	1,240,449	103,369	23,980.05	79,389	
Other Expenses	407,040	33,920	172,408.27	(138,488)	
Other Revenues	(10,000)	(833)	(611.00)	(222)	
User Charges	462,300	0	(683.06)	683	
01700 - Sewerage Total	**384,384**	**444,330**	**514,437.01**	**(70,107)**	Timing with other expenses and employees

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01800 - Infrastructure Services - General					
Contracts	18,000	250	24,331.88	(24,082)	
Employee Costs	1,269,607	98,556	83,642.40	14,914	
Grants - Federal Recurrant	(6,386,140)	0	.00	0	
Internal	150,000	12,500	139,307.24	(126,807)	No budget for Plant hire under master 1800 - Infra General
Materials	50,000	2,751	3,154.00	(403)	
Other Expenses	156,717	13,060	26,060.37	(13,000)	
01800 - Infrastructure Services - General Total	**(4,741,816)**	**127,117**	**276,495.89**	**(149,379)**	
01805 - Depot Operations					
Contracts	654,582	54,549	60,954.47	(6,405)	
Employee Costs	1,574,826	121,658	104,693.21	16,965	
Internal	(379,720)	(31,643)	66.51	(31,710)	
Materials	168,600	14,049	6,591.83	7,457	
Other Expenses	156,560	23,405	26,292.94	(2,888)	
01805 - Depot Operations Total	**2,174,848**	**182,018**	**198,598.96**	**(16,581)**	Depot recoveries mapped to Employee overheads, budget will be transferred
01810 - Roads Maintenance Performance Contract					
Contracts	689,721	57,477	8,235.00	49,242	
Employee Costs	1,756,279	135,101	62,467.22	72,634	
Fees	(5,100,000)	(424,998)	(1,217,234.11)	792,236	
Internal	750,000	62,500	14,612.77	47,887	
Materials	1,362,000	113,501	10,626.52	102,874	
Other Expenses	0	0	57.61	(58)	
01810 - Roads Maintenance Performance Contract Total	**(542,000)**	**(56,419)**	**(1,121,234.99)**	**1,064,816**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01815 - Other Main Roads Contract					
Contracts	500,000	0	1,834.61	(1,835)	
Employee Costs	0	0	3,244.05	(3,244)	
Fees	(2,200,000)	0	.00	0	
Internal	500,000	0	1,748.00	(1,748)	
Materials	1,000,000	0	4,256.95	(4,257)	
01815 - Other Main Roads Contract Total	**(200,000)**	**0**	**11,083.61**	**(11,084)**	Revenue timing issue
01820 - Private Works					
Contracts	20,000	0	.00	0	
Fees	(70,000)	0	.00	0	
Internal	20,000	0	.00	0	
Materials	20,000	0	.00	0	
01820 - Private Works Total	**(10,000)**	**0**	**.00**	**0**	
01825 - Roads Bridges and Drainage					
Contracts	20,527,755	1,710,639	46,934.50	1,663,705	
Depreciation Amortisation & Impairment	12,101,834	1,008,482	998,707.00	9,775	
Employee Costs	3,399,689	261,517	301,964.14	(40,447)	
Grants - Federal Recurrant	(2,463,934)	0	.00	0	
Grants - State Non Recurrant	(28,000,000)	(3,464,568)	.00	(3,464,568)	
Grants - State Recurrant	(1,463,934)	0	.00	0	
Internal	2,975,000	247,915	174,986.12	72,929	
Materials	5,505,000	458,748	111,118.30	347,630	
Other Expenses	170,000	14,167	799.26	13,368	
01825 - Roads Bridges and Drainage Total	**12,751,410**	**236,900**	**1,634,509.32**	**(1,397,609)**	Revenue yet to be recognised

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01827 - Bikeways & Footpaths					
Employee Costs	0	0	403.80	(404)	
Internal	50,000	4,167	68.75	4,098	
01827 - Bikeways & Footpaths Total	**50,000**	**4,167**	**472.55**	**3,694**	
01830 - Parks & Open Spaces					
Contracts	673,869	53,049	23,375.11	29,674	
Employee Costs	1,932,719	149,157	134,732.83	14,424	
Fees	(20,000)	(1,667)	(1,875.95)	209	
Internal	600,000	48,440	19,822.57	28,617	
Materials	319,750	26,648	4,883.32	21,765	
Other Expenses	291,500	65,958	47,833.42	18,125	
01830 - Parks & Open Spaces Total	**3,797,838**	**341,585**	**228,771.30**	**112,814**	
01835 - Public Toilets					
Contracts	20,000	1,666	.00	1,666	
Employee Costs	321,251	24,741	10,520.56	14,220	
Internal	20,000	1,666	984.75	681	
Materials	(103,664)	(8,636)	2,548.90	(11,185)	
Other Expenses	50,000	4,167	3,086.15	1,081	
01835 - Public Toilets Total	**307,587**	**23,604**	**17,140.36**	**6,464**	
01850 - Technical Services Management					
Contracts	342,309	28,526	26,208.00	2,318	
Employee Costs	450,417	34,648	46,386.38	(11,738)	
Fees	(50,000)	(4,167)	.00	(4,167)	
Internal	35,134	2,928	85.00	2,843	
Materials	137,640	11,470	6,317.01	5,153	
Other Expenses	0	0	245.42	(245)	
01850 - Technical Services Management Total	**915,500**	**73,405**	**79,241.81**	**(5,837)**	

Resource Group	Annual Current Budget	YTD Current Budget	YTD Actuals	YTD Variance	Comments
01855 - Design & Survey					
Contracts	833,167	69,430	14,167.25	55,263	
Employee Costs	206,333	15,871	10,662.38	5,209	
Grants - State Non Recurrant	(411,000)	0	.00	0	
01855 - Design & Survey Total	**628,500**	**85,301**	**24,829.63**	**60,471**	
01860 - Development Engineering					
Employee Costs	5,000	(360)	4,658.04	(5,018)	
Fees	(100,000)	(8,333)	(1,559.16)	(6,774)	
Materials	10,000	834	.00	834	
01860 - Development Engineering Total	**(85,000)**	**(7,859)**	**3,098.88**	**(10,958)**	Timing with fee
01865 - Disaster Management					
Contracts	61,000	83	.00	83	
Depreciation Amortisation & Impairment	20,515	1,710	1,710.00	0	
Employee Costs	139,489	10,730	9,513.54	1,216	
Internal	24,000	2,000	.00	2,000	
Materials	59,650	4,971	16,802.45	(11,831)	Annual membership charges posted in July
Other Expenses	7,400	3,733	3,494.92	238	
01865 - Disaster Management Total	**312,054**	**23,227**	**31,520.91**	**(8,294)**	
01870 - State Emergency Services (SES)					
Contracts	100	100	.00	100	
Grants - State Recurrant	(31,275)	0	.00	0	
Materials	1,200	1,200	.00	1,200	
Other Expenses	44,826	13,251	12,938.68	312	
01870 - State Emergency Services (SES) Total	**14,851**	**14,551**	**12,938.68**	**1,612**	
Total	**(41,767)**	**4,977,063**	**6,454,599.00**	**(1,477,536)**	

Resource Group	Annual Current Budget	YTD Actuals	Commitments
01825 - Roads Bridges and Drainage			
Drainage			
Projects			
Contracts	0	21,450	9,229
Employee Costs	248,406	27,854	0
Internal	0	12,940	0
Materials	0	6,115	800
Projects Total	**248,406**	**68,360**	**10,029**
Drainage Total	**248,406**	**68,360**	**10,029**
Other			
Depreciation Amortisation & Impairment	12,101,834	998,707	0
No WO Classification 3 Total	**12,101,834**	**998,707**	**0**
Other Total	**12,101,834**	**998,707**	**0**
Roads			
Administration			
Materials	0	0	4,600
Administration Total	**0**	**0**	**4,600**
Flood			
Contracts	19,774,759	25,485	976,476
Employee Costs	1,235,950	133,944	0
Grants - State Non Recurrant	-28,000,000	0	0
Internal	2,035,835	95,880	0
Materials	5,005,000	22,197	105,156
Flood Total	**51,544**	**277,506**	**1,081,632**
Projects			
Contracts	752,996	0	0
Grants - Federal Recurrant	-2,463,934	0	0
Grants - State Recurrant	-1,463,934	0	0
Internal	939,165	0	0
Materials	500,000	0	0
Projects Total	**-1,735,707**	**0**	**0**
Roads Sealed			
Contracts	0	4,410	19,480
Employee Costs	953,147	86,286	0
Internal	0	32,635	0
Materials	0	86,430	10,518
Other Expenses	0	168	0
Roads Sealed Total	**953,147**	**209,929**	**29,997**

Roads Unsealed			
Contracts	0	14,200	8,963
Employee Costs	962,186	50,135	0
Internal	0	32,101	0
Materials	0	20,866	130,411
Roads Unsealed Total	**962,186**	**117,302**	**139,374**
Street Cleaning			
Contracts	0	0	49,500
Employee Costs	0	3,745	0
Internal	0	1,430	0
Materials	0	66	0
Other Expenses	0	35	0
Street Cleaning Total	**0**	**5,276**	**49,500**
Street Lighting			
Other Expenses	170,000	597	0
Street Lighting Total	**170,000**	**597**	**0**
Roads Total	**401,170**	**610,609**	**1,305,103**
01825 - Roads Bridges and Drainage Total	**12,751,410**	**1,677,675**	**1,315,132**
Total	**12,751,410**	**1,677,675**	**1,315,132**

Resource Group	Annual Current Budget	YTD Actuals	Commitments
01600 - Water			
Other			
Annual Charges	-5,142,900	2,509	0
Contracts	0	3,690	146,398
Depreciation Amortisation & Impairment	4,460,858	371,737	0
Employee Costs	1,047,405	71,657	255
Fees	0	-2,063	23,191
Grants - State Non Recurrant	-180,000	0	0
Internal	0	4,924	0
Investment Income	-27,500	-500	0
Materials	0	16,828	15,872
Other Expenses	0	49,824	0
User Charges	-2,916,600	-574	0
Other Total	**-2,758,737**	**518,031**	**185,716**
Thangool			
Contracts	11,250	0	7,342
Employee Costs	1,911	1,069	0
Internal	2,535	13	0
Materials	16,609	223	4,381
Other Expenses	25,275	3,574	0
User Charges	-1,000	0	0
Thangool Total	**56,580**	**4,878**	**11,723**
Goovigen			
Contracts	12,750	0	10,736
Employee Costs	1,775	2,524	0
Internal	2,834	0	0
Materials	25,867	322	753
Other Expenses	8,697	2,805	313
Goovigen Total	**51,923**	**5,652**	**11,803**
Taroom			
Contracts	59,225	0	21,018
Employee Costs	189,929	11,216	0
Internal	21,060	2,909	0
Materials	87,557	7,132	8,230
Other Expenses	23,382	13,110	313
User Charges	-22,000	0	0
Taroom Total	**359,153**	**34,367**	**29,561**

Resource Group	Annual Current Budget	YTD Actuals	Commitments
Wowan			
Contracts	7,500	-2,293	0
Employee Costs	734	3,321	0
Internal	1,885	280	0
Materials	31,997	173	658
Other Expenses	4,001	1,130	313
Wowan Total	**46,117**	**2,611**	**971**
Banana			
Contracts	25,850	5,111	0
Employee Costs	3,224	2,716	0
Internal	5,590	106	0
Materials	39,169	381	3,586
Other Expenses	27,501	5,839	0
User Charges	-5,000	0	0
Banana Total	**96,334**	**14,153**	**3,586**
Baralaba			
Contracts	60,104	1,330	16,681
Employee Costs	6,266	6,697	0
Internal	42,952	745	0
Materials	131,105	73	4,757
Other Expenses	184,993	32,333	0
User Charges	-30,000	-2,415	0
Baralaba Total	**395,420**	**38,763**	**21,438**
Earlsfield			
Other Expenses	0	7,996	0
Earlsfield Total	**0**	**7,996**	**0**
Callide Dam			
Employee Costs	1,200	0	0
Internal	1,248	0	0
Materials	3,694	0	0
Other Expenses	4,163	0	0
Callide Dam Total	**10,305**	**0**	**0**
Theodore			
Contracts	62,599	1,023	9,478
Employee Costs	109,799	11,943	0
Internal	19,474	1,883	0
Materials	140,510	5,307	223
Other Expenses	152,284	26,680	311
User Charges	-5,000	-32	0
Theodore Total	**479,666**	**46,805**	**10,012**

Resource Group	Annual Current Budget	YTD Actuals	Commitments
Cracow			
Contracts	500	0	0
Employee Costs	16	0	0
Internal	1,131	0	0
Materials	400	0	0
Other Expenses	17,163	257	0
Cracow Total	**19,210**	**257**	**0**
Moura			
Contracts	92,748	570	22,119
Employee Costs	487,531	28,218	0
Internal	70,174	2,338	0
Materials	317,419	4,256	35,702
Other Expenses	586,047	84,559	0
User Charges	-150,000	-11,826	0
Moura Total	**1,403,919**	**108,115**	**57,822**
General			
Contracts	479,904	0	0
Internal	191,360	0	0
Materials	360,457	0	0
General Total	**1,031,721**	**0**	**0**
Biloela			
Contracts	119,940	6,939	45,636
Employee Costs	1,201,645	63,765	0
Internal	108,784	8,452	0
Materials	1,040,819	27,716	51,549
Other Expenses	1,083,499	93,206	47,251
User Charges	-226,000	-61,355	0
Biloela Total	**3,328,687**	**138,722**	**144,436**
Callide			
Contracts	0	0	1,273
Employee Costs	0	3,168	0
Internal	0	880	0
Materials	0	2,906	0
Other Expenses	0	7,385	61,285
Callide Total	**0**	**14,338**	**62,558**
01600 - Water Total	**4,520,298**	**934,687**	**539,626**
Total	**4,520,298**	**934,687**	**539,626**

Resource Group	Annual Current Budget	YTD Actuals	Commitments
01700 - Sewerage			
Other			
Annual Charges	-5,493,100	736	0
Contracts	0	0	159,189
Depreciation Amortisation & Impairment	2,031,621	169,301	0
Employee Costs	537,684	61,510	0
Internal	0	100	0
Investment Income	-19,100	-297	0
Other Expenses	0	2,573	0
User Charges	462,300	-443	0
Other Total	**-2,480,595**	**233,480**	**159,189**
Taroom			
Contracts	29,500	1,937	17,662
Employee Costs	175,703	14,933	0
Internal	36,660	4,316	0
Materials	169,906	5,081	22,185
Other Expenses	49,315	21,392	0
Taroom Total	**461,084**	**47,658**	**39,847**
Theodore			
Contracts	83,000	3,703	34,429
Employee Costs	123,327	10,120	0
Internal	22,880	2,607	0
Materials	126,697	16	4,974
Other Expenses	90,291	22,477	0
Other Revenues	-10,000	0	0
Theodore Total	**436,195**	**38,922**	**39,403**
Moura			
Contracts	145,820	2,552	38,045
Employee Costs	49,130	17,790	0
Fees	-40,000	-4,921	0
Internal	25,974	1,500	0
Materials	221,747	1,035	14,004
Other Expenses	113,190	47,633	0
Other Revenues	0	-451	0
Moura Total	**515,861**	**65,137**	**52,049**

Resource Group	Annual Current Budget	YTD Actuals	Commitments
General			
Contracts	157,380	0	0
Materials	361,400	0	0
General Total	**518,780**	**0**	**0**
Biloela			
Contracts	100,836	8,785	265,058
Employee Costs	361,536	30,033	0
Fees	-100,000	-7,009	0
Internal	55,744	1,648	0
Materials	360,699	17,934	28,704
Other Expenses	154,244	78,334	0
Other Revenues	0	-160	0
User Charges	0	-240	0
Biloela Total	**933,059**	**129,324**	**293,762**
01700 - Sewerage Total	**384,384**	**514,522**	**584,250**
Total	**384,384**	**514,522**	**584,250**

Resource Group	Annual Current Budget	YTD Actuals	Commitments
01510 - Waste Facilities			
Other			
Depreciation Amortisation & Impairment	178,770	14,897	0
Grants - Federal Recurrant	-525,000	0	0
Other Expenses	1,400,000	0	259,844
Other Total	**1,053,770**	**14,897**	**259,844**
Thangool			
Contracts	41,500	0	2,235
Employee Costs	22,228	2,229	0
Internal	47,500	2,812	0
Materials	14,500	5,664	0
Other Expenses	2,962	438	0
Thangool Total	**128,690**	**11,144**	**2,235**
Taroom			
Contracts	27,000	0	6,340
Employee Costs	184,389	15,157	0
Internal	66,700	4,181	0
Materials	5,950	6,380	0
Other Expenses	13,473	3,002	0
User Charges	-2,000	0	0
Taroom Total	**295,512**	**28,719**	**6,340**
Wowan			
Contracts	56,100	0	2,485
Employee Costs	10,928	1,217	0
Internal	20,500	512	0
Materials	8,200	0	0
Other Expenses	3,097	849	0
Wowan Total	**98,825**	**2,579**	**2,485**
Banana			
Contracts	127,120	8,010	17,700
Employee Costs	0	891	0
Internal	12,500	592	0
Materials	3,000	0	0
Other Expenses	4,750	444	0
Banana Total	**147,370**	**9,938**	**17,700**

Resource Group	Annual Current Budget	YTD Actuals	Commitments
Baralaba			
Contracts	37,800	0	2,485
Employee Costs	11,188	1,426	0
Internal	27,800	3,062	0
Materials	8,977	5,664	0
Other Expenses	2,538	686	0
Baralaba Total	**88,303**	**10,839**	**2,485**
Theodore			
Contracts	139,000	1,410	3,685
Employee Costs	16,243	1,733	0
Internal	73,300	2,550	0
Materials	8,500	5,664	0
Other Expenses	2,832	1,252	0
Theodore Total	**239,875**	**12,609**	**3,685**
Cracow			
Contracts	8,000	0	0
Employee Costs	0	460	0
Internal	17,000	664	0
Materials	12,000	5,664	0
Other Expenses	3,542	1,053	0
Cracow Total	**40,542**	**7,842**	**0**
Moura			
Contracts	406,500	24,884	52,321
Employee Costs	16,243	1,278	0
Internal	29,300	2,549	0
Materials	18,200	330	0
Other Expenses	6,662	1,234	0
Other Revenues	-100	0	0
Moura Total	**476,805**	**30,275**	**52,321**
Trap Gully Landfill			
Contracts	135,000	264	274,860
Employee Costs	418,063	16,862	0
Fees	-1,528,500	-81,933	0
Internal	931,500	5,100	0
Materials	100,159	6,418	4,989
Other Expenses	8,875	7,116	0
Trap Gully Landfill Total	**65,097**	**-46,172**	**279,849**

Resource Group	Annual Current Budget	YTD Actuals	Commitments
Biloela			
Contracts	761,442	131	194,762
Employee Costs	434,035	36,595	0
Internal	75,200	1,908	0
Materials	74,420	4,250	0
Other Expenses	21,457	17,534	0
Other Revenues	-1,000	0	0
User Charges	-103,500	-2,052	0
Biloela Total	**1,262,054**	**58,365**	**194,762**
Jambin			
Contracts	28,050	0	2,735
Employee Costs	5,514	1,414	0
Internal	32,800	1,870	0
Materials	8,153	5,664	0
Other Expenses	2,800	874	0
Jambin Total	**77,317**	**9,823**	**2,735**
01510 - Waste Facilities Total	**3,974,160**	**150,857**	**824,442**
Total	**3,974,160**	**150,857**	**824,442**

9.1.2 FINANCIAL REPORT – PERIOD ENDING 31 JULY 2025

Date: 6 August 2025
Author: Senior Financial and Systems Accountant – Harshala Ramaiya
File ID: 2306
Letter ID:
Attachment: Statement of Comprehensive Income – Actual v Budget to 31 July 2025
Statement of Financial Position – Actual v Budget to 31 July 2025
Statement of Cash Flows – Actual v Budget to 31 July 2025
Statement of Changes in Equity – Actual v Budget to 31 July 2025
Restricted Cash Report as at 31 July 2025
Cash report as at 31 July 2025
Minute No: OM006492

Resolution:

The Council receives the attached Financial Report as tabled for the period ending 31 July 2025.

Moved: Cr Boyce Seconded: Cr Casey Carried

This report is a legislative requirement.

Report

1. Introduction

The purpose of the Financial Report is to give the Council an overview of the organisation's financial performance for the period ending 31 July 2025.

The report format compares the year to date to the 2025/2026 budget. The year-to-date budget is 8.33% of the budget. The financial analysis contained in this report compares, either year to date expenditure with an equivalent budget to date expenditure or, in the case of rates, year to date expenditure with an appropriate cash flow position.

2. Report

Comprehensive Income Statement:

Council recorded an operating deficit of $6.45M at the end of July 2025. At the same time last year, they had an operating surplus of $4.33M. This change relates to the receipt of $12.5M of the prior year Financial Assistance Grants in July 2024, whereas the 2025/2026 50% prepayment was received in June 2025 – last financial year.

On 31 July 2025, the Cash balance was $31.84M. At the same time last year, the cash balance was at $40.20M. The variance is largely related to timing associated with the flood grants recovery.

All the $31.84M cash balance is internally or externally restricted. The restricted cash report is an attachment to the financial report. Council hasn't received any revenue towards the December 2021 flood event since September 2024.

BANANA SHIRE COUNCIL

Statement of Comprehensive Income

For the period ended 31 July 2025

	Original Budget	YTD Actuals
	$	$
Revenue		
Rates and utility charges	58,152,000	79,990
Less Discounts & Pensioner remissions	(5,663,900)	(8,493)
Net rates and utility charges	52,488,100	71,497
Fees and charges	3,312,209	389,282
Rental and levies	449,000	60,020
Operating grants, subsidies and contributions	22,309,920	32,318
Interest revenue	1,994,950	129,432
Sales - contract and recoverable works	7,450,000	1,217,234
Proceeds from sales of land developmed for resale	-	-
Other income	613,450	47,260
TOTAL OPERATING REVENUES	**88,617,629**	**1,947,043**
Expenses		
Employee benefits	31,624,326	2,522,743
Materials and services	30,883,428	3,725,900
Depreciation and Amortisation	25,917,407	2,150,000
Finance Costs	150,700	2,999
Current cost of developed land sold	-	-
TOTAL OPERATING EXPENDITURE	**88,575,861**	**8,401,642**
Operating surplus (deficit)	**41,768**	**(6,454,599)**
Cash capital grants, subsidies and contributions	37,307,407	75,650
Developer contributions		
Other capital income	628,000	
Net Gain/(Loss) from capital write offs	(18,470,632)	(76,006)
Net Gain/(Loss) on sale of Plant assets	-	-
Increase in rehabilitation provision	-	-
Net result	**19,506,543**	**(6,302,943)**

BANANA SHIRE COUNCIL

Statement of Financial Position

For the period ended 31 July 2025

	Original Budget	YTD Actuals
	$	$
Current Assets		
Cash and deposits	31,520,578	31,838,668
Investments		
Receivables	2,940,628	4,015,166
Inventories	3,024,856	3,115,205
Contract assets	16,000,000	15,900,381
Other Assets		
Total Current Assets	53,486,062	54,869,420
Non-Current Assets		
Property, plant and equipment	1,015,543,706	992,277,914
Intangible assets	159,253	162,653
Capital Work in Progress	74,418,383	77,975,367
Total Non-Current Assets	1,090,121,342	1,070,415,934
TOTAL ASSETS	**1,143,607,404**	**1,125,285,354**
Current Liabilities		
Trade and other payables	1,780,000	1,127,161
Provisions	5,400,000	5,849,275
Contract liabilities	20,000,000	24,496,681
Other		524,208
Total Current Liabilities	27,180,000	31,997,325
Non-Current Liabilities		
Provisions	14,062,813	14,057,682
Interest bearing liabilities		
Other	1,000,000	546,112
Total Non-Current Liabilities	15,062,813	14,603,794
TOTAL LIABILITIES	**42,242,813**	**46,601,119**
NET COMMUNITY ASSETS	**1,101,364,591**	**1,078,684,235**
Community Equity		
Investment in Capital Assets	257,671,114	234,406,999
Asset revaluation reserve	830,381,160	831,383,001
Reserves	35,615,224	8,770,661
Retained Surplus	(22,302,906)	4,123,574
TOTAL COMMUNITY EQUITY	**1,101,364,591**	**1,078,684,235**

BANANA SHIRE COUNCIL

Statement of Cash Flows

For the period ended 31 July 2025

	Original Budget	YTD Actuals
	$	$
Cash Flows from Operating Activities		
Receipts from customers	55,515,133	436,089
Receipts from Contracts and Recoverable Works	7,450,000	1,217,234
Payment to suppliers and employees	(64,712,842)	(5,664,190)
Government subsidies and grants	22,297,920	32,318
Interest revenue	1,994,950	129,432
Finance costs	(96,200)	-
Proceeds from sale of developed land	-	-
Land and Development Costs	-	-
Other Income	2,179,842	(1,321,830)
Other Expenses	-	-
GST received/(paid) for the year	-	(1,439,608)
Cash provided by/(used in) operational activities	**24,628,803**	**(6,610,555)**
Cash Flow from Investing Activities :		
Proceeds from sale of capital assets	400,000	76,006
Proceeds from developers, corporate entities and governi	-	-
for capital projects:	-	-
Contributions	-	-
Government grants and subsidies	32,711,107	75,650
Movements in work in progress	(150,000)	-
Payments for property, plant and equipment	(68,901,768)	(4,876,339)
Net transfer (to) from cash investment	-	-
Payment for Rehabilitation Works	-	-
Net cash provided by investing activities	**(35,640,661)**	**(4,724,683)**
Cash Flow from Financing Activities :		
Proceeds from borrowings	-	-
Repayment of borrowings	-	-
Net cash provided by financing activities		**-**
Net Increase (Decrease) in Cash Held	(11,011,858)	(11,335,238)
Cash at beginning of reporting period	42,532,436	43,173,906
Cash at end of Reporting Period	**31,520,578**	**31,838,668**

BANANA SHIRE COUNCIL

Statement of Changes in Equity

For the period ended 31 July 2025

	Original Budget	YTD Actuals
	$	$
TOTAL EQUITY		
Balance at Beginning of Period	1,081,858,048	1,084,987,178
Asset revaluation direct to reserve		
Increase (Decrease) in Net Result	19,506,543	-6,302,943
Balance at End of Period	1,101,364,591	1,078,684,235
Accumulated Surplus		
Balance at Beginning of Period	1,843,779	13,869,031
Net Result	19,506,543	(6,302,943)
Other Capital Expenses	-	-
Capital payments funded from General Revenue	-	-
Transfer from Capital for unfunded depreciation	-	-
Transfer from Reserves	(62,123,860)	(3,366,864)
Transfers (to) from Capital and Reserves	18,470,632	(75,650)
Balance at End of Period	(22,302,906)	4,123,574
Capital		
Balance at Beginning of Period	233,079,385	231,040,135
Correction to opening balance	-	-
Transfers to Capital & Reserves	24,787,699	3,366,864
Transfers from Capital and Reserves	(18,470,632)	-
Transfers between Capital & Reserves	18,274,662	-
Balance at End of Period	257,671,114	234,406,999
Asset Revaluation Reserve		
Balance at Beginning of Period	830,381,160	831,383,001
Movement during period	-	-
Balance at End of Period	830,381,160	831,383,001
Other reserves		
Balance at Beginning of Period	16,553,725	8,695,011
Transfers to Capital and Reserves	37,336,161	
Transfers from Capital and Reserves	-	(75,650
Transfers between Capital and Reserves	(18,274,662)	-
Balance at End of Period	35,615,224	8,770,661

Banana Shire Council

Analysis of Cash Report

as at 31/07/2025

OPERATING BANK ACCOUNT			992,681
QTC TRANSFERS			
Investments			30,843,852
Cash on Hand			2,135
TOTAL CASH AVAILABLE			**$ 31,838,668**
Debtors Balance			1,843,976
	Current	1,584,239	
	30 Days	192,862	
	60 Days	2,447	
	90 Days	64,428	
	Less Doubtful Debts	-	**$ 1,843,976**
Creditors Balance			**$ 1,532,388**
Rates Balance			
		Total Arrears	**1,297,273**
		1st Levy	121,532
		2nd Levy (Current)	-
		Interest Charges	166,111
PREPAID RATES	1,600,308	**Rates Total**	**$ 1,584,915**

Trust Amounts Held	
NAB	537,669
Bendigo	450
	$ 538,119

BANANA SHIRE COUNCIL

Restricited Cash Report
For the period ended 31 July 2025

	$
Grants Received in Advance	
Local Roads & Community Infrastructure Program - 4	808,770
Flooding Event - 2021-2022	7,389,345
Flooding Event - 2023-2024	11,452,373
Works for Queensland - 2024-2027	1,064,686
Other Grants	3,781,507
	24,496,681
Provisions	
Waste Restoration	234,996
Reserves	
Constrained Grants Reserve	6,123,289
Developer Contributions	210,353
Constrained Public Contributions	2,035,322
	8,368,964
Unearned Revenue	
Waste Levy	524,208
Prepaid Rates	1,600,308
	2,124,516
Miscellaneous Payables	
State Fire	143,774
Other Payables	1,639
	145,413
Suspense	(364,486)
Total Restricted Cash	35,006,085

9.1.3 MAJOR CAPITAL PROJECTS – MONTHLY ACTUAL EXPENDITURE – CORPORATE & COMMUNITY SERVICES

Date: 18 August 2025
Author: Director Corporate & Community Services - Venkata Peteti
File No:
Letter No:
Attachment: Capital Expenditure Report
Minute No: OM006493

Resolution:

That Council note and receive the attached Major Capital Expenditure Report as at 31 July 2025.

Moved: Cr Bailey Seconded: Cr Leo Carried

Report

Providing a report on Council's Major Capital Expenditure as at 31 July 2025 for Corporate & Community Services.

Refer attachment.

BANANA SHIRE COUNCIL

Corporate & Community Services

Capital Expenditure Report For Year 2025/2026 as at 1/8/25

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Project Number	Project Area	Project Title/Job Cost Name	Authority WO#	External Funding Source	2024/25 Budget	YTD Expenditure	Committed	Total Expenditure	Estimated Final Budget	(Over)/Under Budget ($)	Over/ Under	% spent	% Spent	Job Progress	Information/ Explanation
	CORPORATE & COMMUNITY SERVICES									=24/25 Budget-Total Expenditure				%	
	23/24 Carry Forward NO Budget, Jobs over $5,000														
	Dunn St Workshop Redesign		7999			-	12,082.28	12,082.28		- 12,082.28			100.00%	**100%**	Commitment no longer needed
	22/23 NO Budget Jobs				$ -	-$ 54,775.45	$ 12,082.28	-$ 42,693.17	$ -	**42,693.17**	UNDER	#DIV/0!			
	Information & Communication Technology														
	Laptop & Desk Top replacement	ICT - Capital PC & Laptop Replacements	7340		100,000.00	-	-	-	100,000.00	100,000	UNDER		0.00%	5%	In progress
	Mobile and Tablet replacement	ICT - Capital Mobile Phone & Tablet Replacements	7338		50,000.00	-	-	-	50,000.00	50,000	UNDER		0.00%	5%	In progress
	Cyber Security and Other network enhancements	ICT - Cyber Security	7337		100,000.00	1,543.00	-	1,543.00	100,000.00	98,457	UNDER		1.54%	25%	In progress
	Security enhancements & CCTV, GPS installation	ICT - CCTV Security and GPS Implementation	7336			-	-	-		0	OVER		100.00%	10%	
													100.00%		
	Total ICT				**$ 250,000.00**	**$ 1,543.00**	**$ -**	**$ 1,543.00**	**$ 250,000.00**	**248,457**	**UNDER**	0.62%			
	Fleet & Workshop														
	Workshop tooling	Workshop Equipment	7585		25,000.00	-	-	-	25,000.00	25,000	UNDER		0.00%	5%	In progress
	Light Vehicle replacement (approx 10)	Light Vehicles (Trucks)	7589	Trade-in	640,000.00	132,572.03	38,909.35	171,481.38	640,000.00	468,519	UNDER		26.79%	10%	In progress
	Loader replacement, 5006-Waste Management			Trade-in	550,000.00			-	550,000.00	550,000	UNDER		0.00%	0%	In progress
	Hook Truck, 3701-Waste Management			Trade-in	440,000.00			-	440,000.00	440,000	UNDER		0.00%	0%	In progress
	Cardboard Compactor, Waste Management			Trade-in	350,000.00			-	350,000.00	350,000	UNDER		0.00%	0%	In progress
	Truck replacement, 3200-Taroom			Trade-in	160,000.00			-	160,000.00	160,000	UNDER		0.00%	0%	In progress
	Truck replacement, 3207-Taroom			Trade-in	160,000.00			-	160,000.00	160,000	UNDER		0.00%	0%	In progress
	Light truck replacement with Hilux, 3001-Retic Bilo			Trade-in	50,000.00			-	50,000.00	50,000	UNDER		0.00%	0%	In progress
	Light truck replacement with Hilux, 3003-Retic Bilo			Trade-in	50,000.00			-	50,000.00	50,000	UNDER		0.00%	0%	In progress
	Tractor replacement, 9307-Biloela P&G			Trade-in	120,000.00			-	120,000.00	120,000	UNDER		0.00%	0%	In progress
	Mower replacment, 1014-Biloela P&G			Trade-in	60,000.00			-	60,000.00	60,000	UNDER		0.00%	0%	In progress
	Mower replacment, 1015-Biloela P&G			Trade-in	60,000.00			-	60,000.00	60,000	UNDER		0.00%	0%	In progress
	Mower replacment, 1018-Biloela P&G			Trade-in	60,000.00			-	60,000.00	60,000	UNDER		0.00%	0%	In progress
	Grader replacement, TBA			Trade-in	560,000.00			-	560,000.00	560,000	UNDER		0.00%	0%	In progress
	Washdown pad				200,000.00			-	200,000.00	200,000	UNDER		0.00%	50%	In progress
	TOTAL FLEET & WORKSHOP				**$ 3,485,000.00**	**$ 132,572.03**	**$ 38,909.35**	**$ 171,481.38**	**$ 3,485,000.00**	**3,313,518.62**	**UNDER**	4.92%			
	Aerodromes														
24-AP-1	Programed lights replacement	Programmed replacement of lights based on servisiability inspections			40,000.00			-	40,000.00	40,000	UNDER		0.00%	0%	Based on inspection
24-AP-2	Moura Aerodrome Runway	Apply special seal to extend runway life	8742		450,000.00	-	-	-	450,000.00	450,000	UNDER		0.00%	70%	Resurfacing completed . Line Making planned in Oct
	TOTAL AERODROMES				**$ 490,000.00**	**$ -**	**$ -**	**$ -**	**$ 490,000.00**	**490,000.00**	**UNDER**	0.00%			
	CORPORATE & COMMUNITY SERVICES TOTAL				**$ 4,225,000.00**	**$ 79,339.58**	**$ 50,991.63**	**$ 130,331.21**	**$ 4,225,000.00**	**$ 4,094,668.79**	**UNDER**	3.08%			

9.1.4 MAJOR CAPITAL PROJECTS – MONTHLY ACTUAL EXPENDITURE – INFRASTRUCTURE SERVICES

Date: 18 August 2025
Author: Director Infrastructure Services – Patrick Moore
File No:
Letter No:
Attachment: Capital Expenditure Report
Minute No: OM006494

Resolution:

That Council note and receive the attached Major Capital Expenditure Report for Infrastructure Services as at 31 July 2025.

Moved: Cr Jensen Seconded: Cr Bailey Carried

Report

Providing a report on Council's Major Capital Expenditure as at 31 July 2025 for Infrastructure Services.

Refer attachment.

BANANA SHIRE COUNCIL
INFRASTRUCTURE SERVICES
Capital Expenditure Report For Year 2025/26 as at 1/8/25

Project Area	Project Title/Job Cost Name	Authority WO#	External Funding Source	2025/26 Budget	2024/25 Expenditure	YTD Expenditure	Committed	Total Expenditure	Estimated Final Budget	(Over)/Under Budget ($)	Over/ Under	% Spent	% Spent	Job Progress %	Information/ Explanation
INFRASTRUCTURE SERVICES															
CARRYOVER 24/25 - NO BUDGET - Jobs over $5,000															
Works Crews Site Offices 23/24		7804				-	15,886.38	15,886.38	15,886	- 15,886	OVER		100.00%	100%	Cost for fitting of awning on final van
Moura Boat Ramp Repairs 22/23		7062				-	45,997.20	45,997.20	-	- 45,997	OVER		100.00%	100%	Committed costs to be removed - Project completed in 24/25
Baileys Lane - RC		6987				518.82	7,560.00	8,078.82	519	- 8,079	OVER		100.00%	100%	Late submitted invoice for works completed in 24/25
Cracow Road Upgrade 23/24		7939				31,402.85	-	31,402.85	31,403	- 31,403	OVER		100.00%	100%	Late submitted invoice for works completed in 24/25 - Committ4ed costs adjusted to remove purchase order error
Teys Road Upgrade 23/24		7940				254.16	1,148.41	1,402.57	-	- 1,403	OVER		100.00%	0%	Double up of project listed below - INF4016
Orange Creek rd Rehab 23/24		7788				2,872.59	12,233.06	15,105.65	-	- 15,106	OVER		100.00%	100%	Costs to be moved on INF3948 (W10033)
Racecourse Lane Upgrade 23/24		7627				-	7,172.36	7,172.36	-	- 7,172	OVER		100.00%	100%	Committed costs to be removed - Project completed in 24/25
Baileys Lane CH1350 RCS 22/23		6988				254.16	-	254.16	254	- 254	OVER		100.00%	100%	Late submitted invoice for works completed in 24/25
Baileys Ln CH4700 RCS 22/23		6989				159.62	-	159.62	160	- 160	OVER		100.00%	100%	Late submitted invoice for works completed in 24/25
Barry Lane UC 23/24		7567				-	13,159.84	13,159.84	-	- 13,160	OVER		100.00%	100%	Committed costs to be removed - Project completed in 24/25
McLaughlins Road Floodway Reseal Rural Council Roads		9850				-	1,095.28	1,095.28	-	- 1,095	OVER		100.00%	0%	Committed costs to be removed - design costs
Gravel Resheeting Woolthorpe Road		9716				-	11,854.23	11,854.23	-	- 11,854	OVER		100.00%	100%	Committed costs to be removed - Project completed in 24/25
Gravel Resheeting of Hornet Bank Road		9674				-	17,700.00	17,700.00	-	- 17,700	OVER		100.00%	100%	Committed costs to be removed - Project completed in 24/25
Biloela Incubator Units		9013				150,754.18	34,874.82	185,629.00	-	- 185,629	OVER		100.00%		**Is included in DCS Budget**
STIP Prospect School Ck Bus Interchange parking area		8939				1,137.13	2,274.22	3,411.35	-	- 3,411	OVER		100.00%	0%	Double up of project listed below - INF3955
Pheasant Creek Road Drainage Rehab W4Q 24-27		8901	W4Q		5,978.99	-	-	5,978.99		- 5,979	OVER		100.00%		
Meissners Road Widening (Thangool Racecourse Rehab Works) W4Q 24-27		8900	W4Q		11,369.35	-	-	11,369.35		- 11,369	OVER		100.00%		
Kariboe Street Streetscaping 2024-25		8727				-	-	-		-	UNDER		100.00%		
Lookerbie Circle Road Gravel Resheeting 2024-25		8720				-	-	-		-	UNDER		100.00%		
Intersection Improvements - Defence Road / Scotts Road, Camboon		8654				-	-	-		-	UNDER		100.00%		
Don Street - Bridge Approaches		8652				-	-	-		-	UNDER		100.00%		
Kianga River Road Drainage		8651				-	-	-		-	UNDER		100.00%		
Injune Road Upgrade - Stage 1		8649				360,870.62	154,837.42	515,708.04	-	- 515,708	OVER		100.00%	30%	Double up of project listed below - INF3949
Defence Road Upgrade		8648				114,365.47	256,780.57	371,146.04	-	- 371,146	OVER		100.00%	30%	Flood damage betterment project - QRA funding - Not part of the Capital Budget
Cracow Road Reseal Rural Council Roads		9863				762.50	-	762.50	763	- 763	OVER		100.00%	100%	Cost for inspection of completed works
TOTAL CARRYOVER 24/25				**-**	**17,348.34**	**667,085.36**	**645,752.32**	**1,330,186.02**	**52,718**	**- 1,330,186**		**#DIV/0!**			
Rural Construction - Seals															
Injune Road Upgrade - Stage 2		8649	ROSI	4,855,000		360,870.62	154,837.42	515,708.04	4,855,000	4,339,292	UNDER		10.62%	30%	**Construction Commenced**
Orange Creek Road Rehab - Stage 2	Orange Creek Road - Stage 2	10033	TIDS/R2R	1,927,868		667.27	-	667.27	1,927,868	1,927,201	UNDER		0.03%	0%	
Rehab of Paines Road, Biloela - Stage 1	Paines Road Rehab - Stage 1	10032	TIDS/R2R	1,000,000		1,211.93	14,424.47	15,636.40	1,000,000	984,364	UNDER		1.56%	0%	
Shepherdsons Road Rehab Stage 2	Shepherdsons Road - REHAB CH1930-3770	10109		1,800,000		1,586.59	3,055.44	4,642.03	1,800,000	1,795,358	UNDER		0.26%	5%	**Construction Commenced**
Teys Road Realignment		7940		300,000		254.16	1,148.41	1,402.57	300,000	298,597	UNDER		0.47%	5%	**Construction Commenced**
Jambin Dakenba Road Rehab	Jambin Dakenba Road - Rehab CH16920-24770	10105		1,400,000		-	-	-	1,400,000	1,400,000	UNDER		0.00%	0%	
Kianga River Road Rehab		10030		150,000		761.53	-	761.53	150,000	149,238	UNDER		0.51%	0%	
RURAL CONSTRUCTION - SEALS TOTAL				**11,432,868**		**365,352.10**	**173,465.74**	**538,817.84**	**11,432,868**	**10,894,050**		**4.71%**			
Rural Construction - Gravel Pavement															
Gravel Resheeting - Council Roads	*Gravel Resheeting - 100mm - of Council Roads throughout the shire - Roads to be designated based on customer complaints received throughout the year*			500,000				-	500,000	500,000	UNDER		0.00%	0%	
Additional Gravel - Flood Damage				1,760,000				-	1,760,000	1,760,000	UNDER		0.00%	0%	
RURAL CONSTRUCTION - GRAVEL PAVEMENT TOTAL				**2,260,000**		**-**	**-**	**-**	**2,260,000**	**2,260,000**		**0.00%**			
Urban Construction															
Theodore Heavy Vehicle Bypass - Stage 2	Theodore Heavy Vehicle Bypass - Stage 2	8650	HVSPP	870,000		-	-	-	870,000	870,000	UNDER		0.00%	0%	
Dawson Court Road and Drainage Rehab - Biloela	Dawson Court - ROAD REALIGN, DRAINAGE IMPROVEMENT INC RESEAL	10108		350,000		-	-	-	350,000	350,000	UNDER		0.00%	0%	

Project Area	Project Title/Job Cost Name	Authority WO#	External Funding Source	2025/26 Budget	2024/25 Expenditure	YTD Expenditure	Committed	Total Expenditure	Estimated Final Budget	(Over)/Under Budget ($)	Over/ Under	% Spent	% Spent	Job Progress %	Information/ Explanation
INFRASTRUCTURE SERVICES															
Clarke Street Taroom Upgrade	Clarke Street Taroom - Reconstruct & Drainage Upgrade	10104		500,000		-	-	-	500,000	500,000	UNDER		0.00%	0%	
URBAN CONSTRUCTION TOTAL				**1,720,000**		**-**	**-**	**-**	**1,720,000**	**1,720,000**		**0.00%**			
Bridges															
Defence Road Bridge Rehab	Defence Road - Six Mile Bridge Repair	10103		100,000		-	-	-	100,000	100,000	UNDER		0.00%	0%	
BRIDGES TOTAL				**100,000**		**-**	**-**	**-**	**100,000**	**100,000**		**0.00%**			
Rural Drainage															
Drumburle Road Culvert Replacement	Drumburle Road Floodway 24/25	7568	SLRIP	1,300,000		-	-	-	1,300,000	1,300,000	UNDER		0.00%	0%	Awaiting outcome of funding application
Jambin Goovigen Floodway Repair	Jambin Goovigen Road Floodway Upgrade W4Q 24-27	8899	W4Q	271,032	28,968.20	326.08	-	29,294.28	271,032	241,738	UNDER		10.81%	0%	Design was completed in 24/25 - Tender for construction to be released by end of August with works to commence late October
RURAL DRAINAGE TOTAL				**1,571,032**	**28,968.20**	**326.08**	**-**	**29,294.28**	**1,571,032**	**1,541,738**		**1.86%**			
Urban Drainage															
Shire Stormwater Drainage repairs				50,000				-	50,000	50,000	UNDER		0.00%	0%	
Nobbs St Kerb and Channel Installation		7001		450,000				-	450,000	450,000	UNDER		0.00%	0%	
Brigalow Way Drainage Upgrade	Brigalow Way - Drainage Upgrade	10107		70,000		-	-	-	70,000	70,000	UNDER		0.00%	0%	
URBAN DRAINAGE TOTAL				**570,000**		**-**	**-**	**-**	**570,000**	**570,000**		**0.00%**			
Rural Reseals															
Reseal of Council Rural Roads				1,500,000				-	1,500,000	1,500,000	UNDER		0.00%	0%	Scope of project currently being finalised
RURAL RESEALS TOTAL				**1,500,000**		**-**	**-**	**-**	**1,500,000**	**1,500,000**		**0.00%**			
Urban Reseals															
Reseal of Council Urban Roads				250,000				-	250,000	250,000	UNDER		0.00%	0%	Scope of project currently being finalised
URBAN RESEALS TOTAL				**250,000**		**-**	**-**	**-**	**250,000**	**250,000**		**0.00%**			
Rural Road Safety & School Safety															
Shire Road Safety				50,000				-	50,000	50,000	UNDER		0.00%	0%	
Prospect Creek School Safety		8939	STIP	250,000		1,137.13	2,274.22	3,411.35	250,000	246,589	UNDER		1.36%	0%	
RURAL ROAD SAFETY & SCHOOL SAFETY TOTAL				**300,000**		**1,137.13**	**2,274.22**	**3,411.35**	**300,000**	**296,589**		**1.14%**			
Council Infrastructure															
Carparking - Main Administration Building Biloela	COUNCIL MAIN ADMIN CAR PARK - Seal Gravel Car Park	10106		250,000		187.38	-	187.38	250,000	249,813	UNDER		0.07%	0%	
Biloela Depot Stockpile	Biloela Depot Stockpile Pad	8407		100,000		-	31,024.37	31,024.37	100,000	68,976	UNDER		31.02%	30%	
COUNCIL INFRASTRUCTURE TOTAL				**350,000**		**187.38**	**31,024.37**	**31,211.75**	**350,000**	**318,788**		**8.92%**			
Parks & Open Spaces															
Biloela Splash Park	Biloela Splashpark 23/24	7805	RCIF	2,861,085		1,956.67	-	1,956.67	2,861,085	2,859,128	UNDER		0.07%	0%	Tender Closed - Currently being assessed
Shire - Renewal and Replacement of playground equipment in parks				250,000				-	250,000	250,000	UNDER		0.00%	0%	
Megavalis Netball Courts	Megavalis Netball Courts		PlayYour Way	2,181,800				-	2,181,800	2,181,800	UNDER		0.00%	0%	Tender currently open
PARKS & OPEN SPACES TOTAL				**5,292,885**		**1,956.67**	**-**	**1,956.67**	**5,292,885**	**5,290,928**		**0.04%**			
Community Infrastructure & Special Projects															
Community Streetscaping				50,000				-	50,000	50,000	UNDER		0.00%	0%	
Shire Wide Electrical Repairs				50,000				-	50,000	50,000	UNDER		0.00%	0%	
COMMUNITY INFRASTRUCTURE & SPECIAL PROJECTS TOTAL				**100,000**		-	-	-	**100,000**	**100,000**	**UNDER**	**0.00%**			
TOTAL INFRASTRUCTURE SERVICES				**25,446,785**		**1,036,045**	**852,517**	**1,934,878**	**25,499,503**	**23,511,907**	**UNDER**	**7.60%**			

9.1.5 MAJOR CAPITAL PROJECTS – MONTHLY ACTUAL EXPENDITURE – COUNCIL SERVICES

Date: 18 July 2025
Author: Director Council Services - Chris Welch
File No:
Letter No:
Attachment: Capital Expenditure Report
Minute No: OM006495

Resolution:

That Council note and receive the attached Major Capital Expenditure Report for Council Services as at 31 July 2025.

Moved: Cr Burling Seconded: Cr Leo Carried

Report

Providing a report on Council's Major Capital Expenditure as at 31 July 2025 for Council Services.

Refer attachment.

Cr Bailey requested an update on the peer review conducted on the Biloela Civic Centre Air Conditioning project. Director Council Services provided an update on the peer review and the progress of the project.

BANANA SHIRE COUNCIL

COUNCIL SERVICES

Capital Expenditure Report For Year 2025/26 as at 1/8/25

Project Area	Project Title/Job Cost Name	Authority WO#	External Funding Source	2025/26 Budget	2024/25 Expenditure	YTD Expenditure	Committed	Total Expenditure	Estimated Final Budget	(Over)/Under Budget ($)	Over/ Under	% Spent	% Spent	Job Progress %	Information/ Explanation
COUNCIL SERVICES															
24/25 Carry Forward NO Budget, Jobs over $5,000															
Biloela Swimming Pool - 50m Pool Shell		9786				7,150.00	19,510.00	26,660.00		- 26,660.00	OVER		100.00%		
Taroom WTS Entrance Road		8721				2,697.50	- 5,850.27	- 3,152.77		3,152.77	UNDER		100.00%		Project not proceeding. DTMR design requirmeents delayed project and works approval has now lapsed.
Taroom Aero Emergency Shelter Roof		7663				520.00	12,640.00	13,160.00		- 13,160.00	OVER		100.00%		
Moura Library/Museum New Bldg		7070				29,240.68	775,665.80	804,906.48		- 804,906.48	OVER		100.00%		Capitalisation form submitted 24/25. Commitment only needed for renetion funds
Moura Recreation Grounds Security Upgrades - W4Q 24-27		8914	W4Q		88.20	-	25,960.79	26,048.99		- 26,048.99	OVER		100.00%		
Theodore Recreation Grounds Lighting Upgrade - W4Q 24-27		8913	W4Q		34,033.28	-	3,413.75	37,447.03		- 37,447.03	OVER		100.00%		
Rainbow St Sports Grounds - Renovate Clubhouse		8011				3,018.61	4,429.79	7,448.40		- 7,448.40	OVER		100.00%		Capitalisation form submitted 24/25
Taroom Public PWD Toilet, Yaldwyn St - W4Q 24-27		7083	W4Q		27,512.23	4,231.82	61,359.00	93,103.05		- 93,103.05	OVER		100.00%		
Taroom Showgrounds - Phipps St Side Toilet Block		7082				4,850.00	2,698.06	7,548.06		- 7,548.06	OVER		100.00%		
Biloela Swimming Pool - Unisex Disabled Change Room - W4Q 24-27		8911	W4Q		46,877.21	300.00	2,964.27	50,141.48		- 50,141.48	OVER		100.00%		
Biloela STP Membrane Repl		8032				-	14,155.00	14,155.00		- 14,155.00	OVER		100.00%		
Taroom STP Upgrade		7331				680.00	50,866.99	51,546.99		- 51,546.99	OVER		100.00%		
Biloela Sewerage SPS12 Access		8802				-	537.80	537.80		- 537.80	OVER		100.00%		
2425 SPS Lid Renewals		8736				-	2,672.98	2,672.98		- 2,672.98	OVER		100.00%		
Baralaba WTP Supernatant Return		9639				13,785.30	-	13,785.30		- 13,785.30	OVER		100.00%		
Bilo Water Quality Monitoring		7908				3,910.00	738,657.78	742,567.78		- 742,567.78	OVER		100.00%		Capitalisation form submitted 24/25
Jules Street Water Main Prelim		7977				1,173.00	1,206.91	2,379.91		- 2,379.91	OVER		100.00%		completed
Dawson Hwy Water Mains Crossing Liner Install - Kroombit St		8814				1,102.18	1,165.00	2,267.18		- 2,267.18	OVER		100.00%		Capitalisation form submitted 24/25
Misfield St Water Main Prelims		7978				1,173.00	3,989.95	5,162.95		- 5,162.95	OVER		100.00%		completed 24/25
Moura WTP Filtered Water Flow Meter		7680				16,275.07	9,557.75	25,832.82		- 25,832.82	OVER		100.00%		
								-		-	UNDER		100.00%		
24/25 NO Budget Jobs TOTAL				**0.00**	**108,510.92**	**90,107.16**	**1,946,278.74**	**2,144,896.82**	**0.00**	**- 2,144,896.82**	**OVER**				
BUILT ENVIRONMENT/LAND & LEASE															
Replacement of Condemned Private owne	Property Pole Replacements	8018		200,000.00		-	-	-	200,000.00	200,000.00	UNDER		100.00%	15.00%	Currently in procurement stage
Biloela Civic Centre New Air Cooling System continuation of previous year project	Biloela Civic Centre Airconditioning - W4Q 24-27	8912	W4Q	450,000.00	88.98	-	5,000.00	5,088.98	450,000.00	444,911.02	UNDER		5.00%	5.00%	Problems with power supply and Insurance claim on roof
Rainbow Street continuation of previous year project	Transformer power upgrades			500,000.00				-	500,000.00				100.00%	100.00%	Waiting on DOR and Ergon to resolve land tenure issues prior to installation of transformer.
Biloela Civic Centre - replace foyer ceiling				60,000.00				-	60,000.00	60,000.00	UNDER		0.00%	2.00%	Getting costings on materials
Baralaba Sports Grease trap replacement				10,000.00				-	10,000.00	10,000.00	UNDER		5.00%	5.00%	Plumbing is currently designing system
Employee house - Taroom Showground Cottage				15,000.00				-	15,000.00	15,000.00	UNDER		0.00%	0.00%	Building Sevices to take photos and measurements Tuesday 12th August
Biloela Transit Facility Block C				40,000.00				-	40,000.00	40,000.00	UNDER		0.00%	5.00%	Vendor Panel to be posted on Tuesday 12th August
Magavalis Recreation Reserve - Biloela - Erosion on Fields				15,000.00				-	15,000.00	15,000.00	UNDER		0.00%	0.00%	Works will progress throughout the year as materials become available from asphalt left over from other jobs
Kianga Memorial Hall - windows				5,000.00				-	5,000.00	5,000.00	UNDER		0.00%	5.00%	Currently out to Vendor Panel
Taroom Town Hall, repaint foyer, toilet & storage area				25,000.00				-	25,000.00	25,000.00	UNDER		0.00%	0.00%	Damage to windows occurred recently. Windows need to be fixed before the tinting can occur
Theodore RSL Hall -toilets				45,000.00				-	45,000.00	45,000.00	UNDER		0.00%	2.00%	In design stage
Tollemaches Rd House - Thangool				45,000.00				-	45,000.00	45,000.00	UNDER		0.00%	0.00%	not started
Duplex Transit - Biloela	flooring			25,000.00				-	25,000.00	25,000.00	UNDER		0.00%	0.00%	Procurement to occur in January 2026
Tognolini-Baldwin House	carpets			25,000.00				-	25,000.00	25,000.00	UNDER		0.00%	0.00%	commences in March 2026
Transit House 4 Bridge St	flooring			35,000.00				-	35,000.00	35,000.00	UNDER		0.00%	0.00%	Procurement to start in March 2026
Power pole inspection & treatment	....'Rainbow St Sports Grounds - N	8012		160,000.00		-	87,586.00	87,586.00	160,000.00	72,414.00	UNDER		54.74%		
BUILT ENVIRONMENT/LAND LEASE TOTAL				**$ 1,655,000.00**		**$ -**	**$ 92,586.00**	**$ 92,674.98**	**$ 1,655,000.00**	**-**	**UNDER**	**5.60%**			
Waste Services															
Boundary Hill East new waste facility	Boundary Hill Waste Facility	7086		3,923,600		9,429.00	271,480.74	280,909.74	3,923,600	3,642,690.26	UNDER		7.16%	10.00%	Detailed design contract awarded to SMEC & preliminaries underway. Sale contract being negotiated with landholder. Community consultation commencing 14/08/25
Trap Gully extension				-				-	-	-	OVER		0.00%		
WASTE SERVICES TOTAL				**$ 3,923,600.00**		**$ 9,429.00**	**$ 271,480.74**	**$ 280,909.74**	**$ 3,923,600.00**	**-**	**UNDER**	**7.16%**			
Rural Services															
Theodore washbay payment system	Washdown Facility Payment Systems	7061		20,000.00		-	-	-	20,000.00	20,000.00	UNDER		0.00%		
Taroom yards loading ramp				150,000.00				-	150,000.00	150,000.00	UNDER		0.00%		
RURAL SERVICES TOTAL				**$ 170,000.00**		**$ -**	**$ -**	**$ -**	**$ 170,000.00**	**$ 170,000.00**	**UNDER**	**0.00%**			
SWIMMING POOLS															
Biloela Pool Plantroom NewSwitchboard	Biloela Swimming Pool Plantroom New Switchboard	8701		60,000.00		-	-	-	60,000.00	60,000.00	UNDER		0.00%		Design stage to commence in January 2026
Biloela Swimming Pool - seamless flooring in squad room				15,000.00				-	15,000.00	15,000.00	UNDER		0.00%		Procurement to commence in September 2025
Moura Swimming Pool - switchboard replacement				100,000.00				-	100,000.00	100,000.00	UNDER		0.00%		Design stage to start in January 2026
Taroom Swimming Pool - switchboard				40,000.00				-	40,000.00	40,000.00	UNDER		0.00%		Design stage to start in February 2026
Biloela Pool - Develop a 50-year redevelopment plan				60,000.00				-	60,000.00	60,000.00	UNDER		0.00%		Works on this will commence in October 2025, depending on what happens with the 50m pool following investigation of the pool shell
SWIMMING POOLS TOTAL				**$ 275,000.00**		**$ -**	**$ -**	**$ -**	**$ 275,000.00**	**275,000.00**	**UNDER**	**0.00%**			
CEMETERIES															
Theodore Cemetery - shade shelter and seat				10,000.00				-	10,000.00	10,000.00	UNDER		0.00%		Procurement to commence in February 2026
Biloela Lawn Cemetery - new concrete beams				25,000.00				-	25,000.00	25,000.00	UNDER		0.00%		Procurement to commence in September 2025
Moura cemetery - New concrete beams & Landscaping				30,000.00				-	30,000.00	30,000.00	UNDER		0.00%		Procurement to commence in January 2026
CEMETERIES TOTAL				**$ 65,000.00**		**$ -**	**$ -**	**$ -**	**$ 65,000.00**	**$ 65,000.00**	**UNDER**	**0.00%**			
Water Supply															
Treatment - Baralaba	WTP Chemical Storage Shed			55,000.00				-	55,000.00						
Treatment Biloela	Biloela Water Unplanned Work			-		-	-	-	-	-	OVER		0.00%		
									-						

BANANA SHIRE COUNCIL

COUNCIL SERVICES

Capital Expenditure Report For Year 2025/26 as at 1/8/25

Project Area	Project Title/Job Cost Name	Authority WO#	External Funding Source	2025/26 Budget	2024/25 Expenditure	YTD Expenditure	Committed	Total Expenditure	Estimated Final Budget	(Over)/Under Budget ($)	Over/ Under	% Spent	% Spent	Job Progress %	Information/ Explanation
COUNCIL SERVICES															
Treatment - Biloela	Biloela WTP Water Quality Monitoring Instrumentation Install			150,000.00				-	150,000.00	150,000.00	UNDER		0.00%		
Treatment Callide Dam	Banana Water Unplanned Work			-				-	-	-	OVER		0.00%		
Mains - Callide	Pigging Stations Construction Callide Raw WM	7679		150,000.00		1,600.00	129,533.45	131,133.45	150,000.00	18,866.55	UNDER		87.42%	95.00%	Commisioning completed in July. Minor Works & as-builts to be finalised.
Treatment Cracow	Cracow Water Unplanned Work			-				-		-	OVER		0.00%		
Treatment Goovigen	Goovigen Water Unplanned Work			-				-		-	OVER		0.00%		
Treatment Moura	Moura Water Unplanned Work			-		-	-	-	-	-	OVER		0.00%		
									-						
Treatment - Moura	Moura WTP Clarifier final commissioning	7287		20,000.00		-	129,361.94	129,361.94	20,000.00	- 109,361.94	OVER		646.81%	20.00%	
Treatment - Moura	Instrumentation Upgrade (Water Quality)	7909		700,000.00		-	16,056.81	16,056.81	700,000.00	683,943.19	UNDER		2.29%		
Treatment - Moura	Moura Filter 3 & 4 Backwash Automation			25,000.00				-	25,000.00	25,000.00	UNDER		0.00%		
Treatment - Moura	Security Fence to exclude lagoon access WHS			80,000.00				-	80,000.00						
Treatment - Moura	Spare Pontoon Pump			50,000.00				-	50,000.00	50,000.00	UNDER		0.00%	10.00%	
Treatment Taroom	Taroom Water Unplanned Work			-		-	-	-	-	-	OVER		0.00%		
									-		OVER				
Treatment - Taroom	Replace Bore 1 Headworks	7266		75,000.00		-	-	-	75,000.00	75,000.00	UNDER		0.00%	10.00%	Preparing RFQ / Liaising with Contractors
Treatment Thangool	Thangool Water Unplanned Work			-				-	-	-	OVER		0.00%		
Treatment Theodore	Theodore Water Unplanned Work			-				-	-	-	OVER		0.00%		
Treatment - Theodore	Theodore WTP Critical Infrastructure	8819		150,000.00		-	19,775.45	19,775.45	150,000.00	130,224.55	UNDER		13.18%		Prefered Tenderer for New Switchboard & Assoc works has gone into Administration / Liquidation - will now include as part of main WTP upgrade tender.
Treatment - Theodore	Theodore WTP Upgrade - Yr. 1 - Stage 1			1,875,000.00				-	1,875,000.00	1,875,000.00	UNDER		0.00%		Finalising tender specs - aim to have to prucurement mid-Aug
Treatment Wowan	Wowan Water Unplanned Work			-				-	-	-	OVER		0.00%		
Treatment - Water Various	Chlorine Rectification Works			50,000.00				-	50,000.00	50,000.00	UNDER		0.00%		
Meters/Valve/Hydrant Replacements	Faulty Valve/hydrant/meters, new connections, upgrades/replacement			480,000.00		*6,743.67*	*521.83*	*7,265.50*	480,000.00	472,734.50	UNDER		1.51%		
Banana										-					
Valves 2025/26		7220				-	-		-	-				10.00%	investigation work underway and prep work to start 1/9/25 capital crew and contractors
Hydrants 2025/26		7221				-	-		-	-					
Meters 2025/26		7222				494.88	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Baralaba										-					
Valves 2025/26		7224				-	-		-	-					
Hydrants 2025/26		7654				-	-		-	-					
Meters 2025/26		7225				-	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Biloela										-					
Valves 2025/26		7229				-	-		-	-				10.00%	investigation work underway and prep work to start 1/9/25 capital crew and contractors
Hydrants 2025/26		7230				3,151.47	-		-	-					
Meters 2025/26		7231				2,073.66	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Callide Dam										-					
Valves 2025/26		7660				-	-		-	-					
Hydrants 2025/26		7655				-	-		-	-					
Meters 2025/26		7240				-	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Cracow										-					
Valves 2025/26		7241				-	-		-	-					
Hydrants 2025/26		7656				-	-		-	-					
Meters 2025/26		7242				-	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Goovigen										-					
Valves 2025/26		7661				-	-		-	-					
Hydrants 2025/26		7657				-	-		-	-					
Meters 2025/26		7243				-	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Moura										-					
Valves 2025/26		7245				358.66	-		-	-				10.00%	investigation work underway and prep work to start 1/9/25 capital crew and contractors
Hydrants 2025/26		7246				-	-		-	-					
Meters 2025/26		7247				665.00	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Taroom										-					
Valves 2025/26		7248				-	-		-	-				10.00%	investigation work underway and prep work to start 1/9/25 capital crew and contractors
Hydrants 2025/26		7249				-	-		-	-					
Meters 2025/26		7250				-	521.83		-	-					zero reads from meter reading taking place 1/9/25
										-					
Thangool										-					
Valves 2025/26		7254				-	-		-	-					
Hydrants 2025/26		7658				-	-		-	-					
Meters 2025/26		7255				-	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Theodore										-					
Valves 2025/26		7257				-	-		-	-				10.00%	investigation work underway and prep work to start 1/9/25 capital crew and contractors
Hydrants 2025/26		7258				-	-		-	-					
Meters 2025/26		7259				-	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
Wowan										-					
Valves 2025/26		7260				-	-		-	-					
Hydrants 2025/26		7659				-	-		-	-					
Meters 2025/26		7261				-	-		-	-					zero reads from meter reading taking place 1/9/25
										-					
TOTAL WATER SUPPLY										-					
				$ 3,860,000.00		**$ 8,343.67**	**$ 295,249.48**	**$ 303,593.15**	**$ 3,860,000.00**	3,556,406.85	**UNDER**	**7.87%**			

BANANA SHIRE COUNCIL

COUNCIL SERVICES

Capital Expenditure Report For Year 2025/26 as at 1/8/25

Project Area	Project Title/Job Cost Name	Authority WO#	External Funding Source	2025/26 Budget	2024/25 Expenditure	YTD Expenditure	Committed	Total Expenditure	Estimated Final Budget	(Over)/Under Budget ($)	Over/ Under	% Spent	% Spent	Job Progress %	Information/ Explanation
COUNCIL SERVICES															
Sewerage															
Manholes & Jumpup - General All Schemes	Manholes & Jumpup - General All Schemes			-		*64.64*	*77,651.72*	*77,716.36*	-	-	OVER		0.00%		
	Biloela Manholes 2025/26	7311				-	45,454.55								no budget this year - will be unplanned work to take place over the twelve month period in all schemes
	Biloela House Connections 2025/26	7312				-	1,997.94								no budget this year - will be unplanned work to take place over the twelve month period in all schemes
	Moura Manholes 2025/26	7317				64.64	-								no budget this year - will be unplanned work to take place over the twelve month period in all schemes
	Moura House Connections 2025/26	7318				-	-								no budget this year - will be unplanned work to take place over the twelve month period in all schemes
	Taroom Manholes 2025/26	7321				-	26,728.08								no budget this year - will be unplanned work to take place over the twelve month period in all schemes
	Taroom House Connections 2025/26	7322				-	3,471.15								no budget this year - will be unplanned work to take place over the twelve month period in all schemes
	Theodore Manholes 2025/26	7325				-	-								no budget this year - will be unplanned work to take place over the twelve month period in all schemes
	Theodore House Connections 2025/26	7326				-	-								no budget this year - will be unplanned work to take place over the twelve month period in all schemes
Sewer Main - General All Schemes	*Gravity Main Relining*			-		-	*184,683.68*	*184,683.68*	-	-	OVER		0.00%		
	Biloela	7313				-	184,683.68								no budget this year
	Moura	7319				-	-								no budget this year
	Taroom	7323				-	-								no budget this year
SCADA/Telemetry-General All Schemes	Critical Spares	7294		-		10,203.02	-	10,203.02	-	-	OVER		0.00%		
General All Schemes	Smoke Testing Rectification Works			100,000.00				-	100,000.00	-	UNDER		0.00%	5%	will be starting in moura - we will also be looking at the school area in Biloela and apollo motel school holiday time
General All Schemes	CCTV			300,000.00				-	300,000.00	-	UNDER		0.00%	10%	Waiting for contractor to retun to site after resolving WHS procedures. Will finalise Dee St SPS catchment & work in Barrett St area
Pump Stations	SPS Renewals			50,000.00				-	50,000.00	-	UNDER		0.00%		
Pump Stations	SPS Pedestal Replacements			175,000.00				-	175,000.00	-	UNDER		0.00%		
Treatment Biloela	*Biloela Sewer - Unplanned works*			-		-	-	-		-	OVER		0.00%		
Treatment - Biloela	STP Concrete Repairs (potential carryover 24/25)	7328		350,000.00				-	350,000.00	-	UNDER		0.00%		Continuing contract works from 24/25 - contractor on-track. Refurbishment of Trickling Filter 2 nearing completion.
Treatment - Biloela	STP Concrete Repairs (Potential Variation Trickling Filter 2 wall replacement)			500,000.00				-	500,000.00	-	UNDER		0.00%		Work is scheduled to commence on BTF1 on 13/8 (once BTF2 refurbishment is complete & back online).
SPS1 - Biloela - Pump Upgrade	Upgrade pumps to reduce overflows			30,000.00				-	30,000.00	-	UNDER		0.00%	10%	Considering pump selection.
SPS5 - Biloela - Pump Capacity Change	Reduce pump capacity			7,500.00				-	7,500.00	-	UNDER		0.00%	10%	Considering pump selection
Treatment Moura	*Moura Sewer - Unplanned works*			-		-	-	-	-	-	OVER		0.00%		
									-						
Treatment - Moura	Completion Building Structural Repairs (potential carryover 24/25)	8822		60,000.00		-	17,050.00	17,050.00	60,000.00	-	UNDER		28.42%		Draft detailed design received & comments sent back to consultant.
Moura STP Building Structural inspection/design/report		9726				-	-	-							
Treatment - Moura	Moura STP Instrumentation (DO/pH/Turbidity)			40,000.00				-	40,000.00						
Treatment Taroom	*Taroom Sewer- Unplanned works*			-		-	-	-	-	-	OVER		0.00%		
Treatment - Taroom	Completion Concrete Works (potential carryover 24/25)			375,000.00				-	375,000.00		UNDER		0.00%		Preparing tender docs for re-tendering remaining works.
Treatment Theodore	*Theodore Sewer - Unplanned works*			-		-	-	-	-	-	OVER		0.00%		
TOTAL SEWERAGE				**$ 1,987,500.00**		**$ 10,267.66**	**$ 279,385.40**	**$ 289,653.06**	**$ 1,987,500.00**	**1,697,846.94**	**UNDER**	**14.57%**			
TOTAL COUNCIL SERVICES				**$ 11,936,100.00**		**$ 118,147.49**	**$ 2,884,980.36**	**$ 3,111,727.75**	**$ 11,936,100.00**	**8,824,372.25**	**UNDER**	**26.07%**			

9.1.6 FUNDING PROJECTS – MONTHLY ACTUAL EXPENDITURE

Date: 18 August 2025
Author: Chief Executive Officer – Thomas Upton
File No:
Letter No:
Attachment: Capital Expenditure Report Funding Projects
Minute No: OM006496

Resolution:

That Council note and receive the attached Major Capital Expenditure Report for funding projects as at 31 July 2025.

Moved: Cr Jensen Seconded: Cr Burling Carried

Report

Providing a report on Major Capital Expenditure for funding projects as at 31 July 2025.

Refer attachment.

BANANA SHIRE COUNCIL

Executive Services

Capital Expenditure Report For Year 2025-2026 as at 1/8/2025

Work Area / Project	Altitude WO #	Total Funding	2025/26 Budget	2024/25 Expenditure	YTD Expenditure	Committed	Total Expenditure	Estimated Final Budget	(Over)/Under Budget ($) =25/26 Budget-Total Expenditure	Over/ Under	% spent	% Spent	Job Progress %	Information/ Explanation
Contingency	8790		4,500,000		-	-	-							
Wowan SES - New Facility	8655				-	11,379.56							80%	Building in place with disabled ramp. PO for concrete path issued. Waiting on delivery of kitchen. Install of A/c delayed as selected contractor business has closed.
W4Q 2024-27					-	-								
Biloela Civic Centre Airconditioning	8912	450,000	450,000	89	-	5,000.00	5,000.00	450,000	445,000	UNDER		1.11%	20%	Waiting on insurance decision on roof prior to finalising mounting and electricsal connections
Biloela Pool Unisex Disabled Change Room	8911	100,000	-	46,877	300.00	2,964.27	3,264.27		- 3,264				85%	Building on footings, waiting electrical and plumbing. Counci lplumbers instructed to do the plumbing work and Vendor Panel for electricals being issued.
Theodore Recreation Grounds Lighting Upgrade	8913	500,000	-	34,033	-	3,413.75	37,447.03		- 37,447				20%	Site visit was undertaken and met with some of the users to determine their requirements. PO has been raised for electrical engineer. Currently waiting for design from the electrical engineer, to complete these designs he is hoping to attend site in the next fortnight to confirm details.
Moura Recreation Grounds Security Upgrades	8914	300,000	-	88	-	25,960.79	26,048.99		- 26,049				75%	The final lighting plan has been approved by all parties involved and PO has been raised, works to be completed in the next 6 weeks. Community consultation commenced to use additional funds. Consulting with IT regarding the installation of cameras, awaiting quote, hopefully received in the next 2 weeks. In the process of producing VP for canteen upgrades
Baralaba Showgrounds Septic System Upgrade	8678	100,000	-	99,671	-	-	99,670.73	99,671	- 99,671				100%	Project Completed
Taroom Main Street Public Amenities	7083	150,000	-	27,512	4,231.82	61,359.00	93,103.05		- 93,103				75%	Construction initially delayed with contractor health issues but underway now with main footings and flooring being done week starting 11 August. Council plumbers have been re-engaged to assist with connection.
Jambin Goovigen Road Floodway Upgrade	8899	300,000	271,032	28,968	326.08	2,272.73	31,567.01	271,032	239,465	UNDER		11.65%	0%	Design was completed in 24/25 - Tender for construction to be released by end of August with works to commence late October
Meissners Road Widening (Thangool Racecourse Rehab Works)	8900	300,000	-	11,369	-	-	11,369.35		- 11,369				0%	Project funding signage has been installed. The design of the road widening has commenced, with construction scheduled for 2026/27 budget. The current funding allocation appears to be appropriate for the current project proposal. A project variation may need to be submitted to clarify that the original 8m width refered to the width at the two right-turn lanes and not the entirety of the project.
Drainage Rehab on Pheasant Creek Road	8901	130,000	-	5,979	-	-	5,978.99		- 5,979				0%	Project funding signage has been installed. The design has commenced, with construction scheduled for 2026/27 budget. The current funding allocation appears to be appropriate for the current project proposal.
							-		-			100.00%		
							-		-			100.00%		
EXECUTIVE SERVICES TOTAL		**$ 2,330,000**	**$ 5,221,032**	**$ 254,587**	**$ 4,857.90**	**$ 112,350.10**	**$ 371,795.17**	**$ 820,703**	**$ 4,849,237**	UNDER	**7.12%**			
NOTE - these jobs are also listed on each departments Capital Report														

10.1.1 ACTION REPORT ON PREVIOUS COUNCIL RESOLUTIONS – CORPORATE & COMMUNITY SERVICES

Date: 18 August 2025
Author: Director Corporate & Community Services – Venkat Peteti
File No:
Letter No:
Attachment: Resolutions Action Report
Minute No: OM006497

Resolution:

That Council note and receive the attached Resolutions Action Report for Corporate & Community Services.

Moved: Cr Bailey Seconded: Cr Boyce Carried

Report

This report is to advise Council of the outstanding matters currently being dealt with by the organisation.

Considerations

1. **Corporate Plan**
   N/A

2. **Policy and Legal Implications**
   Policy and legal implications will be addressed through each matter.

3. **Financial and Resource Implications**
   Budget impacts will be addressed in resolving each matter.

4. **Risk Assessment**
   N/A

Council Resolutions Action Report
Corporate & Community Services

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
25/09/24	Page 13	**Cr Burling** requested to table a correspondence received from the Callide Valley Agricultural and Pastoral Society Inc. requesting that Council review their Community Grants Sponsorship program and consider allowing one application to carry over a three-year period instead of the current one-year requirement. A discussion followed. Council agreed to review the Community Grants Sponsorship program conditions, policies and procedures. Director Corporate and Community Services to prepare a report to a Councillor Workshop in early 2025 for consideration and further discussion.	Scheduled for early 2025. Report submitted to February's EMT meeting. 4/3/25 – Community Assistance Framework is in development – will be implemented in the new financial year with EMT and Council approval. 19/5/25 – In progress, will be tabled in the July Ordinary Council meeting.	CLOSED
20/11/24	Page 22	**Cr Leo** advised the watering, mowing and maintenance of the old Library and Council Office in Moura is not being undertaken. The Chief Executive Officer requested the Director Corporate & Community Services investigate and provide a report on the potential use of the buildings to the 22 January 2025 Ordinary Meeting.	DCCS engaged with the Youth Committee and will provide further updates to Council. 17/3/25 – Currently a survey is underway with schools. Community meeting planned post the survey. 13/6/25 – Met with the Moura Youth Committee, organised to have a community meeting after the school holidays.	OPEN
22/01/25	OM006267	The Council resolves to: 1. Provide an exemption from going to tender or auction to lease the space for fuel tanks and fuel tank-related equipment at Thangool and Theodore Aerodromes under section 236 (1) (vii) of the Local Government Regulation 2012; and	In progress. 19/05/25 – Meeting was held with IOR on 12 May. Preliminary discussion to establish a lease arrangement. Awaiting proposal from IOR. 30/07/25 – IOR conducted a site visit mid-July to formulate a plan and to determine what equipment is required. Awaiting proposal.	OPEN

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
		2. Authorise the Chief Executive Officer to enter into a lease agreement with the Aviation fuel provider IOR to operate from Thangool and Theodore Aerodromes subject to compliance with the requirements of 236 (1) (vii) (A),236 (1) (vii) (A) & 236 (3), of the Local Government Regulation 2012.		
25/06/25	Page 63	**Cr Leo** requested that a community consultation be arranged regarding the use of the Moura Library space to provide youth programs for the community. Director Corporate and Community Services advised that Council would investigate options to tender for an expression of interest.	11/7/25 – The old library building has damages that are going through the insurance process, as soon as the repairs are completed, the building will be advertised.	OPEN
23/07/25	OM006465	That Council resolve to: 1.Delegate authority to the CEO to write-off any rates determined to be uncollectable or not cost effective to recover due to the incorrect discount applied in the first-rate levy in August of 2024; and 2. Endorse the additional concessions to be applied to the following sports clubs and associations pursuant to the Local Government Regulations 2012 s120 (1) (b) (i), s121 (a) and s122 (1) (a) & (b) Assessment Ratepayer Additional Concession 12003604 Taroom Golf Club $27.96 13016894 St Vincent De Paul $457.84 13020540 Baralaba Bowls Club $615.24 13034020 Theodore Community Link $233.20 13036736 Theodore Bowls Club $2,275.90 13037940 Callide Valley District Darts $157.34		CLOSED

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
23/07/25	OM006466	That Council: 1. Endorses the following nominations for Representatives on the CRC Advisory Committee: - Tina Knight as Education Representative – Catholic Sector for the next 2-year tenure. - Rebecca Wall as Education Representative – Independent Sector for the next 2-year tenure. - Fiona Bryne as Education Representative – State Sector for the next 2-year tenure; and 2. Receives and notes the Unconfirmed Minutes of the Community Resource Centre Advisory Committee held on the 19 June 2025.	Relevant people notified by email and unconfirmed minutes from meeting placed on BSC website	CLOSED
23/07/25	OM006467	That Council adopts the Community Grants Policy attached to this report.		CLOSED
23/07/25	OM006468	That Council resolve to: 1. Approve a funding allocation up to $17,500 in 2025-26 year to the Baralaba State School Parents and Citizens Association towards the trial of opening the Baralaba State School Swimming Pool for community use; and 2. Delegate authority to the Chief Executive Officer to release the funds subject to the due diligence of the trial including an agreement to operate the pool with the Department of Education and the Baralaba State School Parents and Citizens Association.		CLOSED

10.1.2 WATER CONSUMPTION CHARGES CONCESSION – BILOELA SPORTS CLUBS & ASSOCIATIONS

Date: 30 July 2025
Author: Coordinator Rates – Melanie Plisch
File ID:
Letter ID:
Attachment:
Minute No: OM006498

Resolution:

That pursuant to the Local Government Regulation 2012 s120 (1) (b) (i), s121 (a) and s122 (1) (a) & (b) Council grant concessions of 75% of water consumption charges up to a maximum of $11,000.00 per annum for consumption charges to be levied in the 2025/2026 financial year, to the following sports clubs and associations:

a) Biloela Panthers Rugby League Club (Assessment 13218425)
b) Callide Valley Touch Football Association (Assessment 13066097)
c) Callide Valley Tennis Association (Assessment 13066022)
d) Biloela Valleys Football Club (Assessment 13218433)
e) Biloela Junior Rugby League (Assessment 13066071)
f) Magavalis Sports Club (Assessment 13216692)
g) Callide Valley Agricultural & Pastoral Society (Assessment 13035159)

Moved: Cr Burling Seconded: Cr Leo Carried

Report

Council acknowledged that the ongoing viability of these community sporting associations is important to the Biloela community and for many of these ratepayers' water consumption charges represent a significant proportion of their rates payments.

The concession is to be applied to the period the water consumption is billed not consumed.

When a maximum amount per annum is applied the concession available for a half year period is capped at 50% i.e. $5,500. Organisations may historically be used to receiving a bigger concession on one rate notice and little to no concession on the next rate notice for the year. By spreading the available concession over the two rate levies, the expense to the organisations will be smoothed.

An increase to the maximum concession by $1,000 from the previously $10,000 will assist these sporting clubs and associations with increased costs. This concession will provide significant financial assistance to these associations yet encourage the associations to implement water saving initiatives.

It is proposed that:

- a concession of 75% of water consumption charges up to a maximum of $11,000 per annum for the 2025/2026 financial year is granted for the above sporting clubs and associations.

10.2.1 REGIONAL ARTS DEVELOPMENT FUND ROUND 1 FOR 2025/2026 FINANCIAL YEAR

Date: 5 August 2025
Author: Arts & Cultural Coordinator / RADF Liaison Officer – Bridie Weaver
File ID:
Letter ID:
Attachment:
Minute No: OM006499

Resolution:

That Council review the assessment summary for Regional Arts Development Fund applications and endorse the funding recommendation:

1. ***Applicant – Rodney Hammond***
   Project – Silversmithing Workshop
   Outcome – Recommended totalling $3,000.00

Moved: Cr Boyce ***Seconded: Cr Leo*** ***Carried***

Report

The following funding recommendations have been developed after the Banana Shire's RADF panel assessment of Round 1 – July 2025/2026 applications.

RADF opens with a balance of $65,000 available for both community and individual development grants. The recommendation presented is within the budget available.

Applicant	Funding Category	Project Title and Brief	Total Project Cost (exc GST)	Grant Requested (exc GST)	Recommendation
Rodney Hammond	**Community Project Grant:** Skills Development	**Silversmithing Workshop:** Silversmithing workshops by the 'Mobile Jewellery Tutor' will be delivered at the Biloela Community Arts House for 12 participants. Participants will design and make their own unique jewellery, encouraging creativity and self-expression.	$7,526.00	$3,000.00	Recommended: $3,000.00

The above applications were assessed by members of the RADF Assessment Panel:

1. Len Neale

Considerations

1. Corporate Plan

2.1(a) *Develop partnerships and relationships with the community, business and government.*
2.1(c) *Encourage healthy and happy communities through provision, encouragement or support of a range of wellbeing services and facilities including community resources, arts and culture, recreation and sport, commemorations, communication facilities, festivities and events.*

2. Policy and Legal Implications

N/A

2. Financial and Resource Implications

2025/2026 RADF Funding Summary		
Item	**Income**	**Expenditure**
Annual budgeted amount for RADF community & individual grants	$65,000	
Approved/paid grants		$0
Pending approval (Round 1 – July 2025/2026)		$3,000
Remaining balance if July 2025/2026 round ratified by Council	**$62,000**	

4. Risk Assessment

N/A

11.0 Infrastructure Services

11.1.1 ACTION REPORT ON PREVIOUS COUNCIL RESOLUTIONS – INFRASTRUCTURE SERVICES

Date: 18 August 2025
Author: Director Infrastructure Services – Patrick Moore
File No:
Letter No:
Attachment: Resolutions Action Report
Minute No: OM006500

Resolution:

That Council note and receive the attached Resolutions Action Report for Infrastructure Services.

Moved: Cr Bailey Seconded: Cr Burling Carried

Report

This report is to advise Council of the outstanding matters currently being dealt with by the organisation.

Considerations

1. **Corporate Plan**
   N/A

2. **Policy and Legal Implications**
   Policy and legal implications will be addressed through each matter.

3. **Financial and Resource Implications**
   Budget impacts will be addressed in resolving each matter.

4. **Risk Assessment**
   N/A

Cr Bailey asked if the community consultation process has commenced with property owners for the r emoval of the ballast along the old railway line in Jambin. Director Infrastructure Services advised that the consultation process has not yet commenced, however this process will be conducted prior to the commencement of the project.

Cr Burling requested that the footpath be extended from the Catholic Church to the Pedestrian Crossing at the St Joesph's Primary School along Rainbow Street, Biloela. Director Infrastructure Services to investigate.

Cr Casey requested an update on the redirection of the School Bus Service at Thangool State School. Director Infrastructure Services advised that Council is investigating alternative access options and provide an update to Council.

Council Resolutions Action Report
Infrastructure Services

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
22/03/23 23/08/23	Page 30 Page 29	**Cr Casey** asked for an update on his request for the erection of school warnings signs on the Burnett Highway, Thangool. Following discussion **Cr Casey** advised he will reforward his request via email to the Acting Director Infrastructure Services for it to be raised at the upcoming Banana Road Safety Management Group meeting. **Cr Casey** requested that second item on the Resolutions Action Report regarding request for school warning signage on the Burnett Highway, Thangool be reopened. The Director Infrastructure Services to reinvestigate and arrange for another survey to be conducted.	16/09/2024 Designs complete and will be submitted to TMR. 06/11/2024 Road Safety meeting to be held next week, report will be presented in December 02/12/2024 TMR were supportive in principal and have now provided detailed feedback. Technical services will incorporate feedback and submit to Main Roads by February 2025. 06/01/2025 TMR were supportive in principal and have now provided detailed feedback. Technical services will incorporate feedback and submit to Main Roads by February 2025. 17/03/2025 Awaiting feedback from Cr Casey from community consultation. 14/04/45 Confirmation received by Cr Casey. Design to be finalised and submitted to TMR for approval and funding guidance. 18/06/2025 Council is awaiting the RPEQ certified lighting design from our Consultant and will lodge upon receipt. 08/08/2025 Council is awaiting the RPEQ certified lighting design from our consultant and will lodge upon receipt.	OPEN
20/11/24	Page 31	**Cr Bailey** requested Council write to the Department of Transport and Main Roads or Queensland Rail asking them to remove some of the ballast along the old railway line in Jambin or provide the approval for Council to undertake the work. The Director Council Services advised he will prepare the correspondence.	Correspondence sent to DTMR. Awaiting response. Preparing location plans to provide TMR with area of concern and possible options.	OPEN

23/04/25	Page 31	**Cr Bailey** asked if community consultation will be conducted regarding the works along the old railway line in Jambin. Director Council Services advised that consultation with the community will be conducted once location plans have been designed and a response is received by the Department Transport and Main Roads.	Correspondence following up the letter sent to DTMR in January 2025 has been sent. Item moved from Council Services Resolution Action Report. 8/08/2025 Infrastructure Services contacted QR who advised that they did not have the budget for its removal. They have advised that Council may remove a section to resolve the issue in the interim. Infrastructure Services to inspect the corridor and determine suitable location for removal to improve drainage. Community consultation to be undertaken after the report has been received.	
20/11/24 26/02/25	Page 29 Page 25	**Cr Leo** advised she received a complaint regarding vehicles parking on or very close to the pedestrian crossing opposite the tennis club in Nott Street, Moura as the pedestrian crossing signage is faded and not easily visible. The Acting Director Infrastructure Services to investigate and replace as required. **Cr Leo** requested that the Resolution Action Report item from 20 November 2024 regarding the signage replacement and line marking at the pedestrian crossing opposite the tennis club in Nott Street Moura be re-opened until the works are completed.	02/12/2024 Investigation of signs to be undertaken. 29/01/2025 Technical Services are currently preparing a signage and line marking plan for this crossing as well as the crossing on Bell Street, Moura (next to aged care). It is proposed that both projects will be delivered together using the operational budget to reduce mobilisation costs as Council does not have internal line markers. I expect that these will be ready within the next fortnight. 17/03/2025 Design finalised and will be added to line marking quotes. 14/04/2025 Line marking has been scheduled for May 18/06/2025 Line Marking will now be scheduled for July due to availability of contractors.	OPEN

			16/07/2025 Line marking at the pedestrian crossing has been scheduled for August/September 2025.	
28/05/25	Page 9	**Cr Leo** asked if Council is undertaking work on the western side of the footpath between the Primary School and High School in Moura. The Acting Director Infrastructure Services advised he will investigate and advise Cr Leo accordingly.	30/05/2025 – investigation underway 16/07/2025 No works scheduled for the area at this stage. Inspection of the area will be undertaken. 08/08/2025 Works were being undertaken by a third-party supplier. Any major upgrade works have been deferred until 26/27 under councils' direction.	CLOSED
25/06/25	Page 93	Cr Leo requested an update on the progress of the Moura Flood Study. Director Council Services to liaise with Manager Technical Services and provide an update to Council.	16/07/2025 Tender has been drafted and is with the QRA for peer review.	OPEN
24/07/25	OM006472	That Council resolve to: 1. Endorse the proposed Moura Lighting Program, including the installation of new street lighting at the locations identified in the attached map; and 2. Note the estimated daily operational and maintenance costs per light, and approve the inclusion of these ongoing charges within Council's electricity budget.	18/07/2025 Council approval given to proceed. Technical Services to engage Ergon approved supplier and undertake 5 years roll out.	CLOSED

11.1.2 MONTHLY COUNCIL REPORT – INFRASTRUCTURE SERVICES

Date: 20 August 2025
Author: Acting Manager Infrastructure Works – Leesa Millar
File ID:
Letter ID:
Attachment:
Minute No: OM006501

Resolution:

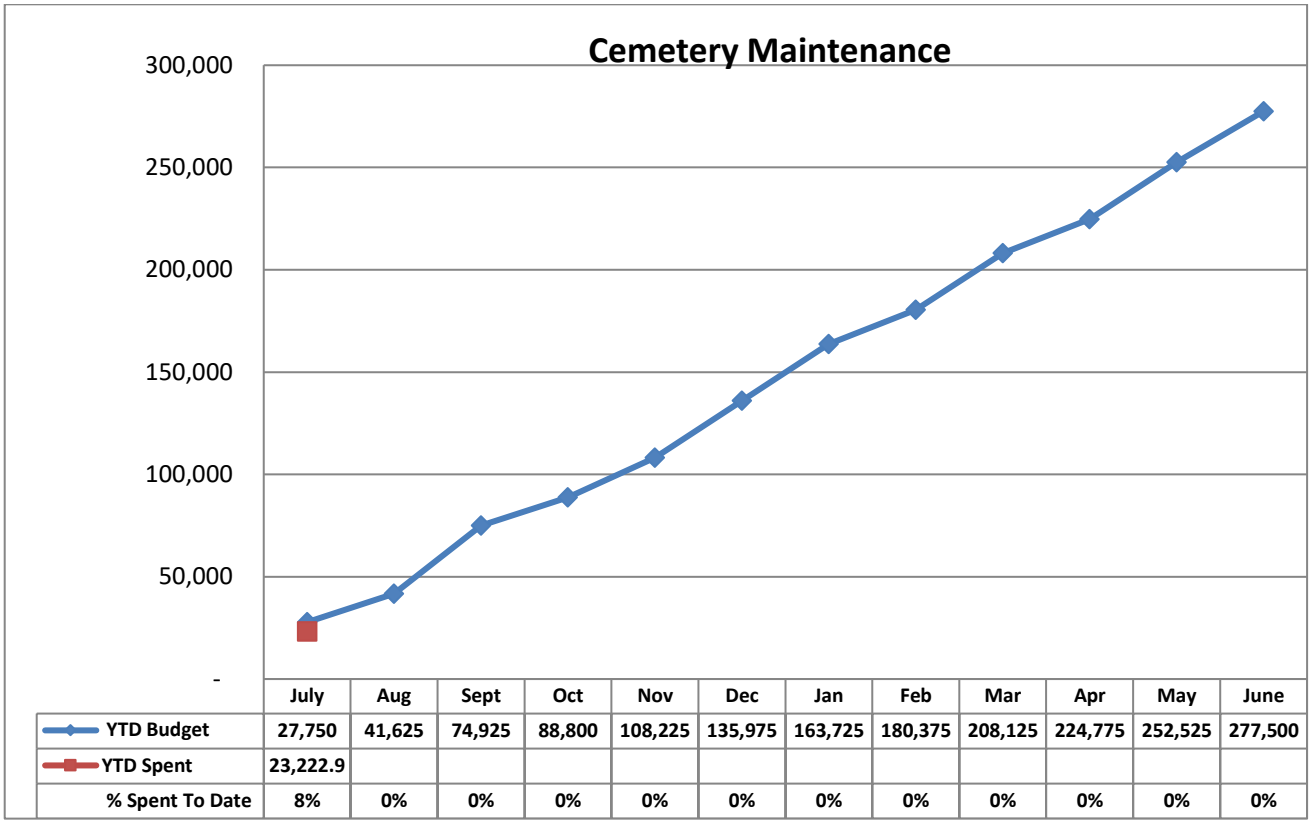
That Council receive the July 2025 Infrastructure Services Monthly Council Report as presented.

Moved: Cr Casey Seconded: Cr Jensen Carried

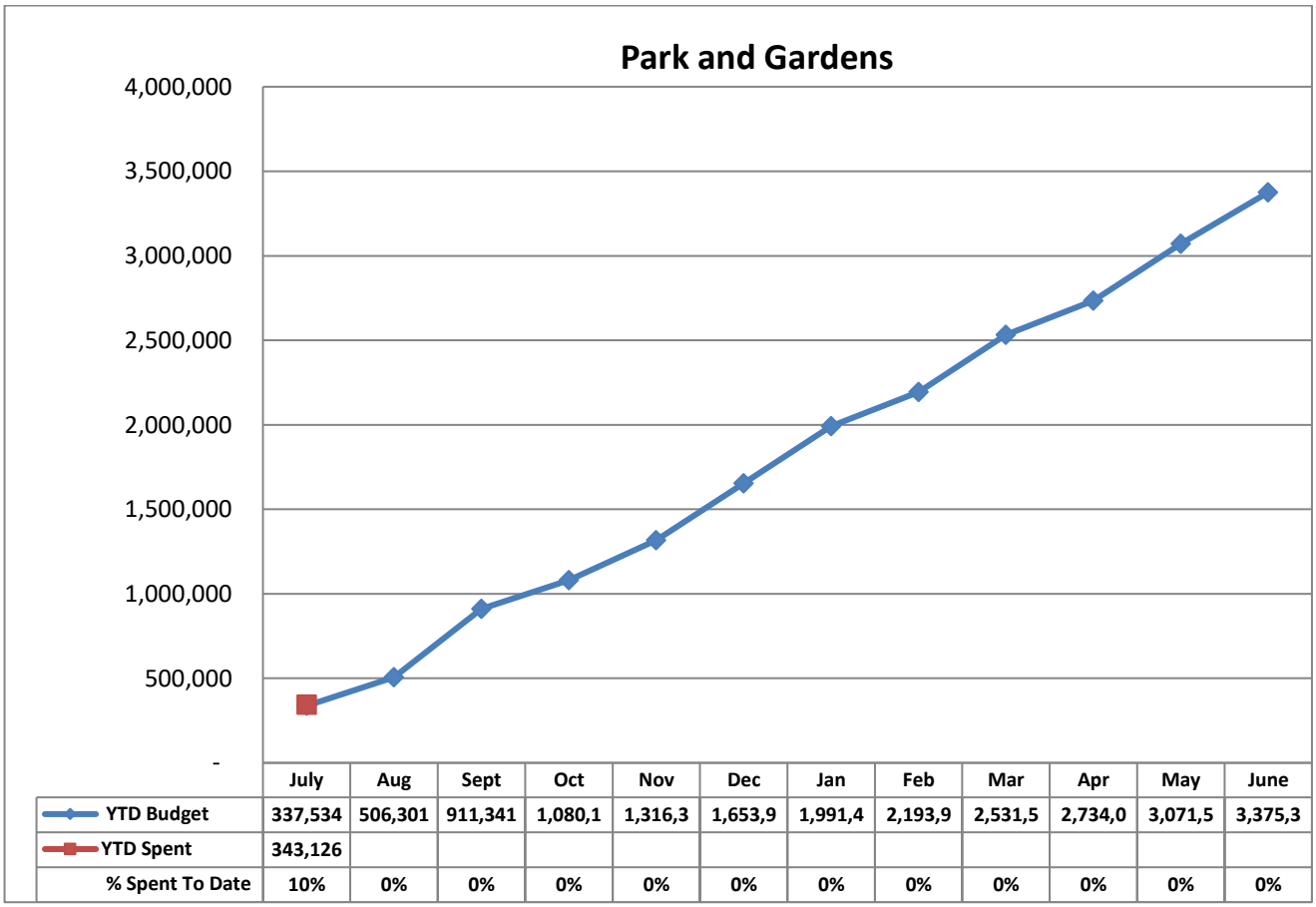
Report

This month's Council report by Infrastructure Services details the following actual expenditure:

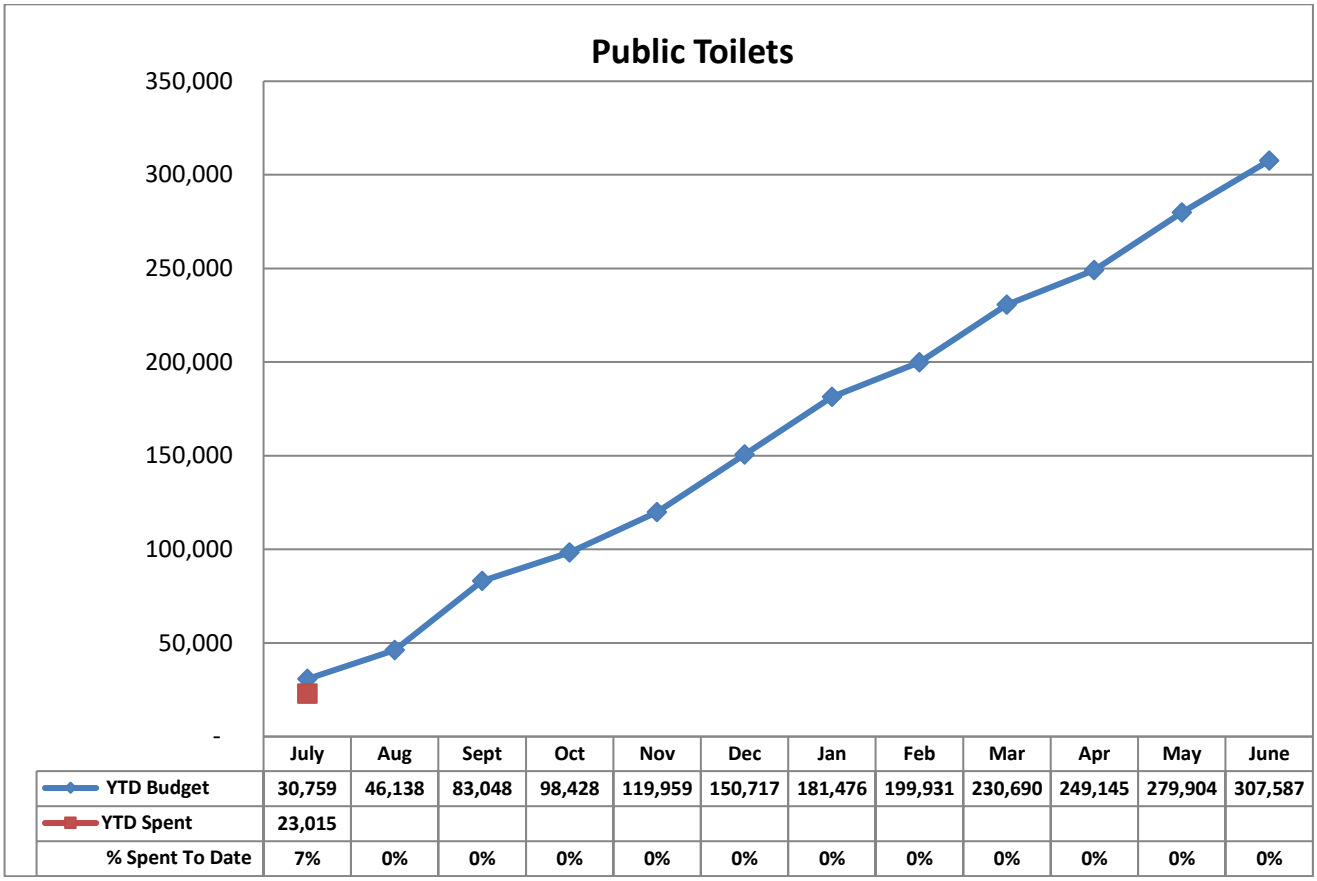
- Cemetery Maintenance
- Parks & Open Spaces
- Public Toilets
- Street Cleaning
- Street Lighting
- Bikeways and Footpaths Maintenance
- Roads Bridges and Drainage Maintenance
- RMPC
- Vandalism



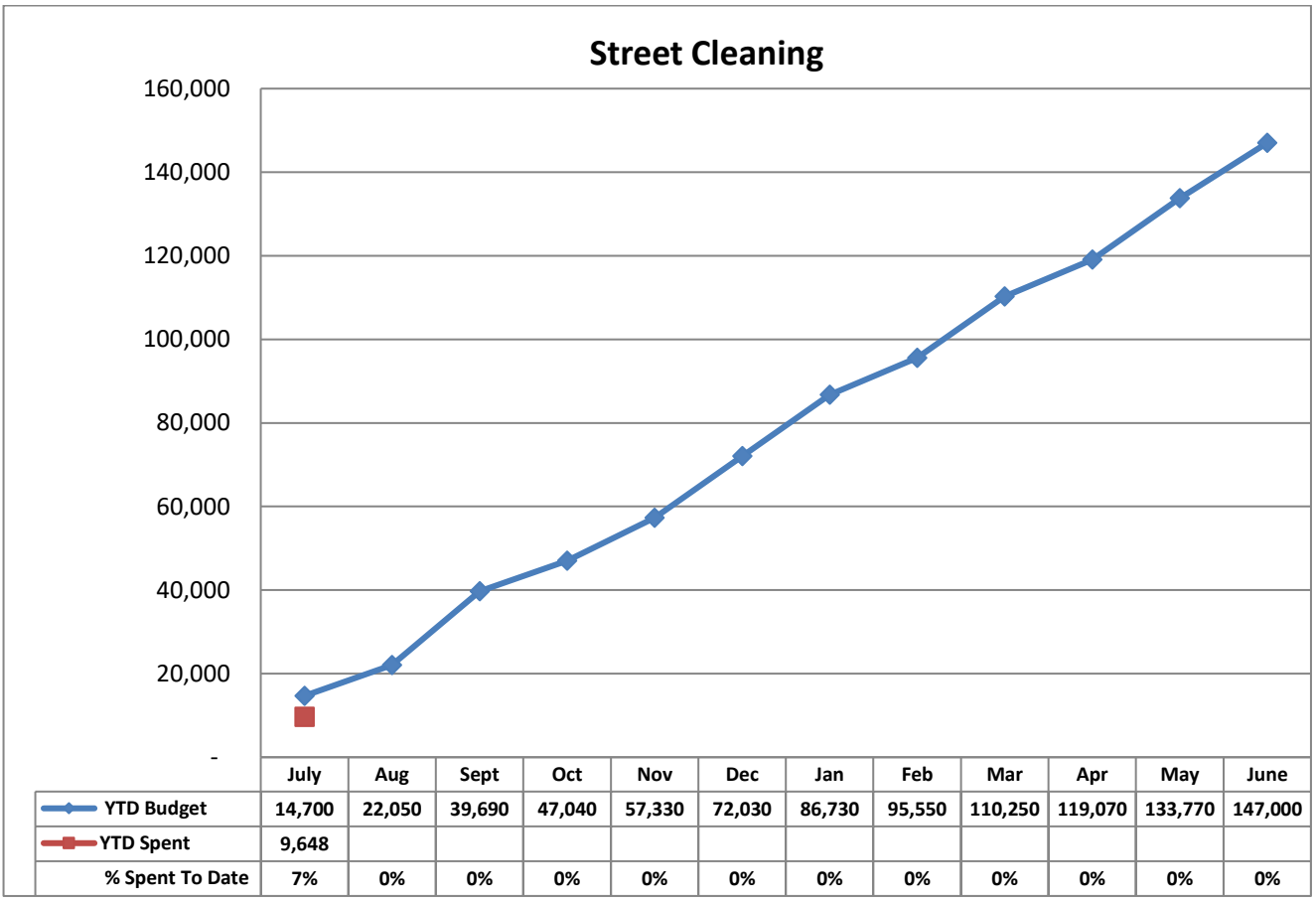
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
YTD Budget	27,750	41,625	74,925	88,800	108,225	135,975	163,725	180,375	208,125	224,775	252,525	277,500
YTD Spent	23,222.9											
% Spent To Date	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



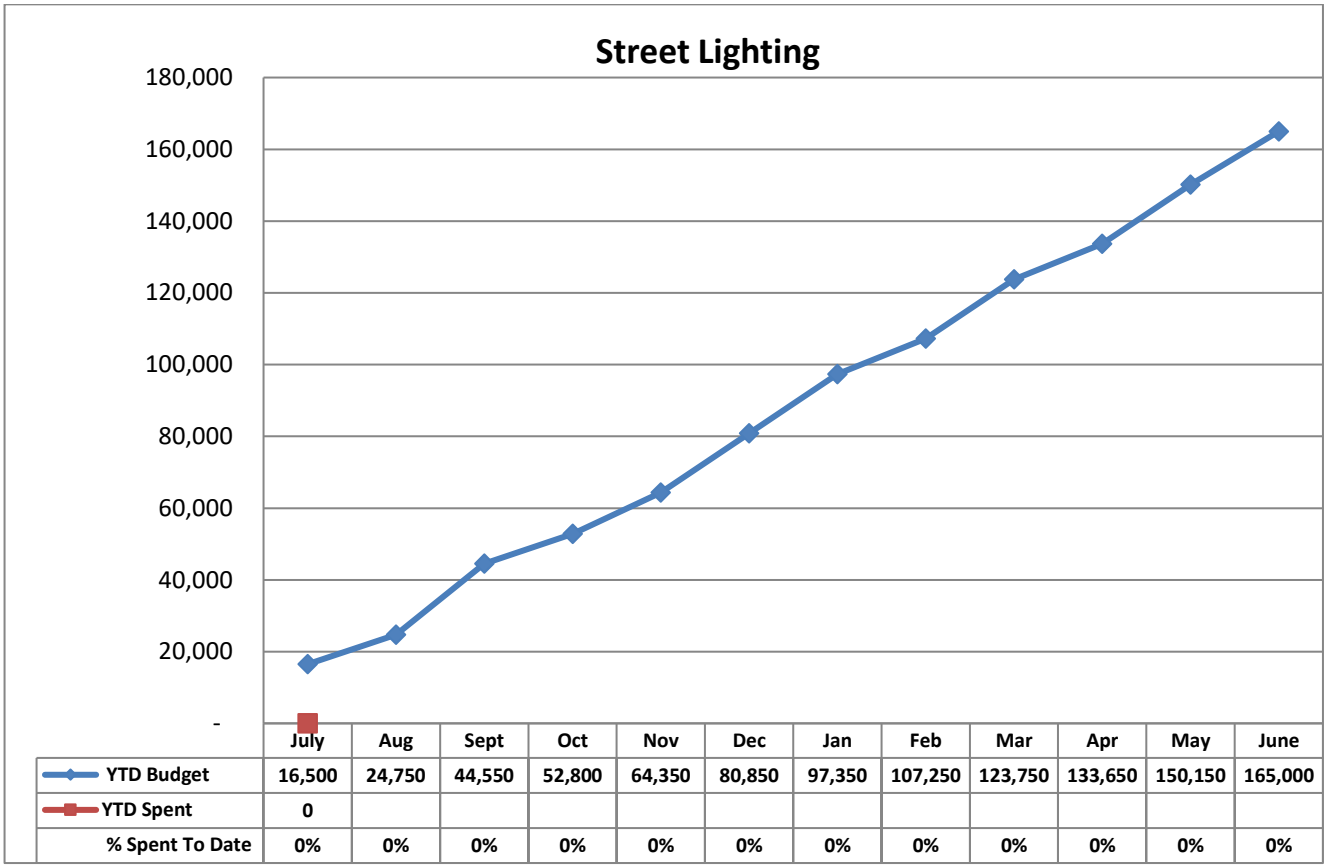
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
YTD Budget	337,534	506,301	911,341	1,080,1	1,316,3	1,653,9	1,991,4	2,193,9	2,531,5	2,734,0	3,071,5	3,375,3
YTD Spent	343,126											
% Spent To Date	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



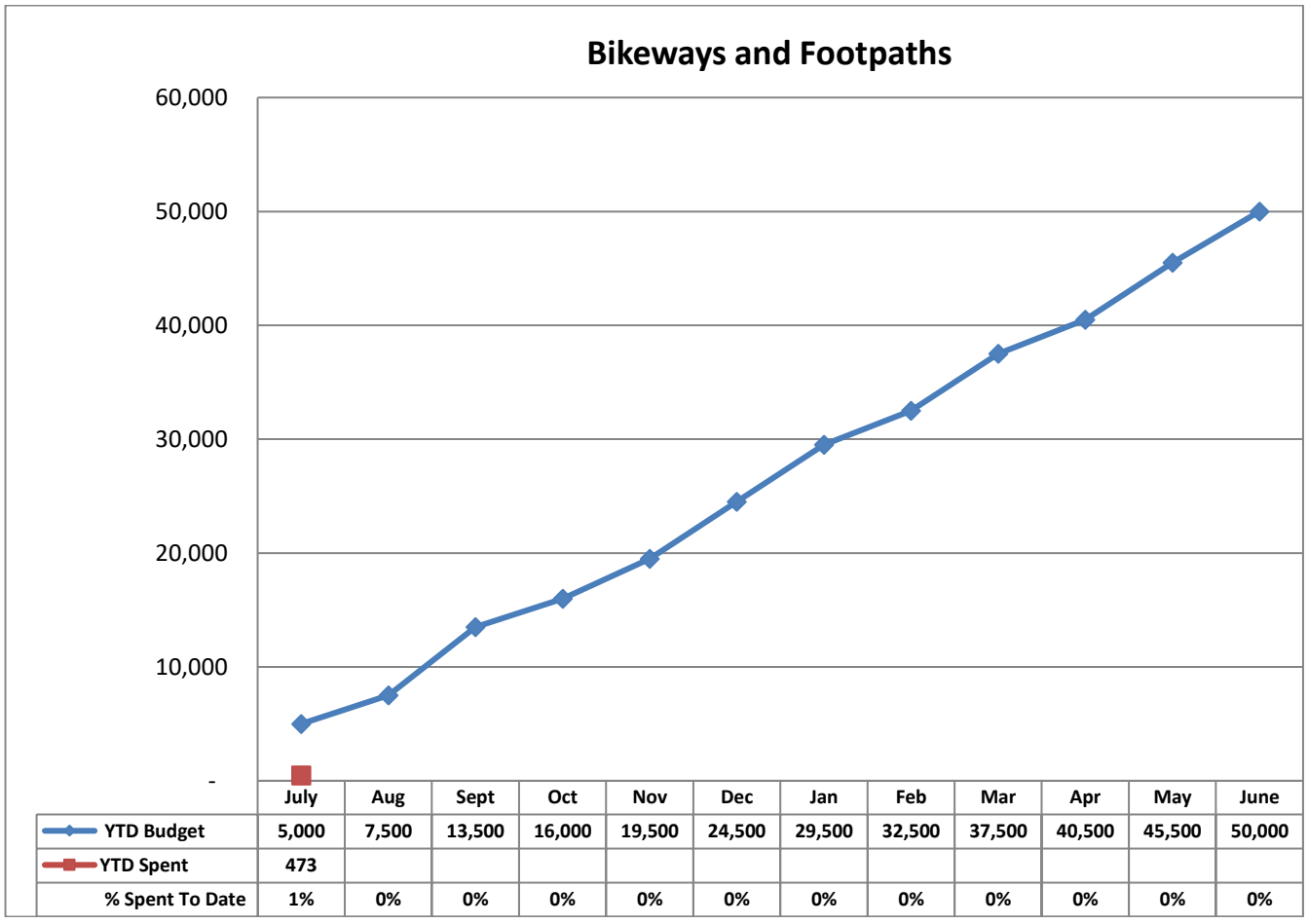
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
YTD Budget	30,759	46,138	83,048	98,428	119,959	150,717	181,476	199,931	230,690	249,145	279,904	307,587
YTD Spent	23,015											
% Spent To Date	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



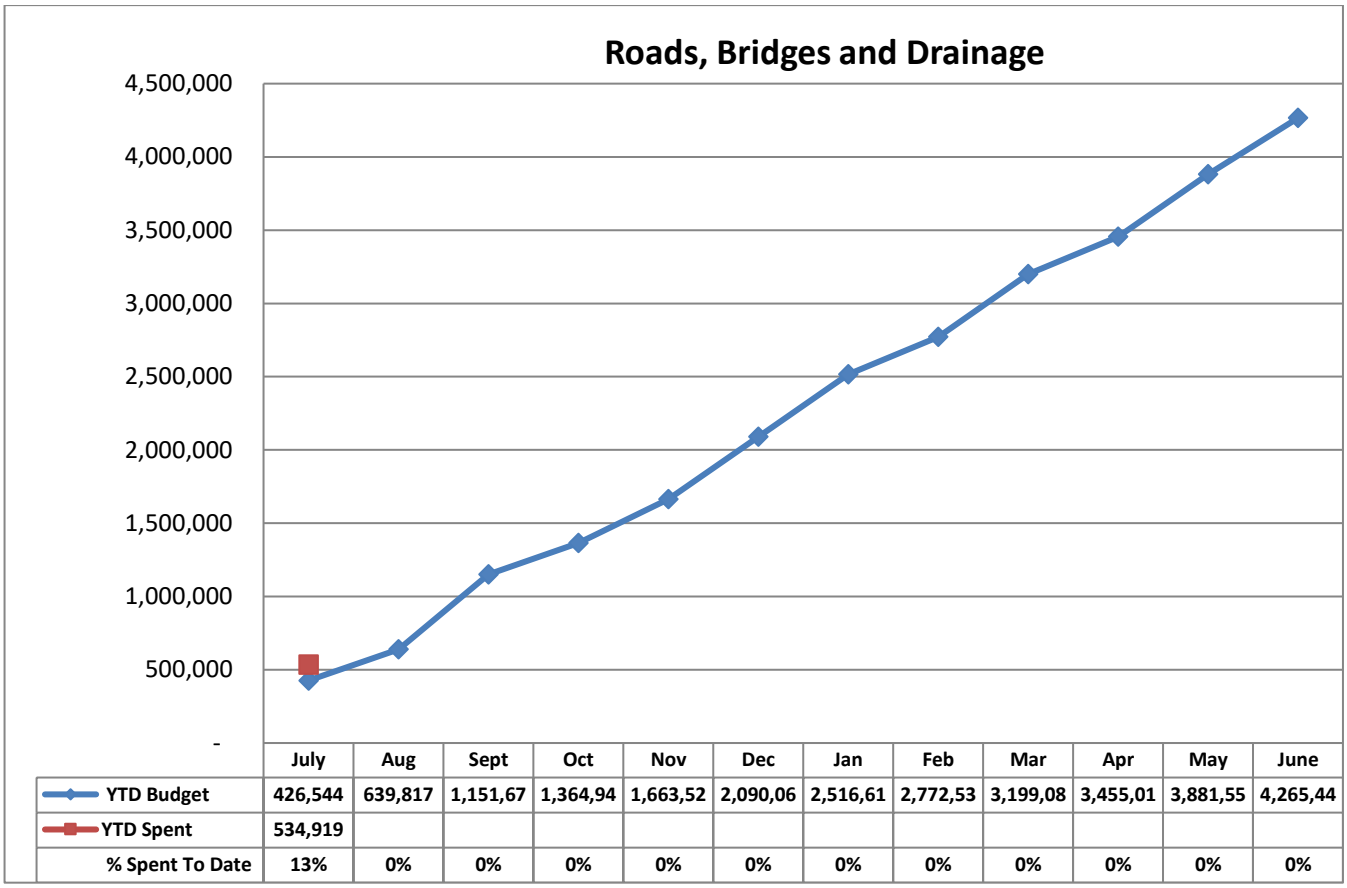
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
YTD Budget	14,700	22,050	39,690	47,040	57,330	72,030	86,730	95,550	110,250	119,070	133,770	147,000
YTD Spent	9,648											
% Spent To Date	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



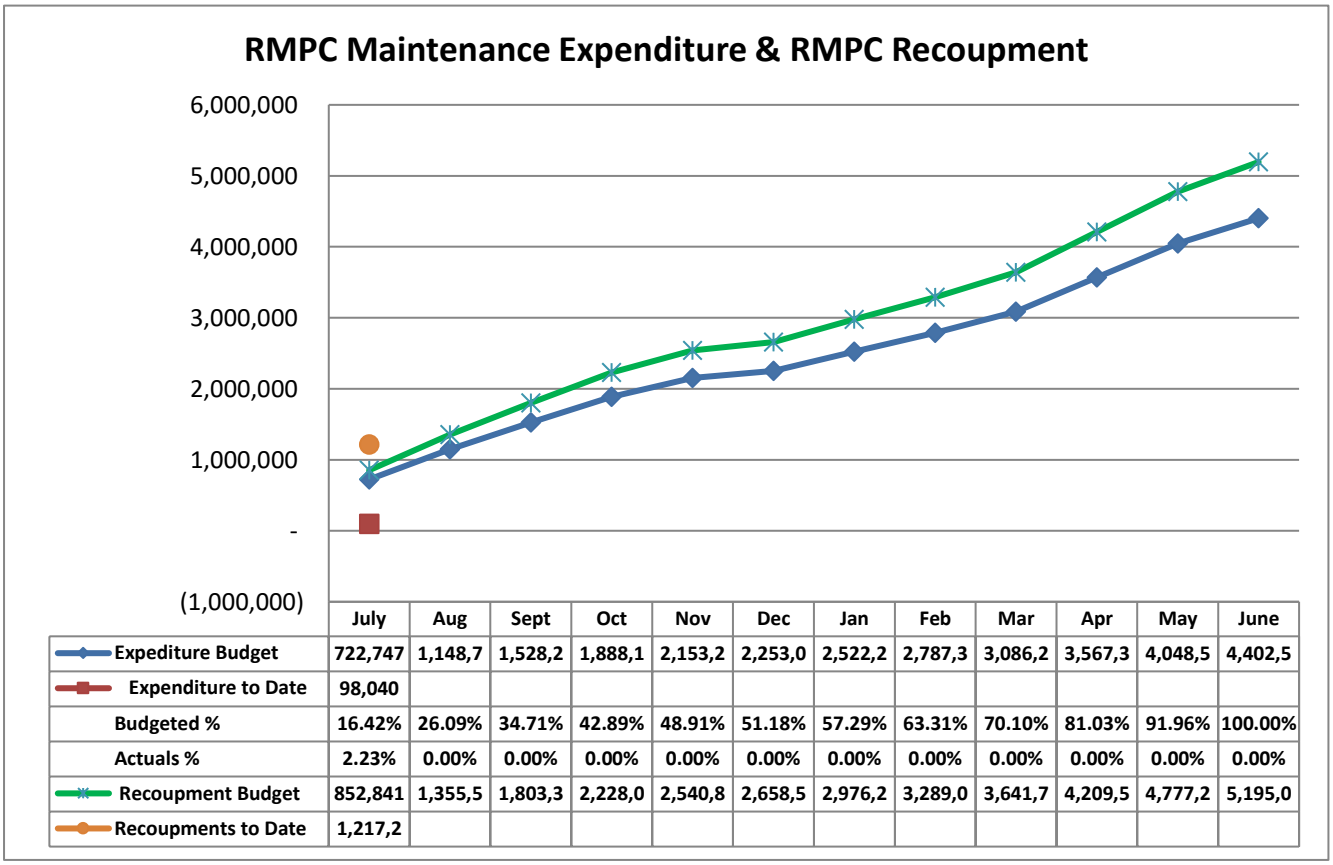
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
YTD Budget	16,500	24,750	44,550	52,800	64,350	80,850	97,350	107,250	123,750	133,650	150,150	165,000
YTD Spent	0											
% Spent To Date	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



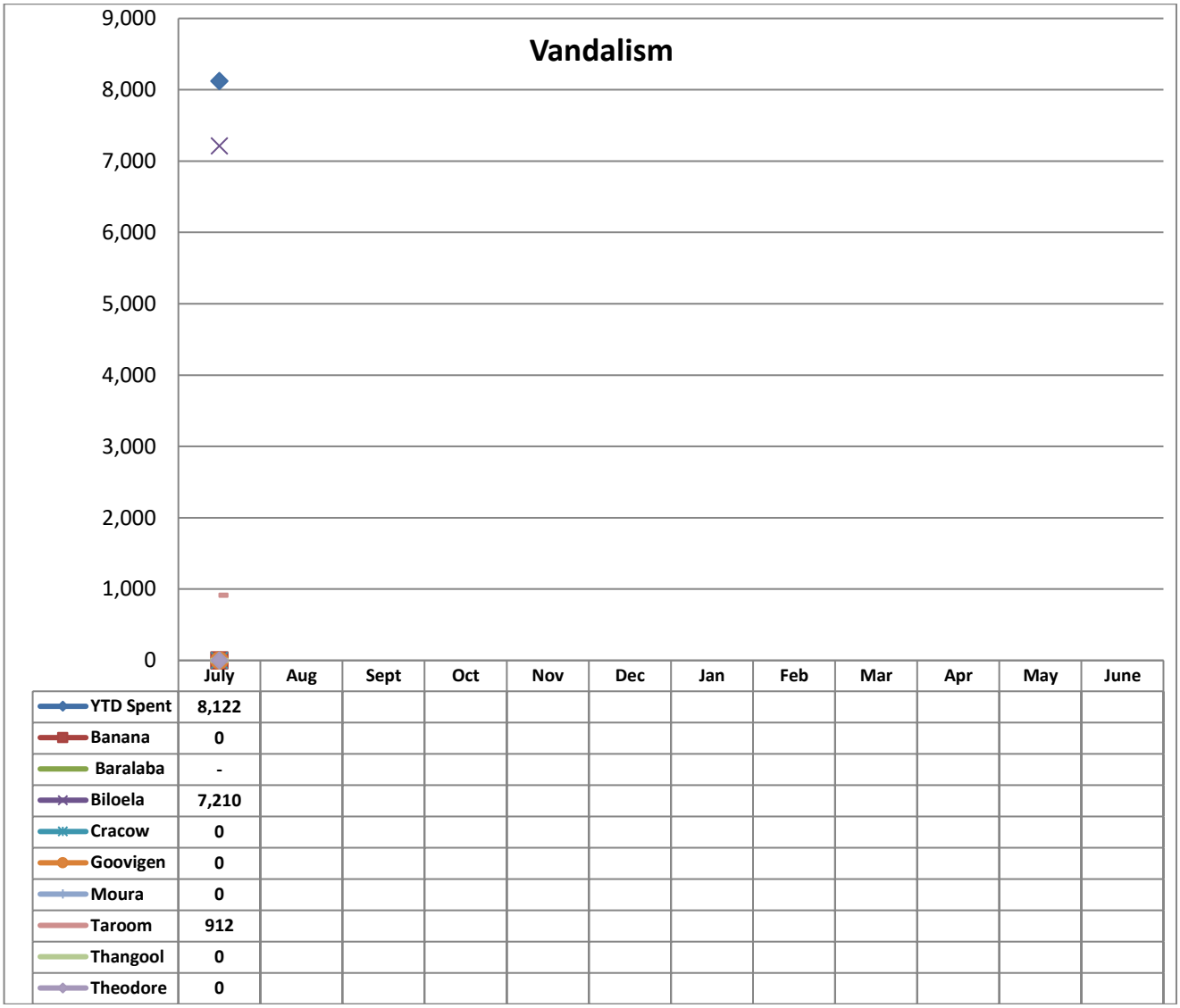
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
YTD Budget	5,000	7,500	13,500	16,000	19,500	24,500	29,500	32,500	37,500	40,500	45,500	50,000
YTD Spent	473											
% Spent To Date	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
YTD Budget	426,544	639,817	1,151,67	1,364,94	1,663,52	2,090,06	2,516,61	2,772,53	3,199,08	3,455,01	3,881,55	4,265,44
YTD Spent	534,919											
% Spent To Date	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Expediture Budget	722,747	1,148,7	1,528,2	1,888,1	2,153,2	2,253,0	2,522,2	2,787,3	3,086,2	3,567,3	4,048,5	4,402,5
Expenditure to Date	98,040											
Budgeted %	16.42%	26.09%	34.71%	42.89%	48.91%	51.18%	57.29%	63.31%	70.10%	81.03%	91.96%	100.00%
Actuals %	2.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Recoupment Budget	852,841	1,355,5	1,803,3	2,228,0	2,540,8	2,658,5	2,976,2	3,289,0	3,641,7	4,209,5	4,777,2	5,195,0
Recoupments to Date	1,217,2											



	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
YTD Spent	8,122											
Banana	0											
Baralaba	-											
Biloela	7,210											
Cracow	0											
Goovigen	0											
Moura	0											
Taroom	912											
Thangool	0											
Theodore	0											

Considerations

1. Corporate Plan

Maintaining Council's infrastructure relates to Council's 'Corporate Objective 5 – Plan and deliver effective and efficient infrastructure services.

2. Policy and Legal Implications

The delivery of this program will be managed in such a way as all appropriate/applicable polices/legislation is complied with.

3. Financial and Resource Implications

The delivery of the various works programs are a significant undertaking by the Works Section which require an extensive commitment by the entire Works group.

All of these various programs will be delivered simultaneously utilising various combinations of Council, Sub-Contractor and Principal Contractor resources.

Critical to the delivery of these inter-connected programs is the diversity and multi-skilled competency of the expanded workforce, with a degree of internal redundancy contained within the Section.

Actual expenditure to date compared to target expenditure for 2024/25 is shown on the included graphs.

4. Risk Assessment

The primary risk factors and control measures that would impede the full delivery of the maintenance program are:

- Wet weather
- Loss of key staff
- Inability to appropriately up-skill, attract and/or retain key staff
- Breakdown of critical plant items
- Availability of key sub-contract plant and services
- Availability of key materials

These risks are constantly being monitored, reviewed, and addressed.

11.1.3 INFRASTRUCTURE CAPITAL WORKS FUNDING REALLOCATION

Date: 8 August 2025
Author: Manager Technical Services – Nathan Garvey
File ID:
Letter ID:
Attachment:
Minute No: OM006502

Resolution:

That Council:

1. ***Approve the proposed reallocation of funding in the 2025/26 financial year as detailed in this report.***

2. ***Approve the proposed nomination of Glenmoral Roundstone Road as a Local Road of Regional Significance.***

3. ***Approve the reallocation of TIDS funding to Glenmoral Roundstone Road in the 2026/27, 2027/28, 2028/29 and 2029/30 financial years as detailed in this report.***

Moved: Cr Boyce Seconded: Cr Leo Carried

Background

At the July 2025 BBRRTG technical meeting, Banana Shire Council officers were advised that the 50% co-contribution required for TIDS funding need to be contributed by Council and cannot be funded through federal funds, such as Roads to Recovery (RTR). RTR funding does not require a co-contribution.

Additionally, TIDS guidelines cap non-Local Roads of Regional Significance (LRRS) allocations at 20%. Currently, 67% of Council's 2024/25 TIDS funding is allocated to the rehabilitation of Orange Creek Road, Prospect, which is currently not a LRRS road.

In addition to the above, there is $48,993 of TIDS funding currently unallocated in this financial year.

Based on the above issues, Banana Shire Council officers are seeking Council endorsement for the reallocation of funding for the 2025/26, 2026/27, 2027/28, 2028/29 and 2029/30 financial years as detailed in the following report.

Proposed Funding Changes – 2025/26

Banana Shire Council officers are seeking Council endorsement for the reallocation of TIDS, RTR and Council funding as detailed in Table 1. The proposed reallocation satisfies the TIDS/Council co-contribution requirements, allocates the additional TIDS funding and ensures that a maximum of 20% is allocated towards non-LRRS roads. Due to the 50% co-contribution requirement, the budget for Defence Road bridge project is proposed to be lowered by $21,744 to free-up the required Council funds to ensure that the overall Capital program budget is not impacted.

Table 1: Existing Funding Reallocation – 2025/26 Infrastructure Capital Program

Road Name	LRRS	Council	%	TIDS	%	R2R	%	Total
Paines Road	Yes	$ -	0%	$500,000.00	33%	$500,000.00	20%	$1,000,000.00

Orange Creek Road	No	$ -	0%	$1,012,867.00	67%	$963,934.00	39%	$1,976,801.00
Shepherdsons Road	Yes	$800,000.00	35%	$ -	0%	$1,000,000.00	41%	$1,800,000.00
Jambin Dakenba Road	Yes	$1,400,000.00	61%	$ -	0%	$ -	0%	$1,400,000.00
Defence Road Bridge	No	$100,000.00	4%	$ -	0%	$ -	0%	$100,000.00
Sum		**$2,300,000.00**		**1,512,867.00**		**$2,463,934.00**		**$6,276,801.00**

Table 2: Proposed Funding Reallocation – 2025/26 Infrastructure Capital Program

Road Name	LRRS	Council	%	TIDS	%	R2R	%	Total
Paines Road	Yes	$510,367.00	22%	$510,367.00	34%	$ -	0%	$1,020,734.00
Orange Creek Road	No	$302,500.00	13%	$302,500.00	20%	$1,371,801.00	56%	$1,976,801.00
Shepherdsons Road	Yes	$707,867.00	31%	$ -	0%	$1,092,133.00	44%	$1,800,000.00
Jambin Dakenba Road	Yes	$700,000.00	30%	$700,000.00	46%	$ -	0%	$1,400,000.00
Defence Road Bridge		$79,266.00	3%	$ -	0%	$ -	0%	$79,266.00
Sum		**$2,300,000.00**		**1,512,867.00**		**$2,463,934.00**		**$6,276,801.00**

It is recommended that Council approve the proposed reallocation of funding in the 2025/26 financial year.

LRRS Nomination – Glenmoral Roundstone Road

Glenmoral Roundstone Road is identified as a Rural Major Collector under the Banana Shire Council Planning Scheme 2021. The road is sixty-three kilometres long, with forty-two kilometres (67%) of the road currently sealed and twenty-one kilometres unsealed (33%).

Glenmoral Roundstone Road serves as a vital link between the Leichhardt and Dawson Highways, facilitating regional connectivity and supporting efficient transport movements. It carries a substantial volume of traffic relative to its rural setting, reflecting its importance not only for general transport but also for local economic and social activity. Additionally, its role as a designated school bus route further highlights its value to the community, ensuring access to essential services and education.

Council Officers recommend that the twenty unsealed kilometres of be progressively upgraded to a sealed standard as part of Council's future Capital Works programs. Sealing will improve safety, reduce maintenance costs, enhance travel conditions, and strengthen regional connectivity.

Based on the above, it is recommended that Council endorse the proposed nomination of Glenmoral Roundstone Road as a Local Road of Regional Significance.

Proposed Five-Year TIDS Program (2025–2029)

As detailed in Table 3, the current five-year TIDS program (2025-2029) includes the rehabilitation of Orange Creek Road and Paines Road immediately, with the progressive sealing of Crowsdale Camboon Road to commence in later years.

Table 3: Existing Funding Allocation of TIDS Funding

Road Name	Project Description	Allocation By Year				
		2025/26	2026/27	2027/28	2028/29	2029/30*
Crowsdale Camboon Road	Form, widen, drainage, pavement and seal • 2028/29 – CH 18.5 – 20.2				$1,451,000	
Orange Creek Road	Pavement rehabilitation • 2025/26 – CH 8.8-12.0 • 2026/27 – CH 2.6-6.3 • 2027/28 – CH 0.0-2.6; 6.3-8.8, 13.2-13.6.	$963,934	$951,000	$1,451,000		
Paines Road	Pavement rehabilitation • 2025/26 – CH 0.0 – 1.0 • 2026/27 – CH 1.0 – 2.0	$500,000	$500,000			

*The 2029/30 Program has not previously been endorsed.

It is recommended that the TIDS funding allocation for Orange Creek Road and Crowsdale Camboon Road be reallocated to Glenmoral Roundstone Road for the following reasons:

- Orange Creek Road
  A maximum of 20% of TIDS funding can be utilised towards non-Local Roads of Regional Significance (LRRS). Orange Creek Road is currently not a LRRS road and would require that either Prospect Creek Goovigen Road or Belldeen Greycliffe Road become a LRRS road to

  make it eligible. It is recommended that this project remain within the future Capital programs but be funded through RTR or other funding streams, rather than TIDS funding.

- Crowsdale Camboon Road
  Crowsdale Camboon Road is identified as a Rural Major Collector under the Banana Shire Council Planning Scheme 2021. The road is seventy-eight kilometres long, with eighteen kilometres (24%) of the road currently sealed and sixty kilometres unsealed (76%).

  The progressive sealing of the sixty unsealed kilometres of Crowsdale Camboon Road (LRRS) has previously been identified as a project which would reduce maintenance expenditure and improve the level of service to the community. Whilst it is desirable for this corridor to be sealed, the upgrade is not governed by risk so does not have a set deadline.

  If endorsed, Officers will continue to pursue alternative funding sources for this project, such as Queensland Reconstruction Authority betterment funding.

- Glenmoral Roundstone Road
  Council Officers recommend that upgrading the twenty unsealed kilometres of Glenmoral Roundstone Road to a sealed standard be prioritised. These works would improve safety for all users and reduce future maintenance costs. To this point, it is anticipated that $750,000 of Operational funds are required to be spent on Glenmoral Roundstone Road maintenance this financial year. Further, sealing will enhance travel conditions, support regional connectivity, and ensure the road continues to meet the growing needs of the community.

The proposed five-year TIDS program (2025-2029) is detailed in Table 4.

Table 4: Proposed Funding Allocation of TIDS Funding

Road Name	Project Description	Allocation By Year				
		2025/26	2026/27	2027/28	2028/29	2029/30
~~Crowsdale Camboon Road~~	~~Form, widen, drainage, pavement and seal~~ ~~• 2028/29 – CH 18.5 – 20.2~~				~~$1,451,000~~	
~~Orange Creek Road~~	~~Pavement rehabilitation~~ ~~• 2025/26 – CH 8.8-12.0~~ ~~• 2026/27 – CH 2.6-6.3~~ ~~• 2027/28 – CH 0.0-2.6; 6.3-8.8, 13.2-13.6.~~	~~$963,934~~ $302,500	~~$951,000~~	~~$1,451,000~~		
Paines Road	Pavement rehabilitation • 2025/26 – CH 0.0 – 1.0 • 2026/27 – CH 1.0 – 2.0	~~$500,000~~ $510,367	$500,000			
Jambin Dakenba Road	Pavement rehabilitation • 2025/26 – CH 16.9-24.8	$700,000				
Glenmoral Roundstone Road	Form, widen, drainage, pavement and seal • 2026/27 - CH 27.3-31.1 • 2027/28 - CH 31.1-34.5, CH36.3-38.3 • 2028/29 - CH 39.8-45.3 • 2029/30 - CH 45.6-51.2		$951,000	$1,451,000	$1,451,000	$1,451,000

It is recommended that Council approve the reallocation of TIDS funding to Glenmoral Roundstone Road in the 2026/27, 2027/28, 2028/29 and 2029/30 financial years.

11.1.4 BILOELA SPLASH PARK

Date: 20 August 2025
Author: Acting Manager Infrastructure Works - Leesa Millar
File ID:
Letter ID:
Attachment:
Minute No: OM006503

Resolution:

That Council approves the awarding of the Tender for the design and installation of the Biloela Splash Park to Water Features By Design Pty Ltd.

Moved: Cr Burling Seconded: Cr Jensen Carried

In January 2025 Council released a tender for the design and construction of a splash park within the Lions Park facility. This tender was awarded but before the signing of the contract the successful contractor contacted Council and withdrew from the project. On receipt of this withdrawal Council released a second tender for the design and construction of the park with an increased budget of $2.8 million (+/- 10%).

On the closure of the tender in July 2025 Council had received three compliant tender submissions:

- Taylor Builders
- Endeavour Pools & Spas Pty Ltd
- Water Features By Design Pty Ltd

On review of the submitted tenders it was determined that all contractors had suitable previous experience with the design and construction of similar facilities and that all submitted tenders were within the specified project budget Additionally the submitted estimated annual running and maintenance costs for each design were within a similar range and therefore the point of difference for each submission was the construction timeframes and proposed design layout and play appeal.

On review of the proposed designs of all three contractors it is Infrastructure's recommendation that we proceed with Water Features by Design as their proposed construction timeframes would allow for the opening of the park for short period before the start of the next winter season. Additionally, the separate zoning layout proposed by their design would allow for a separation between the younger and older park users which will increase the safety of the park for users.

It is also Infrastructure's recommendation that additional to the core splash park design and construction Council approve the awarding of the following provisional items to Water Features by Design:

- Supply and Installation of fencing around splash park area
- Supply and Installation of two covered tables and chairs with electric BBQ within the fenced area
- Supply and Installation of three additional seats within the fence splash park area
- Additional Optional Features for change rooms (e.g. outdoor beach shower, baby change table, mirror, soap dispenser, etc.)

The only remaining aspect of the project after the awarding of this tender will be the construction of the car park which will be completed by Council Crews.

Cr Bailey requested an estimated start date for the Biloela Splash Park project. Director Infrastructure Services to advise Council once the tender process is finalised.

12.0 Council Services

12.1.1 ACTION REPORT ON PREVIOUS COUNCIL RESOLUTIONS – COUNCIL SERVICES

Date: 18 August 2025
Author: Director Council Services – Chris Welch
File No:
Letter No:
Attachment: Resolutions Action Report
Minute No: OM006504

Resolution:

That Council note and receive the attached Resolutions Action Report for Council Services.

Moved: Cr Leo Seconded: Cr Casey Carried

Report

This report is to advise Council of the outstanding matters currently being dealt with by the organisation.

Considerations

1. **Corporate Plan**
   N/A

2. **Policy and Legal Implications**
   Policy and legal implications will be addressed through each matter.

3. **Financial and Resource Implications**
   Budget impacts will be addressed in resolving each matter.

4. **Risk Assessment**
   N/A

Cr Bailey requested clarification regarding the Moura and Biloela Pool management arrangements. The Chief Executive Officer and Director Council Services advised that the Biloela and Taroom arrangements for the new season are unchanged, but a new operator is taking over at Moura.

Cr Burling asked a question regarding the operation of the Workers Accommodation Camp project. Director Council Services provided an update on the project and will bring a report to Council once the tender process is finalised.

Resolutions Action Report
Council Services

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
25/06/20	Page 35	**Cr Leo** referred to a previous request to review the flood study in particular the development area west of the river at Moura. Discussion held and determined that a review should be undertaken in the near future and should also include Theodore and Banana.	KBR contacted 01.07.2020 to review flood height modelling for Theodore. Scope of works to be prepared for review of earthworks impact at Moura and for new studies for Banana, Castle Creek and Pocket Creek.	OPEN
25/06/25	Page 93	**Cr Leo** requested an update on the progress of the Moura Flood Study. Director Council Services to liaise with Manager Technical Services and provide an update to Council.	PO issued with study to commence in August. Findings that works are likely to have some impact. Timing of works being substantiated so that extent of action against landholder can be confirmed. Compiling brief of evidence to submit to legal support for drafting of notices. Evidence dispatched to King & Co on 8 August. Advice provided by King & Co on 22 November being reviewed. Requesting meeting with State Department to discuss any approval required under State legislation. Waiting response from State on dam safety inspection. No dam safety risk identified by State. DCS and MDRS reviewing information provided by State's water licensing section.	

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
			Review of State water licensing information conducted. Discussion with CEO and Mayor on progression plan. New hydraulic study to be conducted. Preparing scope of works. Infrastructure providing scope as part of general flood study updates.	
22/11/23	Page 39	Director Council Services was requested to issue Councillors with after-hours contact arrangements for residents who are unable to recall their Personal Identification Number.	Information to be provided as part of automatic gate system rollout. Process deferred during ongoing trial of current arrangements. Planned visit to assess automatic gate system by Cr Jensen & Manager Environment & Waste in September 2025	OPEN
24/04/24	OM005972	That Council resolve to commit to: 1. The development of Stages 4-6 of the Biloela Industrial Estate. 2. Providing capital budget allocation of $3,604,500 to augment funding provided through external grants.	Grant successful. Milestone 1 lodged 12/07/2024. Planning & engineering underway. Waiting for amended road and lot designs from Infrastructure.	OPEN
24/04/24	OM005973	That Council resolve that: 1. It commits to the development of a temporary Workers Camp at 93 Quarrie Road, Biloela. 2. That the project be staged as such that the number of rooms developed does not substantially exceed the shortfall in the capacity of private sector accommodation providers to meet demand. 3. That the facility be designed to cease operations at the end of the anticipated peak demand for short-term accommodation for the construction phase of renewable energy projects around Biloela.	Development application lodged. Currently in decision stage. Decision to be made at this Council Meeting. Development application approved at November meeting. Preparing Expression of Interest for operations – to be advertised March.	OPEN

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
23/07/25	OM006478	That Council resolve to: 1. Shortlist the two providers Ausco and Anaman for further negotiation; and 2. Authorise the Chief Executive Officer to enter into negotiations with the two parties to develop a recommendation in respect to the preferred respondent.	EOI closed on 30/04/2025. Assessment results being compiled. A report was submitted to Council for the July Workshop. Letters have been sent to both companies to initiate negotiation.	
26/06/24	OM006043	That Council: 1. Note and receive the statutory review of the Local Government Infrastructure Plan in accordance with the Planning Act 2016, section 25(3). 2. Resolve to amend the Local Government Infrastructure Plan as a result of the 5-year review and commence an amendment process in accordance with the Minister's Guidelines and Rules 2023. 3. Resolve to delegate authority to the Chief Executive Officer to complete the statutory process for the 5-year review and commence the amendment process including the appointment of an appointed reviewer.	The consultant has been engaged to undertake the review. Meeting with consultant to occur 19 August 2024. Inception meeting with internal stakeholders held and timeframes for various stages have been set to work towards. Council officers have provided information to consultants to help determine existing networks. Stormwater, roads and parks trunk infrastructure defined and being mapped. Water and sewerage still being prepared. Finalisation of all mapping networks nearing completion. Report expected to be submitted to August meeting.	OPEN
24/07/2024	OM006102	That Council approves an exemption for valuable non-current assets Expression of Interest/Tendering processes, per S236 1(c) (iii) of the Local Government Regulations 2012, for renewal of leases for the following assets:	All leases in progress – draft leases being created by the Land & Lease team. • Wowan Sports Club – completed;	CLOSED

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
		• Lot 19 RN 1275 12 Dee River Road Wowan – Wowan Sports Club • Lease A on Lot 1 SP252847 24 Washpool St Biloela – Callide Valley Touch Association Inc. • Lease B on Lot 1 SP252847 24 Washpool St Biloela – Biloela Junior Rugby League Club Inc. • Lease C on Lot 1 SP252847 24 Washpool St Biloela – Biloela Valleys Football Club Inc. • Lease D on Lot 1 SP252847 24 Washpool St Biloela – Biloela Panthers Rugby League Club Inc. • Lease E on Lot 1 SP252847 24 Washpool St Biloela – Callide Valley Tennis Association Inc. • Lease F on Lot 1 SP252847 24 Washpool St Biloela – Callide Valley Tennis Association Inc. • Lot 36 FN46 88 Leichardt Highway Banana – Banana Sports Committee Inc. • Lot 105 RN1244 323 Gladstone Road Biloela – Banana Shire Historical Society – Greycliffe Homestead.	• CV Touch Assoc – completed; • Biloela Jnr Rugby League – completed; • Biloela Valleys FC – completed; • Panthers Rugby League – completed; • CV Tennis Assoc – completed; • CV Tennis Assoc – completed; • Banana Sports – committee has disbanded. No further action; • Greycliffe Homestead – not due until 2030. No action required.	
20/11/24 11/12/24	Page 10 Page 32	**Cr Leo** asked when will the floor sanding and stage repairs be undertaken at the Moura Kianga Hall. The Director Council Services advised he will follow up and provide the dates to **Cr Leo.** Director Council Services asked Cr Leo if the roof at the Kianga Hall in Moura has leaked since the temporary caulking has been completed. Cr Leo confirmed that there are no leaks to date. Director Council Services advised that the works on the Kianga Hall floor will commence now that the roof is no longer leaking.	Scoping roof repairs to determine the timeline. This needs to be completed before floor work starts. Roof repairs completed. Flooring repairs are part of an insurance claim. Awaiting a response from the insurance company. Insurance company has engaged a contractor for the flooring and is liaising with Kianga Hall Committee regarding suitable dates for works to be completed. Floors of the main hall have been repaired.	CLOSED

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
			In early June 2025 Council was informed that the stage area could not be sanded. The floor is too thin to allow sanding. Currently assessing costs and process for replacing stage flooring. Stage floor installed, sanding and staining completed.	
11/12/24	Page 50	The Chief Executive Officer requested that the water piping at the Baralaba Sports Club currently sitting aboveground be placed underground. Director Council Services to arrange works.	This is the result of investigation into kitchen discharge at clubhouse. Waiting for further advice from the Plumbing Inspector to resolve the issue. The area was made safe by Retic. Site needs a proper grease trap to avoid future clogging of rubble drain. Retic to prepare plans and undertake work.	OPEN
22/01/25	Page 42	**Cr Casey** asked if consideration can be given to installing QR Codes linking Council's online cemetery records at all cemeteries within the Shire to assist with the identification of gravesite locations. The Director Council Services advised he will investigate and provide a report to Council.	Preliminary investigations into QR codes and weather-proof stickers underway. Final works to wait until new website rollout as link to cemeteries directory will change.	OPEN
25/06/25	Page 93	**Cr Boyce** asked a question regarding registration of working dogs on rural/residential properties. Director Council Services provided clarification on the matter. The Chief Executive Officer advised that a report will be provided to Council to clarify the requirements and processes conducted by Council on this matter.	No proposed changes to current arrangements. MDRS to provide explanation report on current requirements and processes.	OPEN
23/07/25	OM006475	That Council approve the capital budget inclusions for the Land & Lease team and the Building Services team subject to no negative impacts on the approved 2025/2026 capital budget.	Finance to action	CLOSED

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
23/07/25	OM006476	That Council resolve to approve the following amendments to the Fees and Charges Schedule: <u>Animal Control - Refunds</u> • Dog registrations paid in the current year may be refunded or transferred from a deceased dog to a new dog when requested in writing before 31 December (Regulated dogs excluded) - contact Council for further information regarding forms required – amend to: • "Dog registrations paid in the current year may be refunded for a deceased dog when requested in writing before 30 September (Regulated dogs excluded) - contact Council for further information regarding forms required". <u>Pool Safety Inspection Certificate Request (includes 1 inspection)</u> • Decrease the current Pool Safety Inspection Certificate Request (including 1 inspection) from $360.61 to $360.24 (inc GST). <u>Queensland Government Certificate Charge</u> • Increase the current Queensland Government Certificate Charge from $44.26 to $45.76 (GST free).	Amended fees & charges published	CLOSED
23/07/25	OM006477	That Council delegate to the Chief Executive Officer the authority to resolve any issues with the pool arrangements as he deems appropriate in the best interests of Council.	Ongoing	OPEN
23/07/25	OM006478	That Council approve in part the request to change an existing approval (Negotiated Decision Notice) made by Lee Crane Hire Pty Ltd on 23 June 2025 for Development Permit MCU006-23/24 - Material Change of Use - (Impact Assessable) for Workers accommodation (32 rooms) - located	Decision notice provided to applicant	CLOSED

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
		at 57 Jambin Dakenba Road Biloela described as Lot 4 on SP126056 to the extent contained in Attachment 6. And Issue the relevant Negotiated Decision Notice under the Planning Act 2016.		
23/07/25	OM006480	That Council resolve to: A. Grant approval for connection of water 'By Agreement' to Lot 45 on FN209 subject to the following conditions:- 1. The applicant is to enter into an infrastructure charges agreement with Council for payment of Water Supply Infrastructure charges for 240 Equivalent Persons (95 Equivalent Tenements) as approved for the land under MCU020-12/13 (total 240 accommodation units). The applicant shall meet all costs associated with preparation and establishment of the infrastructure agreement including any costs incurred by Council (such as Solicitors fees) with charges calculated as follows:- a. Payment of $332,167.09 based on 240 accommodation units (as indexed from 2015 infrastructure charges resolution of $1,250 per accommodation unit – non-resident workforce accommodation - Area 3, Banana). b. The actual amount of the infrastructure charges contribution is reviewed/indexed periodically by Council and the payment amount shall be the amount current at the time the contribution is actually paid.	Conditional approval provided to applicant along with offer of recalculated charges for their consideration	CLOSED

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
		c. Payment is required prior to provision of a metered water connection point by Council. 2. The applicant is to arrange for the transfer of 35ML of High Priority Water to the Banana Shire Council (Dawson River Zone N). Alternatively, Council will accept a transfer of 105ML of Medium Priority Water Allocation (Dawson River Zone N), or alternatively a financial contribution of $315,000 to be indexed annually in line with CPI. Transfer of the water allocation or payment of the financial contribution is required prior to Council installing the metered water connection. 3. The applicant accepts that water obtained from Council's town supply under this water by agreement arrangement is to be used for domestic (ie typical household type) use only. Water is not to be used for non-domestic use for example:- construction purposes, off-site use, watering stock, sale to third parties, etc. 4. The applicant is to make application for a metered water service connection and is to meet the cost of service installation at Barfield Road. Council is prepared to approve a meter of maximum nominal diameter 800mm. 5. Water supply at the metered connection point is to be restricted to a maximum rate of 1.65 litres/per second, but may be less than this at any time. A restriction device is to be incorporated into the connection point and the cost is to be met by the applicant. 6. Council will nominate the location of the metered water connection to the existing main in Barfield Road.		

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Open / Closed
		7. The applicant accepts that that the water line after the meter is a private pipeline, and the applicant is responsible for pipeline design, installation, operation and maintenance costs. The applicant is required to obtain any approvals for undertaking works within the road reserve prior to commencing installation works. 8. The method of operating and charging/billing (access charges and consumption charges) will be in accordance with Council's standard practices. 9. The applicant is required to comply with any regulations and water restrictions applicable to the Banana Water Supply Area. 10. This approval shall remain current for a period of two (2) years from the date the approval was granted, after such time the applicant will need to reapply. 11. Council reserves the right to withdraw this approval for water by agreement if the conditions of approval are not complied with. 12. The applicant and subsequent property owners are required to comply with the conditions of this approval; and B. Authorise the Chief Executive Officer to negotiate with the applicant an agreed amount for the infrastructure charges agreement referenced in Condition 1 and the alternative financial contribution in lieu of the water allocation transfer referenced in Condition 2.		
23/07/25	OM006481	That Council resolve to adopt the Banana Shire Council Callide REZ Procurement Strategy for implementation.	Project Plan nearing completion for submission to State prior to entering funding agreement	OPEN

12.1.2 OVERVIEW OF THE REGIONAL WASTE EDUCATION AND BEHAVIOUR CHANGE IMPLEMENTATION PLAN

Date: 30 July 2025
Author: Manager Waste and Environment - Perry Dedes
File ID:
Letter ID:
Attachment: Regional Waste Education and Behaviour Change Implementation Plan
Minute No: OM006505

Resolution:

That Council endorse the activities supported by Banana Shire Council under the Regional Waste Education and Behaviour Change Implementation Plan.

Moved: Cr Boyce Seconded: Cr Burling Carried

Report

The purpose of this report is to provide Councillors with the Regional Waste Education and Behaviour Change Implementation Plan (EBC Plan) (ID1978162), and to seek endorsement of activities that may be supported by Banana Shire Council under the Implementation Plan in accordance with the Regional Governance Structure of the Central Queensland Region of Councils (CQROC).

This Education and Behaviour Change (EBC) Implementation Plan outlines a strategic approach to waste education and behaviour change activities across the Central Queensland (CQ) local government areas. The objective is to:

- Increase correct recycling and waste separation practices among residents and businesses,
- Enhance community participation in circular economy initiatives,
- Foster a long-term behaviour change through education and engagement strategies and,
- Build council capacity to deliver effective waste education programs.

These objectives will be achieved through a set of activities outlined within the EBC Implementation Plan that were developed in collaboration with Council and the CQROC Behaviour Change Coordinator (BCC).

The EBC Implementation Plan is a “living” document and will change throughout time dependent on availability of resources/funding, alignment with each Council’s current Corporate Plans, and emerging industry issues. The activities specific to Banana Shire Council are outlined within the attached EBC Plan. In summary these actions include:

Bin Harmonisation: Communication to affected residents to inform them about the replacement of their general waste bin lid to align with Australian Standard 4123.7-2006. Funding available.

At Home Composting: Create education resources and provide workshops for composting and composting equipment. CQROC are in the process of acquiring funding.

Recycling Education Schools: Build Council capacity to deliver effective waste education programs, increasing correct recycling and waste separation practices. CQROC are in the process of acquiring funding.

BACKGROUND

To enable a collaborative approach amongst Councils in Queensland, the State funded the development of Regional Waste and Resource Recovery Management Plans (WRRMP). The Central Queensland WRRMP was developed and endorsed by the CQROC board in June 2023 and identified education and behaviour change measures to be implemented to improve waste and resource recovery outcomes throughout the region. To facilitate and coordinate the execution of these measures here in CQ, the State funded the engagement of a BCC to work collaboratively with Councils across the region.

These CQ councils, although geographically and socially diverse, face common challenges in waste management, including a higher than average of waste per capita; 555kg (QLD: 514kg, Aus. 512kg), and high contamination rates in co-mingled recycling bins. Additionally, recent Waste and Recycling Behaviour Change surveys by the QLD Department of Environment, Tourism, Science and Innovation, have identified confusion as a barrier, together with lack of awareness around available waste diversion programs (DESI, 2024). Regardless of these barriers, CQ residents consider recycling '*quite*' or '*very important*' and the majority state that they recycle even if it takes extra effort because recycling makes them feel good (DESI, 2024).

This EBC Implementation Plan provides a coordinated approach over the next 3 years to address these issues by supporting residents' desires to do the right thing. This will be achieved through education and engagement activities led by the BCC and participating Councils. These activities must be endorsed by the respective Councils before the entire Implementation Plan is presented to the CQROC Board for adoption. Submission of an adopted EBC Plan is a requirement of the State funding agreement, due 31 October 2025.

BUDGET IMPLICATIONS

Funding will be sought from the Queensland Government for projects, where possible. The BCC will be the human resource for some smaller activities and where there are alignment in activities across Councils.

LEGISLATIVE CONTEXT

These is no considered legislative context.

LEGAL IMPLICATIONS

There are no considered legal implications.

STAFFING IMPLICATIONS

Staffing will be via BCC and current Council staff.

RISK ASSESSMENT

There are no considered risk implications.

CONCLUSION

The EBC Plan is critical to the execution of the Regional Waste and Resource Recovery Management Plan – Central Queensland. With the endorsement by each Central Queensland Council, the EBC Plan will then be provided to the CQROC Board for final adoption.

CQROC Central Queensland Regional Organisation of Councils

Behaviour Change Activities

Item No.	Target Waste Stream	Related initiative / alignment with RWMP	Priority initiative / Action	Strategy / Behaviour Change approach	Lead	Regional partner/s (whole region, council or group of councils)	Partners external to region	Start date	End date	Success indicator	Additional human resources	Alignment to Waste Strategy targets	Estimated Budget	Funding Required? Identify Fund and Amount	Comments
1	MSW	Bin Harmonisation - Update residual bin lid colour to align with Australian Standard 4123.7-2006	Community engagement during the implementation of bin harmonisation activities	Development and implementation of a specific Community Engagement Plan	GRC, RRC	BCC	DETSI (via OCE), JJ Richards	01/07/26	6/30/27	Objectives within community engagement plan completed	Waste contractors	improved recycling rates	$7,500	Yes GrowFOGO Stream 3 $200,000	BCC will create a brief communications plan including FAQ's for participating councils
2	organics	Home composting	Reduce waste to landfill	Create education resources, hold workshops, and research compost equipment providers	BCC	LSC, BSC	N/A	01/04/26	30/06/27	Education resources available online, workshops completed	nil	reduction in household waste	$5,000/Council	No	Budget for annual provision of subsidised compost equipment. All developed resources would be available to non-participating Councils to support existing education activities
3	MSW	Implementation of GO Service	Education and behaviour change initiatives prior to and during the implementation of the kerbside organics collection service.	Development and implementation of a specific Community Engagement and Education Plan	GRC	BCC	DETSI (via OCE), JJ Richards	01/07/25	30/06/27	Objectives within community engagement and education plan completed	waste contractors	diversion from landfill	$200,000	Yes GrowFOGO Stream 4 $200,000	Led by participating councils, a thorough cross departmental engagement plan will be developed, BCC will assist where required
4	MSW	Recycling Education - residents	Increase correct recycling and waste separation practices among residents	Develop recycling education campaign including RA, resource, financial and communication plans. Hold education events	BCC	LSC, BSC, CHRC, WASC	DETSI	01/07/25	31/12/27	Education materials distributed and scheduled events completed	Council officers across various departments	improved recycling rates	$20,000	yes	Budget for design, print and purchase education resources. All developed resources would be available to non-participating Councils to support existing education activities
5	organics	Food Waste Avoidance	Foster long-term behaviour change through education	Develop and implement food waste avoidance project plan	BCC	whole region	End Food Waste Australia	01/04/26	30/09/26	Measure engagement rate of communication initiatives	Council Comms team	reduction in household waste	$10,000	no	Budget for workshop events, printing and advertising and boosting social media content. All developed resources would be available to non-participating Councils to support existing education activities
6	recyclables	Waste facility engagement campaign	Raise awareness of accepted free to recycle items at council waste facilities	Develop and implement a communication plan	BCC	whole region	Waste facility contractor	01/10/25	31/03/28	Measure engagement rate of communication initiatives	Waste Facility contractors	improved recycling rates	$1,000	no	Budget for design and print of education resources. All developed resources would be available to non-participating Councils to support existing education activities
7	C&I	Event Waste Management	Reduce waste disposal at events on or within council facilities	Develop Waste Management Plan template, Develop an event waste and recycling resource kit, Feasibility analysis of regional event reuse trailer	BCC	whole region	N/A	01/10/26	01/10/26	Event waste management plan utilised among all councils	Council events team, event organisers	diversion from landfill	$5,000	no	Budget for purchasing signage and bin aprons. All developed resources would be available to non-participating Councils to support existing education activities

8	recyclables	Household battery recycling	Raise awareness on correct battery disposal and locations to dispose of batteries	Increase correct recycling and waste separation practices among residents and businesses	BCC	whole region	DETSI, Battery recycling contractor	01/10/25	31/03/28	Measure engagement rate of communication initiatives	Battery recycling contractor	improved recycling rates	nil	no	DETSI resources would be available to non-participating Councils to support existing education activities
9	C&I	Business waste management	Inform businesses on waste reduction and recycling measures to save money	run workshops, create waste avoidance toolkit	BCC	whole region	DETSI, NSW EPA	01/01/27	31/12/27	Select number of businesses pledge to reduce waste to landfill	Staff from commercial enterprises	multiple targets	$10,000	yes	Budget for workshop events. All developed resources would be available to non-participating Councils to support existing education activities
10	msw	Recycling education - schools	Build council capacity to deliver effective waste education programs, Increase correct recycling and waste separation practices	Develop waste education resource items for council to distribute to schools	BCC	LSC, BSC, CHRC	N/A	01/07/25	31/12/27	Waste education resource items distributed to council	School principal and staff	improved recycling rates	$2,000	no	Budget for annual printing of education resources. All developed resources would be available to non-participating Councils to support existing education activities
11	other	Household chemicals/detox your home	Raise awareness on correct disposal, reduce risk of environmental pollution and negative human health impacts	Coordinate a regional wide collection program including development of engagement materials	BCC	whole region	DETSI	01/10/26	31/12/27	annual collection event held in each council region	Chemist, logistics company	diversion from landfill	$20,000	yes	This program will be funding dependant and will replicate similar programs across NSW and VIC
12	MSW	Recycling education - internally	Build council capacity to deliver effective waste education programs, Increase correct recycling and waste separation practices	Develop recycling education materials for staff induction and internal distribution	BCC	whole region	N/A	01/04/27	30/09/27	Recycling education materials used in council induction sessions and distributed internally	Council HR and Comms teams	improved recycling rates	nil	no	All developed resources would be available to non-participating Councils to support existing education activities
13	other	Community initiative	Collaborate with community members to set up a waste reduction program	Hold workshops and support community groups to begin a waste reduction program	BCC	LSC, CHRC	TBC	01/10/25	30/06/27	An established waste reduction program	Not for Profit community organisations	reduction in household waste	$10,000	yes	Budget an estimate for resource acquisition. A case study will be created to assist future community initiatives
14	recyclables	Problem plastics	Encourage the reuse and recycling of hard to recycle items	Facilitate agreements with recycling processing organisations to establish collection points across the region	BCC	whole region	Terracycle	01/07/27	31/03/28	Collection points for hard to recycle items set up within the region	Not for Profit community organisations, Council staff	diversion from landfill	$3,000	no	Budget for specific collection containers for problem plastics
15	MSW	Introduction of AI technology into kerbside collections	Reduce contamination of kerbside recycling bins	Distribute education materials to residents with identified contamination items	LSC	BCC	Waste Collection contractor	01/07/27	30/09/27	Number of correspondence decreases over a broad timeframe	Waste collection contractor	multiple targets	nil	no	LSC led project, budget comes from within collection contract. BCC will assist in developing communication materials to encourage positive behaviour change
16	MSW	Waste Education Strategy	Increase correct recycling and waste separation practices among residents, Foster long-term behaviour change through education and engagement strategies	Develop a waste education strategy that resonates with the community	BCC	WASC	N/A	01/07/25	31/03/26	Adopted Waste Education Strategy	no additional resources	multiple targets	nil	no	Extensive stakeholder engagement with TO and council to ensure support from community
17	MSW	Recycling Education - residents	Survey of household kerbside bins (bin tagging)	Develop a communications plan, conduct bin tagging, compile results and identify	BCC		N/A	01/07/26	31/03/28	XX bins inspection and tagged per LG	no additional resources	improved recycling rates	$1,000	no	Budget for printing resources. All developed resources would be available to non-participating Councils to support existing education activities

				opportunities for improvement											
18	recyclables	Recycling Education - residents	Promote the RecycleMate online tool	Develop communications plan, review and update content relevant to each LG, data analysis	BCC	whole region	DETSI	01/10/25	31/03/28	Increase in user rate of online tool	no additional resources	multiple targets	$2,000	yes, DETSI	Budget per Council is for subscription to RecycleMate
19	Other	Reuse	Promote Garage Sale events	Develop communications plan to promote participation	BCC	whole region	DETSI	07/01/26	30/11/28	number of registered stalls		diversion from landfill	$17,000pa	no	join the national garage sale trail - 30% of 3 or ore councils

12.1.3 FLUORIDATION – BILOELA AND MOURA WATER TREATMENT PLANTS

Date: 7 August 2025
Author: Manager Water Services - Anthony Lipsys
File ID:
Letter ID:
Attachment: Attachment 1 - Photos of Biloela Fluoridation Building
Attachment 2 – NHMRC Public Statement
Attachment 3 – Water Fluoridation and Human Health in Australia Questions and Answers
Attachment 4 – ABC News Map local councils not fluoridating, February 2025
Attachment 5 – Queensland Health Fluoridation Code of Practice
Attachment 6 – FAQs – Local Government fluoridation decisions
Minute No: OM006506

Resolution:

That, in considering the best interests of the community, Council resolves to:

1. ***Cease fluoridation at the Biloela and Moura Water Treatment Plants.***
2. ***Notify Queensland Health, and the Biloela/Thangool and Moura/Banana communities, of Council's decision.***
3. ***Undertake decommissioning of the fluoride dosing facilities in accordance with due process.***

Moved: Cr Casey ***Seconded: Cr Burling*** ***Carried***

Report

Background

In Queensland, addition of fluoride to drinking water was mandated through the *Water Fluoridation Act 2008* (The Act). This legislation required local councils to add fluoride to public water supplies serving populations of more than 1,000 people, aiming to enhance dental health and reduce tooth decay statewide. However, the mandate for adding fluoride to drinking water was lifted in 2012. This change followed amendments to the Act, granting local councils the authority to decide whether to fluoridate their water supplies.

Banana Shire Council commenced fluoridation of the drinking water supplies at Biloela (supplying Thangool) and Moura (supplying Banana) in 2011 in accordance with the requirements of the Act.

Capital works funding was provided by the Queensland Government for construction of the fluoride dosing facilities. Ongoing operational, maintenance and asset replacement costs are met by Council.

Fluoride was last dosed at Moura on February 9, 2018, and Biloela on March 15, 2020, for operational reasons (equipment requiring repair/replacement, lack of appropriately qualified/trained staff). The ongoing cessation of fluoridation at Moura and Biloela is due to operational complexities associated with operating fluoridation systems with limited staffing resources.

The Central Queensland Public Health Unit (CQPHU) conducted onsite audits of the Moura and Biloela fluoridation plants on the 19th and 20th November 2024 despite the facilities being non-operational and physically disconnected/unable to dose fluoride to the water supply. A number of recommendations were provided by the CQPHU to improve worker safety until a decision is made to continue / discontinue

with fluoridation (including appropriate disposal of existing chemical on site, further isolating dosing pumps, etc). Council staff have commenced actions to comply with these recommendations. It should be noted that both fluoridation facilities are isolated in a locked room and there are no reasons for staff to enter these rooms during the course of normal operations while fluoridation is not being carried out. Refer photos – attachment 1.

Discussion/Current issues

Queensland Health, the Australian Medical Association, the National Health and Medical Research Council (NHMRC) and the Australian Dental Association all support the addition of fluoride into drinking water supplies.

The NHMRC released a Public Statement in 2017 (Attachment 2) regarding Water Fluoridation and Human Health in Australia. In support of that statement the NHMRC also published Fluoridation And Human Health In Australia: Questions and Answers (Attachment 3). The 2017 National Health and Medical Research Council (NHMRC) report states that "water fluoridation reduces tooth decay by 26% to 44% in children and adolescents, and by 27% in adults. Recent Australian research states that access to fluoridated water from an early age is associated with less tooth decay in adults".

Council is also aware that there is a strong anti-fluoride sentiment in some sections of the community.

The upper limit for fluoride in drinking water has been set at 1.5 mg/L by the World Health Organisation. Fluoride concentrations for local government areas in Queensland are set in the Water Fluoridation Regulation 2020 and is 0.7 mg/L for Banana Shire.

Excess amounts of fluoride can cause a number of health issues, including dental fluorosis and bone damage. Council's fluoridation dosing systems have a number of controls in place to prevent overdosing.

In Queensland 53 of 77 Councils do not have fluoridated water (refer attachment 4 - ABC News Map February 2025). It is understood that reasons for discontinuing fluoridation are many and varied, but have included operating costs borne by the Councils, the issue of dental health not being seen as a local government responsibility, health and safety of council staff, insufficient staffing resources and community concerns around mandatory fluoridation.

Operational considerations

Fluoridation is carried out under strict requirements. This presents a number of challenges, particularly with respect to staffing. Operational considerations associated with ongoing fluoridation by Council include:

- Fluoridation must be carried out in accordance with the Water Fluoridation Code of Practice October 2021 (Attachment 5). There are strict requirements to be met to ensure worker and public safety.

- Health and safety concerns regarding the handling of sodium fluoride powder by operational staff, which includes concerns around the potential exposure to the chemical. Health monitoring is also required for staff involved in the fluoridation process.

- Staffing attraction and retention challenges resulting in Council having limited suitably qualified (trained and experienced) treatment staff to operate and maintain the fluoridation processes at Biloela and Moura. The following is an extract of the Water Fluoridation Code of Practice October 2021:

    8.1 Operator qualifications and training

    8.1.1 Operators of the fluoridation facility must be appropriately qualified. This means they must have the necessary training, knowledge and experience to competently operate a fluoridation facility.

        8.1.1.1 The necessary skills and knowledge can be obtained through the nationally recognised unit of competency NWPTRT006 – Monitor and operate fluoride addition processes, or an equivalent competency. The unit of competency (NWPTRT006) should be from the Water Industry Advisory Committee Water Training Package NWP or equivalent.

        8.1.1.2 However, completion of formal units of training is not sufficient on its own to guarantee competent operation of fluoride dosing facilities. This was shown during the North Pine Water Treatment Plant fluoride overdosing incident in 2009 where a combination of 'human factors' (i.e. human error) led to a breakdown in safeguards (for more information on managing human factors see Cloete et al. 2011 in section 10, References). Operators must be alert to indications that the fluoride dosing system is not operating as it should and respond appropriately.

    8.1.2 A sufficient number of competent people must be available to operate the fluoridation facility. A minimum of two fluoridation facility operators should be qualified.

        8.1.2.1 The number of qualified people required will depend on the particular staffing arrangements used by a water supplier (e.g. single operator or team based). As a minimum, two competent operators should be available to ensure that periods of sickness, annual leave, weekends and other issues, such as training and meetings, will not result in the unavailability of a competent operator for the fluoridation facility. It is also recommended that the fluoridation facility operators' supervisor (or other appropriate manager) obtain the necessary training, knowledge and experience in order to provide a detailed awareness of the legislative requirements of the Act and Regulation within the management structure of the water supplier (as well as providing operational support in an emergency).

- Additional workload for treatment operators when there are already resourcing issues (including daily fluoride testing, fluoride batching, operations and maintenance tasks, equipment calibration, increased WH&S compliance obligations, increased reporting obligations, etc).

- Additional service delivery costs borne by Council. Estimated cost of fluoridation at Biloela and Moura is $95K per annum.

- If Council's fluoridation plants are to be brought back online, they will both need complete equipment checks and servicing, calibration and re-commissioning. Some equipment will

need to be replaced. Costs could be expected to be in the range of $50K - $80K. In addition there is staff training and dealing with ongoing resource limitation issues.

Ceasing Fluoridation

Prior to ceasing fluoridation of a water supply that is currently fluoridated, Council must have decided that ceasing fluoridation is in the best interests of the community.

Once a decision has been made, Council must notify Queensland Health and notify the relevant local community by publishing a notice detailing the nature of the decision in a publicly accessible way (e.g., on the local government's website or in a newspaper circulating in the area serviced by the water supply to which the decision relates).

Potential community benefits for ceasing fluoridation may include:

- In 2025, expectations are that individuals should have reasonable choice and autonomy in making their health decisions. Enabling personal choice as to whether to consume fluoridated water or not would be considered by many to be of benefit.

- The annual operational cost of fluoridation (estimated $95K) at Biloela and Moura could be directed toward the many other competing priorities for Council funding. Directing these funds towards maintaining/improving water quality and preventative maintenance of critical water assets could be considered better value to the community.

- Removing WHS risks for Council staff operating two fluoridation facilities in the Shire is considered a community benefit.

Queensland Health has advised (FAQs – Local Government Fluoridation Decisions – refer attachment 6) that the process to cease fluoridation is:

1. Local government decides as to whether fluoridation is in the best interests of the community.
2. If the decision is made to cease, the local government must notify Queensland Health and publish a notice detailing the nature of the decision.
3. At least 30 days prior to ceasing fluoridation, the local government must again notify Queensland Health and publish a notice.
4. Decommission dosing facilities.

Biloela Fluoridation Building

NHMRC

Australian Government
National Health and Medical Research Council

NHMRC Public Statement 2017

Water Fluoridation and Human Health in Australia

NHMRC statement

NHMRC strongly recommends community water fluoridation as a safe, effective and ethical way to help reduce tooth decay across the population. NHMRC supports Australian states and territories fluoridating their drinking water supplies within the range of 0.6 to 1.1 milligrams per litre (mg/L[a]).

This Public Statement is based on the findings presented in the NHMRC Information Paper: Water fluoridation: dental and other human health outcomes, and its underpinning Evidence Evaluation Report. Information is also available in the NHMRC Water fluoridation and human health in Australia: Questions and Answers.

Importance of community water fluoridation

Community water fluoridation is the process of adjusting the amount of fluoride in drinking water.

There is reliable evidence that community water fluoridation helps to prevent tooth decay. The consequences of tooth decay are considerable: dental pain, concern about appearance, costs due to time off school and work, and costs of dental treatment.

There is no reliable evidence of an association between community water fluoridation at current Australian levels and any health problems.

In Australia, community water fluoridation programs are a safe, effective and ethical way of reducing tooth decay across the population. Fluoridated water is the primary source of fluoride exposure and helps reduce tooth decay for all, at all stages of life. This includes those who have less access to dental care and other measures that help protect the teeth from decay.

Fluoridation of drinking water particularly benefits children, and those on a lower income who tend to have higher rates of dental decay and less access to dental treatment and other forms of fluoride. Optimal dental health requires a combination of drinking fluoridated water, a healthy diet that minimises sugar intake, good oral hygiene, appropriate use of fluoridated toothpaste and regular dental check-ups.

Access to fluoridated drinking water in Australia

The majority of Australians, around 89 percent, have access to fluoridated drinking water[b]. All Australian states and territories have fluoridated drinking water; however coverage in each jurisdiction varies (Figure 1).

To help protect teeth against tooth decay, only very small amounts of fluoride are needed in drinking water, taking into consideration fluoride in other sources such as foods, drinks and dental products. In some places in Australia there are already sufficient levels of fluoride naturally occurring in groundwater to help reduce tooth decay.

NHMRC supports Australian states and territories fluoridating their drinking water supplies within the range of 0.6 to 1.1 mg/L. This range is aimed at reducing tooth decay, while avoiding any occurrence of dental fluorosis of aesthetic concern.

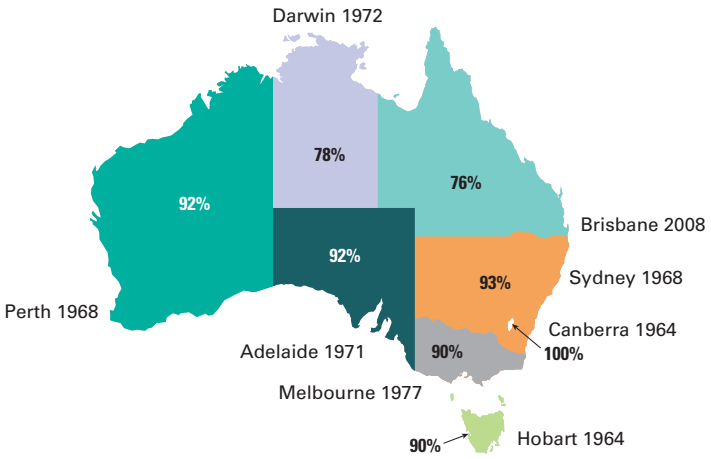
In each Australian state or territory, the government health authority determines the appropriate operational levels within the range of 0.6 to 1.1 mg/L.

For bottled drinking water, the Australia New Zealand Food Standards Code allows between 0.6 and 1.0 mg/L of naturally occurring and added fluoride, and any bottled water with fluoride added must be clearly labelled.[1] However, it is important to note that not many bottled waters contain fluoride, so those whose primary drinking water source comes from bottled water are at risk of receiving inadequate supplies of fluoride to prevent tooth decay.

a mg/L are equivalent to parts per million (ppm)

b Sourced from Dental Health Services Victoria (DHSV) 2017

Figure 1: Percentage of population with access to fluoridated water[c] as at February 2017 and dates of introduction of community water fluoridation to Australian capital cities



The scientific evidence supporting water fluoridation

The existing body of evidence consistently shows that community water fluoridation reduces tooth decay.

This evidence comes from NHMRC's thorough review of the latest scientific research on the potential link between water fluoridation and human health relevant to Australia, and is detailed in the Supporting documents. The key findings of this review are as follows.

Tooth decay

NHMRC found that water fluoridation reduces tooth decay by 26% to 44% in children and adolescents, and by 27% in adults. Recent Australian research states that access to fluoridated water from an early age is associated with less tooth decay in adults.

Dental fluorosis

Dental fluorosis can affect the appearance of teeth, most commonly appearing as white lines or areas on tooth surfaces. It is caused by a high intake of fluoride from one or more sources during the time when teeth are developing.

Almost all dental fluorosis in Australia, however, is very mild or mild, does not affect the function of the teeth and is not of aesthetic concern to those who have it. Mild to very mild dental fluorosis has been associated with a protective benefit against tooth decay in adult teeth.[2] Moderate dental fluorosis is very uncommon and severe dental fluorosis is rare in Australia[d]. The very small amount of moderate and severe dental fluorosis in Australian children aged 8-14 years is not statistically different between fluoridated and non-fluoridated areas, meaning there is no evidence that community water fluoridation at Australian levels gives rise to these forms of dental fluorosis.

In Australia dental fluorosis has declined, over a time when the extent of water fluoridation in Australia has expanded. The decline in dental fluorosis in Australia is linked to reduced exposure to fluoride from other sources such as toothpaste, due to the availability and promotion of low fluoride toothpastes for children and public health messages and guidelines about the appropriate use of these products (e.g. use only a small pea-sized amount; encourage children not to swallow toothpaste).[3,4,5]

Health outcomes

There is reliable evidence that community water fluoridation at current Australian levels is not associated with cancer, Down syndrome, cognitive dysfunction, lowered intelligence or hip fracture.

There is no reliable evidence of an association between community water fluoridation at current Australian levels and other human health conditions such as chronic kidney disease, kidney stones, hardening of the arteries (atherosclerosis), high blood pressure, low birth weight, all-cause mortality, musculoskeletal pain, osteoporosis, skeletal fluorosis, thyroid problems or self-reported ailments such as gastric discomfort, headache, and insomnia.

NHMRC's role in community water fluoridation

NHMRC is Australia's leading expert body fostering the development of consistent individual and public health standards between the states and territories. It is responsible for providing the Australian community with health advice based on the best available scientific evidence. The main ethical justification for fluoridating water is that it provides an important dental health benefit - reducing tooth decay - across the population. Additional benefits of water fluoridation include reducing infection, pain, avoidable treatment and other consequences of tooth decay.

NHMRC has publicly supported community water fluoridation as a population health measure since 1952. NHMRC publishes the *Australian Drinking Water Guidelines* which provide an authoritative reference to

c In some jurisdictions, the proportion of the population with access to fluoridated water is higher than the represented data. This is because some Australian drinking water supplies, particularly those relying on bore water, contain naturally occurring fluoride at a concentration of around 0.5 mg/L. It is recognised that this concentration offers some protection against tooth decay [WHO (2017): Guidelines for Drinking Water Quality, Fourth Edition. Geneva: World Health Organization (WHO) p372].

d Refer to the NHMRC *Information Paper - Water fluoridation: dental and other human health outcomes*, 2017 for rates of water fluoridation in Australia and the various grades (severity) of fluorosis.

the Australian community and the water supply industry on what defines safe, good quality drinking water, how it can be achieved and how it can be assured.

Community water fluoridation and infant formula in Australia

Infant formula products sold in Australia are safe to be fed to infants when made up with drinking water fluoridated at the levels used in Australia. All infant formula in Australia must comply with the composition and safety requirements of the *Australia New Zealand Food Standards Code*.[6]

NHMRC recommends exclusive breast feeding until around six months of age. However, this is not always possible and, for infants who are not breastfed or who are partially breastfed, NHMRC recommends that infant formula be used as an alternative until 12 months of age.

Use of fluoride tablets or supplements in Australia

Fluoride supplements in the form of drops or tablets should only be used on the advice of an oral health professional.[5] They are no longer readily available in Australia.

Supporting documents

National Health and Medical Research Council (NHMRC). *Information Paper - Water Fluoridation: Dental and Other Human Health Outcomes.* Report prepared by the Clinical Trials Centre at University of Sydney. Canberra: NHMRC, 2017. <https://www.nhmrc.gov.au/health-topics/health-effects-water-fluoridation>

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Other useful resources

Water Fluoridation and Human Health in Australia: Questions and Answers. Canberra: NHMRC, 2017. <https://www.nhmrc.gov.au/health-topics/health-effects-water-fluoridation>

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Some useful references

1 Food Standards Australia New Zealand. Australia New Zealand Food Standards Code - Standard 2.6.2 - Non-alcoholic beverages and brewed soft drinks. 2016 [updated 2016]; Available from: https://www.legislation.gov.au/Details/F2016C00175.

2 Do LG, Spencer AJ, Ha DH. Association between dental caries and fluorosis among South Australian children. Caries Research, 2009; 43:366-73.

3 Spencer AJ, Do LG. Changing risk factors for fluorosis among South Australian children. Community Dentistry and Oral Epidemiology, 2008; 36(3):210-8.

4 Do LG, Spencer AJ. Decline in the prevalence of dental fluorosis among South Australian Children. Community Dentistry and Oral Epidemiology. 2007; 35(4):282-91.

5 Australian Research Centre for Population Oral Health. The use of fluorides in Australia: guidelines. Australian Dental Journal. 2006; 51: 195-9. <https://www.adelaide.edu.au/arcpoh/downloads/publications/journal/2006-spencer-aj.pdf>

6 Food Standards Australia New Zealand (FSANZ). Australia New Zealand Food Standards Code – Standard 2.9.1 – Infant formula products (revised March 2016). Canberra: FSANZ, 13 April 2017 <http://www.foodstandards.gov.au/code/Pages/default.aspx>

Australian Government
National Health and Medical Research Council

NHMRC

Water Fluoridation and Human Health in Australia: Questions and Answers

WORKING TO BUILD A HEALTHY AUSTRALIA

Australian Government

Department of Health and Ageing

National Health and
Medical Research Council

WATER FLUORIDATION AND HUMAN HEALTH IN AUSTRALIA: QUESTIONS AND ANSWERS

NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL

These Questions and Answers have been developed by the National Health and Medical Research Council (NHMRC) in consultation with the jurisdictional health departments. They aim to provide helpful information to support the *NHMRC Public Statement 2017: Water fluoridation and human health in Australia*.

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ABOUT WATER FLUORIDATION

1. WHY DRINK FLUORIDATED WATER?

There is consistent and reliable evidence that community water fluoridation helps to reduce tooth decay. The National Health and Medical Research Council (NHMRC) found that water fluoridation reduces tooth decay by 26 to 44% in children and adolescents, and by about 27% in adults (1). Recent Australian research suggests that access to fluoridated water from an early age is associated with less tooth decay in adults (1).

The consequences of tooth decay are costly due to time off school and work, and the costs of dental treatment. Tooth decay also leads to pain and can cause concerns about appearance. In Australia, community water fluoridation programs are considered a safe, ethical and effective way of reducing tooth decay across the population. Fluoridated water helps reduce tooth decay in all members of society, at all stages of life. This includes those who have less access to dental care and other measures that protect the teeth from decay.

2. WHAT IS FLUORIDE?

Fluoride (F-) is a chemical ion of the element fluorine (F) and is part of the earth's crust (2). It is a naturally occurring component of mineral salts found in rocks, soil, natural water sources, plants and animals. The amount of fluoride naturally occurring in water depends on the type of soil and rock through which the water drains. If rock formations are fluoride-rich, the amount of fluoride that can dissolve out of the rock as water passes over them is greater (2).

3. WHAT IS WATER FLUORIDATION?

Water fluoridation is the process of adjusting the amount of fluoride in drinking water to an optimal level to help reduce tooth decay. NHMRC supports Australian states and territories fluoridating their drinking water supplies within the range of 0.6 to 1.1 milligrams of fluoride per litre (mg/L) (3).

4. WHO BENEFITS FROM COMMUNITY WATER FLUORIDATION?

Community water fluoridation allows everybody to benefit from the protective effect of fluoride, without individuals having to make a conscious effort to change their behaviours (4). It benefits people of all ages throughout their life regardless of education, income or access to dental care (4, 5).

Tooth decay can develop at any age, so water fluoridation is an important way of reducing tooth decay in children and adults (6). Fluoridation of drinking water particularly benefits children, and those on a lower income who tend to have higher rates of tooth decay and less access to dental treatment and other forms of fluoride.

5. WHERE IS COMMUNITY WATER FLUORIDATION PRACTISED?

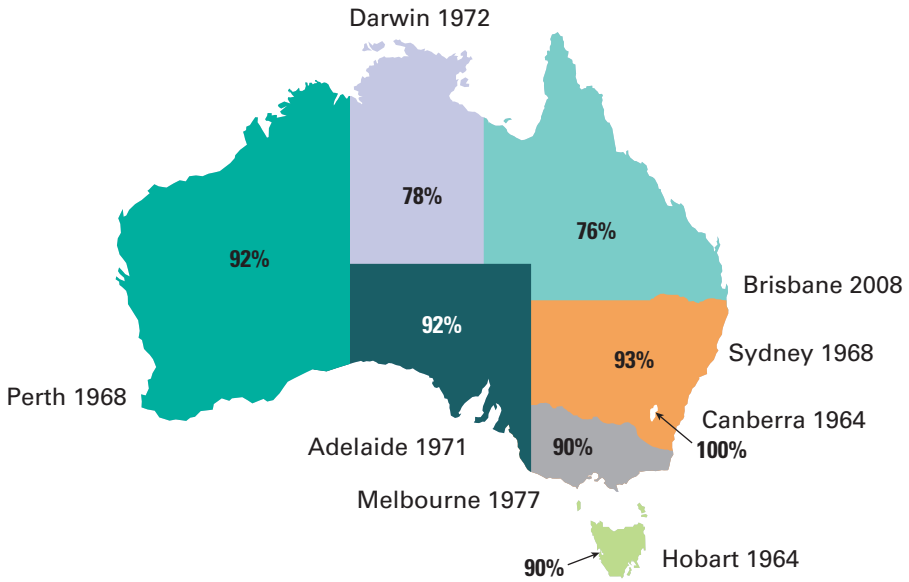
More than 400 million people around the world benefit from fluoridated drinking water – approximately 370 million accessing community water fluoridation schemes and about 50 million drinking naturally occurring optimal levels of fluoridated water (7). Countries with or planning to implement water fluoridation schemes include New Zealand, the United States, Canada, the United Kingdom, Ireland, Spain, Israel, Brazil, Chile, Argentina, Hong Kong, South Korea, Singapore and Malaysia (7). Many countries also use salt fluoridation schemes.

In Australia, the first community water fluoridation program began in 1953 in Beaconsfield, Tasmania (8) followed by Yass, New South Wales in 1956 (9). Most large Australian cities have fluoridated their water since the 1960s and 1970s.

6. HOW MANY AUSTRALIANS HAVE ACCESS TO FLUORIDATED DRINKING WATER SUPPLIES?

As of February 2017, 89 percent of Australians have access to fluoridated drinking water (10), which includes those areas with naturally occurring fluoride at a concentration of 0.5 mg/L and above (11). All Australian states and territories have fluoridated drinking water; however coverage in each jurisdiction varies (see Figure 1).[a]

FIGURE 1: PERCENTAGE OF POPULATION WITH ACCESS TO FLUORIDATED WATER AS AT FEBRUARY 2017 AND DATES OF INTRODUCTION OF WATER FLUORIDATION TO AUSTRALIAN CAPITAL CITIES (BASED ON: HEALTHY MOUTHS HEALTHY LIVES: AUSTRALIA'S NATIONAL ORAL HEALTH PLAN 2015 – 2024, UPDATED WITH JURISDICTION STATISTICS)



7. IS COMMUNITY WATER FLUORIDATION A COST EFFECTIVE PUBLIC HEALTH POLICY?

Fluoridating water in Australia is a population-wide investment. In Australia, for every dollar that is spent on fluoridation, between $7 and $18 is saved due to avoided treatment costs (12-14).

Studies have reported that following the introduction of water fluoridation in Victoria, the community saved about $1 billion over a 25 year period through avoided costs from dental treatment and days absent from work/school (15).

8. WHAT ROLE DOES COMMUNITY WATER FLUORIDATION PLAY IN AUSTRALIA'S NATIONAL ORAL HEALTH PLAN?

Australia has a national oral health plan that has been endorsed by all state and territory governments and the Australian Government. The purpose of *Healthy Mouths Healthy Lives: Australia's National Oral Health Plan 2015–2024* is to improve health and wellbeing across the Australian population by improving oral health status and reducing the burden of oral disease. The plan aims to help all Australians retain as many teeth as possible throughout their lives, have good oral health as part of good general health and have access to affordable and quality oral health services.

One of the plan's goals is to continue to extend water fluoridation of public water supplies. The plan reiterates the evidence that community water fluoridation is a safe, cost-effective and protective strategy that improves oral health by reducing tooth decay across the population.

a Some Australian drinking water supplies contain naturally occuring fluoride at a concentration of 0.5 mg/L. It is recognised that some protection against tooth decay can be derived from concentrations of 0.5mg/L and above.
[WHO (2017)]: Guidelines for Drinking Water Quality, Fourth Edition. Geneva: World Health Organization (WHO) p372.

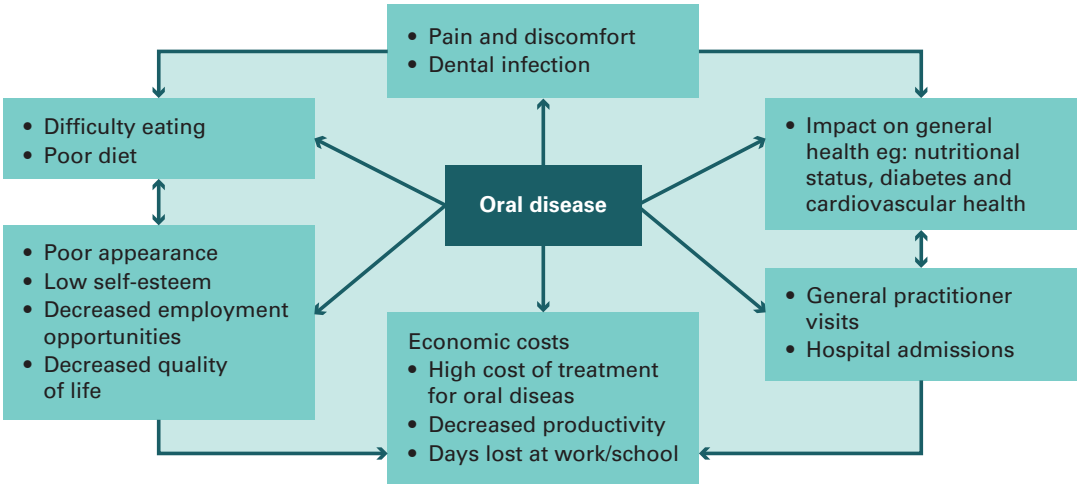
FLUORIDE AND ORAL HEALTH

9. WHY IS ORAL HEALTH IMPORTANT?

Oral health is important because it is fundamental to overall health, wellbeing and quality of life (11). A healthy mouth enables people to eat, speak and socialise without pain, discomfort or embarrassment (11).

Figure 2 shows the links between oral health and general health, as well as some of the social and economic implications of oral disease.

FIGURE 2: THE LINKS BETWEEN ORAL AND GENERAL HEALTH AND SOCIAL/ ECONOMIC COSTS OF ORAL DISEASE



Adapted from *Australia's National Oral Health Plan 2015–2024*

10. WHAT IS TOOTH DECAY AND WHY IS IT A PROBLEM?

Tooth decay is the breakdown of the outer layers of teeth. It is caused by bacterial acids that are produced when bacteria in the mouth break down sugar in foods and drinks (16). The acid removes calcium and phosphates from the tooth structure (called demineralisation), leading eventually to cavities or holes in the teeth, as well as potentially pain, infection and tooth loss (16).

The consequences of tooth decay are costly due to time off school and work, the costs of dental treatment, and pain and suffering (11, 17). Once a tooth is filled, it becomes structurally weaker and will almost certainly require further treatment in the future (18).

If left untreated, tooth decay can have serious, potentially life-threatening consequences (19).

Tooth decay is one of the most common chronic health problems in Australia, particularly in children and communities with insufficient fluoride in their drinking water. Tooth decay still occurs in populations with access to fluoridated water; however, rates of decay are much lower in communities with water fluoridation. There is a consistent association between sugar intake and tooth decay (20).

The most commonly used measure of tooth decay is called the decayed, missing or filled teeth index (DMFT/ dmft index) (21). This is a measure of the number of teeth that are decayed, missing because of extraction or filled (21). Upper case lettering refers to permanent ('adult') teeth, while lower case lettering refers to primary ('baby') teeth (21). The DMFT index ranges from zero to 32, which is the maximum number of teeth in an adult; the dmft index ranges from zero to 20 (21).

11. HOW DOES FLUORIDE IN DRINKING WATER HELP TO REDUCE TOOTH DECAY?

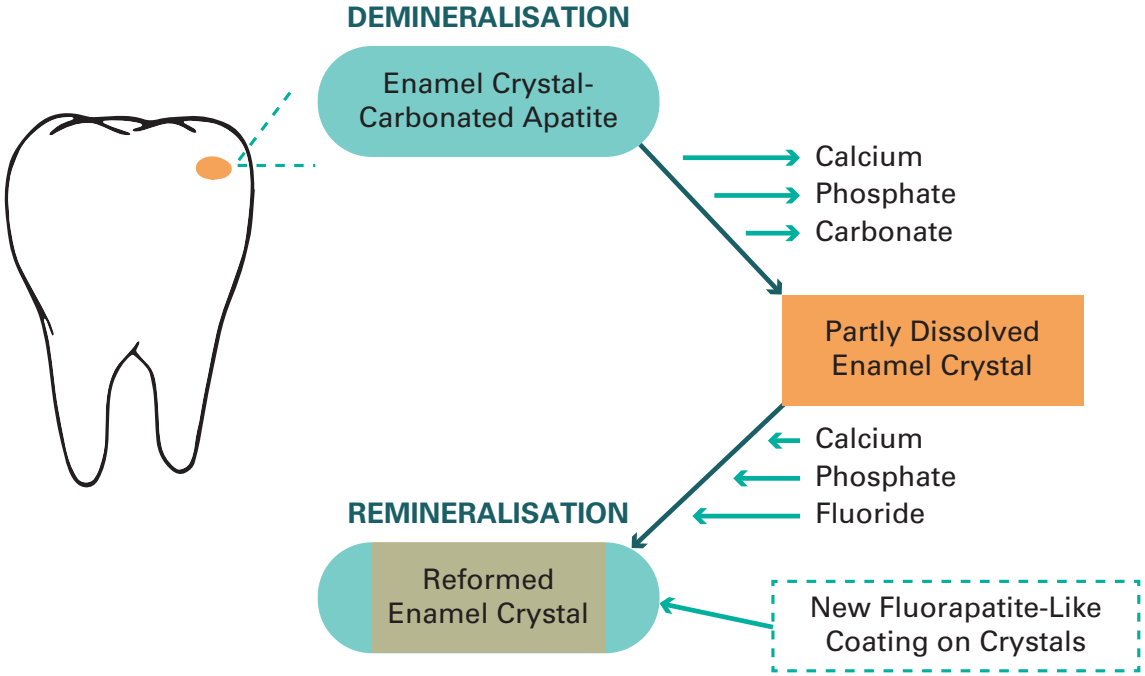
Fluoride in drinking water acts like a repair kit for teeth, working in a number of ways to strengthen teeth and make them more resistant to tooth decay for people of all ages (22).

There are two ways in which the fluoride in drinking water acts to reduce tooth decay:

- Reducing demineralisation (i.e. where the enamel begins to dissolve). This makes teeth more resistant to decay.
- Enhancing remineralisation (i.e. recovery of weakened enamel). This helps the repair of early tooth decay.

Fluoride also slows the activity of bacteria that cause decay and combines with enamel on the tooth surface to make it stronger and better able to resist decay (23, 2).

FIGURE 3: SCHEMATIC REPRESENTATION OF THE DEMINERALISATION AND REMINERALISATION PROCESSES WHICH LEAD TO REMINERALISED CRYSTALS WITH SURFACES RICH IN FLUORIDE AND OF LOW SOLUBILITY



Source: Adapted from Featherstone JDB (24). Reprinted with permission from Munksgaard International Publishers Ltd., Copenhagen, Denmark.

12. SHOULD I STILL USE FLUORIDATED TOOTHPASTE IF I AM DRINKING FLUORIDATED WATER?

Yes. Fluoridated drinking water and toothpaste with fluoride provide important and complementary benefits. Fluoridated water keeps low levels of fluoride in saliva and in dental plaque all day. The much higher concentration of fluoride in toothpaste offers additional benefit. Together, the two sources offer more protection than using either one alone.

For children aged between 18 months and under six years, it is recommended to use only a pea-sized amount of low-fluoride toothpaste and avoid fluoride mouth rinses.

13. WHAT IS DENTAL FLUOROSIS?

Dental fluorosis is caused by a high intake of fluoride from multiple sources during the time when teeth are developing inside the jawbone, usually from birth to six or eight years of age (2). It can appear as white lines or areas on the surface of both primary and permanent teeth and is identified after teeth erupt.

14. WHAT IS THE PATTERN OF DENTAL FLUOROSIS OCCURRENCE IN AUSTRALIA?

In Australia dental fluorosis has declined over the time period during which the extent of community water fluoridation has expanded (25-28). The decline in dental fluorosis is linked to reduced exposure to fluoride from other sources such as toothpaste, which is now available in low fluoride toothpastes for children. The use of low fluoride toothpaste is now actively promoted along with public health messages and guidelines about the appropriate use of these products (e.g. use only a small pea-sized amount; encourage children not to swallow toothpaste).

In Australia, where dental fluorosis has been identified, in most cases it is classified as very mild or mild. Mild to very mild dental fluorosis does not affect the function of the teeth, is not of aesthetic concern to those who have it and is associated with a protective benefit against tooth decay in adult teeth (1). Moderate dental fluorosis is very uncommon and severe dental fluorosis is rare in Australia. The very small amount of moderate and severe dental fluorosis in Australian children aged 8-14 years is not statistically different between fluoridated and non-fluoridated areas, meaning there is no evidence that community water fluoridation gives rise to these forms of dental fluorosis (1).

15. SHOULD I TAKE FLUORIDE SUPPLEMENTS?

Fluoride supplements in the form of drops or tablets should only be used on the advice of an oral health professional (4). They are no longer readily available in Australia.

THE SCIENTIFIC EVIDENCE SUPPORTING WATER FLUORIDATION

16. WHO REVIEWS SCIENTIFIC EVIDENCE RELEVANT TO AUSTRALIA?

NHMRC is Australia's leading expert body promoting the development and maintenance of public health and clinical standards. It is responsible for providing the Australian community with health advice based on the best available scientific evidence.

In 2014-2015, NHMRC conducted a comprehensive review of the latest scientific research on the health effects of water fluoridation relevant to Australia. This review identified and assessed new studies published between 2006 and 2015 to add to evidence identified in previous reviews [2000 McDonagh Review (29) and the 2007 NHMRC Review (21)].

Information about the recent review process is published in the 2016 Evidence Evaluation Report (6), Technical Report and Information Paper (1).

17. WHAT CONCLUSION DID NHMRC REACH IN ITS LATEST REVIEW OF THE EVIDENCE?

The conclusion reached by NHMRC is that the existing body of evidence consistently shows that water fluoridation safely reduces tooth decay. The findings from the latest review are summarised in the *Information Paper - Water fluoridation: dental and other human health outcomes, 2017.*

The NHMRC Public Statement 2017 (3) on water fluoridation and human health in Australia states:

> **NHMRC strongly recommends community water fluoridation as a safe, effective and ethical way to help reduce tooth decay across the population. NHMRC supports Australian states and territories fluoridating their drinking water supplies within the range of 0.6 to 1.1 milligrams per litre (mg/L).**

There is reliable evidence that community water fluoridation as practised in Australia is not associated with cancer, Down syndrome, cognitive dysfunction, lowered intelligence or hip fracture (1).

There is no reliable evidence of an association between community water fluoridation as practised in Australia and other human health conditions such as chronic kidney disease, kidney stones, hardening of the arteries (atherosclerosis), high blood pressure, low birth weight, all-cause mortality, musculoskeletal pain, osteoporosis, skeletal fluorosis, thyroid problems or other self-reported ailments such as gastric discomfort, headache, and insomnia (1).

The term 'no reliable evidence' is used by NHMRC when there is a lack of confidence that the evidence reviewed is relevant to Australia or valid to accept any association between community water fluoridation and human health outcomes. Confidence in the body of evidence can be affected by several issues including the small numbers of studies, the study designs, the low quality of the studies and the lack of control for possible confounding factors. Confounding factors can include lack of consideration of fluoride from other sources, socioeconomic status and exposure to other chemicals such as iodine or lead.

18. HOW DID NHMRC ASSURE QUALITY OF ITS REVIEW OF EVIDENCE?

NHMRC takes care to ensure that its health advice, and the evidence it is based on, are of the highest possible quality. When reviewing evidence such as described in NHMRC's 2016 Evidence Evaluation Report (6), bias can occur when more attention is given to research studies supporting a particular view. Seeking or interpreting evidence in ways that support existing beliefs is referred to as confirmation bias (30). NHMRC addressed this type of bias by contracting the Clinical Trials Centre, University of Sydney, to identify and assess the available evidence. This was done using internationally recognised systematic review methods and having an independent group with expertise in the methodologies for evidence evaluation review the methods used by the Clinical Trials Centre.

Bias in research can also come from poorly designed studies, or from problems in the collection, analysis, reporting, publication or review of study data. This type of bias, referred to as research bias, can lead to invalid results (31). Where research bias was of concern in any of the included studies, it was noted in the NHMRC 2016 Evidence Evaluation Report (6) and the NHMRC Information Paper (1).

NHMRC sought feedback from experts on the research methods of the Evidence Evaluation and how the evidence was translated into the Information Paper. Feedback was also sought from independent external experts and the public.

19. WHAT DOES THE LATEST EVIDENCE SAY ABOUT WHETHER SOME PARTICULAR HEALTH EFFECTS OF COMMUNITY CONCERN ARE RELATED TO WATER FLUORIDATION?

NHMRC searched for evidence reporting any possible human health outcomes of water fluoridation. Those health effects which are of particular interest to the community are discussed in more detail below.

A. CANCER

There is no association between community water fluoridation and any form of cancer, including osteosarcoma and Ewing sarcoma (types of bone cancer) (1).

B. COGNITIVE FUNCTION AND INTELLIGENCE

There is no association between community water fluoridation as practised in Australia and cognitive function or intelligence of children and adults.

While some overseas studies suggested a possible link, these studies took place in countries where fluoride levels greatly exceed the levels seen in Australia and did not take into account factors such as parental education and the presence of arsenic in drinking water (1).

C. KIDNEY HEALTH

There is no reliable evidence of an association between community water fluoridation as practised in Australia and kidney stones or chronic kidney disease (1).

Kidney Health Australia state that there is no evidence that consumption of optimally fluoridated water causes chronic kidney disease or poses any risks for people with established chronic kidney disease.

D. MUSCLE AND SKELETAL HEALTH

There is no association between community water fluoridation as practised in Australia and hip fracture (1).

There is no reliable evidence of an association between community water fluoridation as practised in Australia and skeletal fluorosis, osteoporosis or musculoskeletal pain (1).

E. THYROID HEALTH

There is no reliable evidence of a link between community water fluoridation as practised in Australia and thyroid function, including goitre (enlargement of the thyroid gland) and hypothyroidism (underactive thyroid) (1).

Other possible health effects were considered by the NHMRC review and published in the Information Paper. Some of the findings are summarised in the answer to Question 17.

20. IS COMMUNITY WATER FLUORIDATION SUPPORTED BY HEALTH AND SCIENTIFIC AUTHORITIES AROUND THE WORLD?

Fluoridation of drinking water is supported by a range of national and international health research agencies and government bodies including:

- All Australian State Government health agencies
- Council of Australian Governments Health Council via "Healthy Mouths Healthy Lives - Australia's National Oral Health Plan 2015-2024" (refer to Q8).
- National Health and Medical Research Council (Australia)
- Australian Dental Association
- World Health Organization
- International Association for Dental Research
- Centres for Disease Control and Prevention (USA)
- US Surgeon General
- Harvard Medical School
- Harvard School of Dental Medicine
- Harvard School of Public Health
- Australian Medical Association
- Australian and New Zealand Society for Paediatric Dentistry
- Australasian Academy of Paediatric Dentistry
- Australian Academy of Science
- Australian Centre for Human Health Risk Assessment
- Australian Research Centre for Population Oral Health (ARCPOH)
- Public Health Association of Australia
- Alzheimer's Australia
- Kidney Health Australia
- Royal Society of New Zealand and the Office of the Prime Minister's Chief Science Advisor
- Ministry of Health New Zealand
- US Environmental Protection Agency
- US Department of Health and Human Services
- Health Research Board, Ireland
- National Cancer Institute (USA)

21. HAS SCIENTIFIC EVIDENCE ON COMMUNITY WATER FLUORIDATION BEEN REVIEWED ELSEWHERE AND WHAT HAVE THE REVIEWS CONCLUDED?

The science underpinning community water fluoridation and indeed the use of fluorides generally for preventing tooth decay is reviewed periodically worldwide. In all cases the conclusions support the ongoing continuation of community water fluoridation initiatives.

The 2015 New Zealand review found compelling evidence that fluoridation of water at the established and recommended levels produced broad benefits for the dental health of New Zealanders (32).

The 2015 United States Public Health Service review found that community water fluoridation remains an effective public health strategy for delivering fluoride to prevent tooth decay and is the most feasible and cost-effective strategy for reaching entire communities (33).

The 2015 Ireland review found that, in community water fluoridated areas, there is no strong evidence that community water fluoridation is definitively associated with negative health effects. However, the evidence base examining the association between health effects and community water fluoridation is limited (34).

22. HOW WILL NHMRC KEEP UP TO DATE ON ANY NEW EVIDENCE ON WATER FLUORIDATION AND HUMAN HEALTH?

The NHMRC is responsible for providing current and evidence-based advice on health. To do this, NHMRC monitors any new evidence, in particular any significant new body of evidence, including its quality and how applicable it is to Australian conditions. This is done in consultation with state and territory representatives working in the field of drinking water and human health, and any NHMRC expert committee that advises on the NHMRC *Australian Drinking Water Guidelines*. Additionally, the Council of NHMRC considers guidelines and advice 5 years after publication and recommends to the NHMRC Chief Executive Officer if there is a need to update the publication, based on any new body of evidence.

FLUORIDE AND DRINKING WATER

23. WHERE DOES THE FLUORIDE THAT IS ADDED TO DRINKING WATER COME FROM?

The fluoride compounds used to fluoridate water are derived from a mineral rock called fluorapatite ($Ca_5(PO_4)_3F$) (2). Commonly used as source material for the fertiliser industry, when phosphate is removed, an extra step in the refining process may be taken to collect fluoride gas (35, 36). This gas can be converted into a liquid or powder form for the specific purpose of adding to water supplies (36). Fluoride is a by-product, not a waste product, of this process (37).

24. WHAT FLUORIDE COMPOUNDS ARE ADDED TO DRINKING WATER?

There are three fluoride-releasing compounds recommended in the *Australian Drinking Water Guidelines* for use in fluoridating water. These recommended fluoridating compounds are sodium fluoride (NaF: a compound of fluorine and sodium); sodium fluorosilicate (Na_2SiF_6: a compound of fluorine, sodium and silicon); and fluorosilicic acid (H_2SiF_6: a compound of fluorine, hydrogen and silicon).

Table 1 summarises these compounds, their chemical formulae, alternative names and physical forms. The type of compound selected is based on the type and size of the water treatment plant.

TABLE 1: FLUORIDE COMPOUNDS USED IN COMMUNITY WATER FLUORIDATION PROGRAMS

COMPOUND NAME	CHEMICAL FORMULA	ALTERNATIVE NAMES	PHYSICAL FORM
Hydrofluorosilicic acid	H_2SiF_6	Hexafluorosilicic acid Hydrofluosilicic acid Fluorosilicic acid	Liquid
Sodium fluorosilicate	Na_2SiF_6	Sodium hexafluorosilicate Disodium hexafluorosilicate Sodium silicofluoride	Powder
Sodium fluoride	NaF		Powder

Adapted from Australian Drinking Water Guidelines, Chapter 8 (38)

25. HOW ARE PURITY STANDARDS MAINTAINED FOR FLUORIDE COMPOUNDS ADDED TO DRINKING WATER?

Procedures have been established to ensure that impurities present in chemicals added to drinking water supplies do not represent a risk to public health. The *Australian Drinking Water Guidelines* recommends exacting requirements regarding maximum levels of impurities for all chemicals added to drinking water supplies (38). All additives used to treat drinking water (including disinfectant, and other water treatment substances) contain low levels of impurities (28). It is also important to note that water itself naturally contains dissolved or suspended impurities – hence the reliance upon the *Australian Drinking Water Guidelines* (38, 39).

Water utilities ensure that any impurities in fluoride chemicals do not pose a risk to public health. The *Australian Drinking Water Guidelines* recommends that chemicals added to drinking water cannot add more than 10% of the maximum safe value when the chemical is added. Commercially available fluoridation chemicals consistently meet this requirement.

State and Territory regulations usually specify that all chemicals added to drinking water have to be accompanied by test certificates detailing the strength of the active ingredient and concentrations of impurities (38). No chemical is to be accepted or used without a batch analysis certificate showing that all quality requirements have been met (38).

26. HOW ARE FLUORIDE COMPOUNDS ADDED TO THE WATER SUPPLY?

State and territory water authorities add fluoride to community water supplies using strict controls that are typically set out in legislation or Codes of Practice. This includes controls on the quality and purity of chemicals used in accordance with the Australian Drinking Water Guidelines (38).

Fluoride is added to water at drinking water treatment plants, which have been designed to add carefully controlled amounts (40). Safety at the water treatment plant is maintained by a risk management, multi-barrier approach. Equipment is designed to shut down if fluoride exceeds predetermined levels at key points in the water treatment system. The fluoride level in the water is at least monitored daily and in most cases continuously (40). Samples of water are taken from sites in the distribution system to esnure adequate fluoride levels 'at the tap' (40).

In all cases the compounds containing fluoride that are added to water supplies at a treatment plant dissolve into their components well before the water leaves the treatment plant. This means that in a glass of drinking water, there is no difference between fluoride ions that are present naturally or fluoride ions from compounds added as part of a community water fluoridation scheme.

27. HOW MUCH FLUORIDE IS RECOMMENDED IN DRINKING WATER?

To help protect teeth against tooth decay, only a very small amount of fluoride is needed in drinking water. NHMRC supports adjusting fluoride in Australian drinking water supplies to between 0.6 and 1.1 mg/L to be the most effective way to reduce tooth decay (3). This range of 0.6 and 1.1 mg/L is aimed at reducing tooth decay, while avoiding any risk of dental fluorosis of aesthetic concern.

28. DOES FLUORIDE AFFECT THE TASTE OF WATER?

Fluoride has no taste or smell, so water fluoridation will not affect the taste or smell of drinking water.

29. DO HOUSEHOLD FILTERS REMOVE FLUORIDE FROM DRINKING WATER?

The optimum fluoride level in public drinking water supplies is a safe and effective way of helping to protect teeth against dental decay, and it is not necessary or desirable to remove the fluoride.

Distillers and filtering systems containing ion exchange resins, activated aluminium or reverse-osmosis membranes have been shown to be effective and will remove most of the fluoride from water.

More information about removing fluoride from water can be obtained from a professional water treatment company.

30. IS BOTTLED WATER FLUORIDATED?

In most cases, the answer is no, although some bottled water products contain naturally occurring fluoride from the source. Australian food regulations allow the addition of fluoride to bottled water within the permitted range of 0.6 – 1 mg/L. As with all packaged food in Australia bottled water must be clearly labelled and state the product contents.

FLUORIDE AND DIET

31. IS FLUORIDE A NUTRIENT?

Yes. In 2006 and updated in 2017, the National Health and Medical Research Council, the Australian Government Department of Health and the New Zealand Ministry of Health included fluoride as a 'nutrient' in its *Nutrient reference values for Australia and New Zealand including recommended dietary intakes* (41, 42). This document states:

> Because of its role in the prevention of dental caries [decay], fluoride has been classified as essential to human health.

32. DOES FLUORIDATED TAP WATER CAUSE ALLERGIES?

There is no link between community water fluoridation as practised in Australia and allergic reactions or allergy like symptoms.

According to medical specialists from the Department of Allergy, Immunology and Respiratory Medicine at The Alfred Hospital in Melbourne, no clinical or scientific evidence exists to confirm fluoride at current Australian levels causes allergies or affects immunity (43). Specifically, they state:

> ... during the last 25 years, whether in Melbourne or in the UK, we have never seen a patient with any respiratory symptoms nor any allergy-like symptoms that could be attributed to fluoride 1ppm [1 mg/L] as in our fluoridated water (43).

33. HOW MUCH FLUORIDE DO WE NEED?

The *NHMRC Nutrient reference values for Australia and New Zealand: including recommended dietary intakes: Fluoride* (updated 2017) states that the Adequate Intake level of fluoride for the average adult male and female is 4.0 milligrams per day and 3.0 milligrams per day, respectively. The Adequate Intake in children varies by age (due to different body weights), ranging from 0.5 milligrams per day in 7 to 12 month olds, to 1.1 milligrams per day in children aged 4 to 8 years (42). This amount helps to minimise tooth decay in children, adolescents and adults, and can be obtained by drinking fluoridated water and consuming foods with fluoride in them.

34. WHAT FOODS AND DRINKS CONTAIN FLUORIDE?

Most foodstuffs contain traces of fluoride (2, 44). Higher amounts of fluoride can be found in dried tea leaves, for example, because of natural concentration by the tea plant (44). Other common sources of fluoride include cereal and grain based foods, almonds, apples, minced beef, chocolate and milk (45).

35. CAN DRINKING FLUORIDATED TAP WATER RESULT IN THE CONSUMPTION OF TOO MUCH FLUORIDE?

No. NHMRC found no evidence that community water fluoridation at current Australian levels causes human health problems. To help protect teeth against tooth decay, only very small amounts of fluoride are needed in water (46). NHMRC supports Australian states and territories fluoridating their drinking water supplies within the range of 0.6 to 1.1 mg/L.

The *NHMRC Nutrient Reference Values for Australia and New Zealand* identifies 10 milligrams per day as the upper level of fluoride intake for an average-sized adult (41). To meet or exceed this level of intake means drinking at least 10 litres per day of water with fluoride at current Australian levels. However, regardless of any fluoride content in the water, this is a dangerously high level of water intake and is not recommended (47) because of the risk of water overloading, even for people such as athletes, outdoor workers, military personnel and those living in hot and humid climates, who may approach this level of consumption occasionally.

People with specialised needs, such as renal dialysis patients, should follow the advice of their medical professionals based on their particular circumstances, which may include a wide variety of factors such as diet, body mass, history and other more significant ions in the water such as potassium, sodium or chloride. In no case would the level of fluoride in fluoridated water be the limiting factor in the amount of water that could be safely consumed.

36. WHAT IS THE ADVICE PROVIDED FOR INFANT FORMULA RE-CONSTITUTED WITH FLUORIDATED WATER?

Infant formula products sold in Australia are safe to feed to infants when made up with fluoridated drinking water.

NHMRC recommends exclusive breast feeding until around six months of age. However, this is not always possible and, for infants who are not breastfed or who are partially breastfed, NHMRC recommends that infant formula be used as an alternative until 12 months of age. All infant formula in Australia must comply with the composition and safety requirements of the *Australia New Zealand Food Standards Code (revised 1 March 2016)* (48).

37. WHAT ADVICE IS PROVIDED ABOUT DRINKING FLUORIDATED WATER FOR PREGNANT OR BREAST FEEDING MOTHERS?

It is safe for the unborn child and infant when pregnant and breast feeding mothers drink water fluoridated at Australian levels. Breast milk naturally contains about 5–10 µg (micrograms) of fluoride per litre of milk (2). The level of fluoride in breast milk remains steady when a nursing mother drinks fluoridated water (49).

38. DOES RAINWATER TANK WATER CONTAIN FLUORIDE?

Rainwater collected in domestic tanks will not contain fluoride. It is not recommended that tank water be fluoridated as it can be difficult to maintain the correct concentration. People relying on tank water for drinking and food preparation should seek advice concerning fluoride requirements from their local dental professional, school dental service, community dental service or from the Australian Dental Association.

People using rainwater for drinking and food preparation will gain some dental benefits when they consume food and beverage products processed in nearby fluoridated centres or work and study in fluoridated areas. Another source of fluoridated water for people who rely on rainwater tanks for drinking and food preparation is packaged (bottled) water with added fluoride (50).

39. IS FLUORIDATED DRINKING WATER CONSIDERED A DRUG OR MEDICATION?

No. In Australia, the Therapeutic Goods Administration (TGA) does not require fluoride compounds, such as those added to fluoride toothpaste and to community drinking water supplies, to be registered as medicines if they are used for the prevention of dental decay - nor are they scheduled as drugs or poisons when they are added to community drinking water supplies at optimal levels.

Fluoridated drinking water is thus not considered to be a therapeutic drug or medicine by the TGA in Australia, or by comparable therapeutic goods regulators in any other country where water is fluoridated. Fluoride is a natural component of most water supplies. The TGA is the Australian regulator responsible for making sure that therapeutic goods used to prevent or manage health conditions in Australia are safe and of good quality.

FLUORIDE AND ETHICS

40. IS IT ETHICAL TO FLUORIDATE WATER?

NHMRC considers that it is ethical to fluoridate water. The 2017 *NHMRC Information Paper – Water fluoridation: dental and other human health outcomes* states that water fluoridation is ethical because it provides an oral health benefit by reducing tooth decay in people of all ages and social groups (1).

Furthermore the Centre for Social Ethics and Policy, University of Manchester states:

> *In considering the ethics of fluoridation … we should ask not are we entitled to impose fluoridation on unwilling people, but are the unwilling people entitled to impose the risks, damage and costs of failure to fluoridate on the community at large* (51)

Community water fluoridation is also consistent with the Report of the International Bioethics Committee of UNESCO on Consent (2008) (52).

41. IS INDIVIDUAL CONSENT REQUIRED FOR WATER FLUORIDATION?

No. Governments and health professionals have a responsibility to make decisions that balance the best possible community health outcomes with individual choice. Decisions relating to community water fluoridation are made at state and/or local government level by representatives who are responsible directly or indirectly to the people. Many Government decisions impact on individual choice to some extent.

People are free to choose whether or not to drink fluoridated water supplied to them, as they please. Some effort and expense is required to avoid fluoridated water by the use of bottled water, the provision of rainwater tanks, or the installation of specifically designed filters. But in the absence of community water fluoridation, great effort and expense is required of those who wish to provide the protective benefits of fluoride for themselves and their children. A greater effort is required to 'opt in' to access fluoride if there is no community water fluoridation, than to 'opt out' of community water fluoridation. In Australia, the large majority of the public support water fluoridation (1). From a social equity perspective, water fluoridation protects a whole community including those who might be less likely to adopt preventive dental behaviours or who struggle to pay for dental care.

42. IS COMMUNITY WATER FLUORIDATION CONSTITUTIONAL?

Yes. The Australian Constitution allows state governments to pass legislation to protect and enhance public health (53).

Section 51(xxiiiA) of the Commonwealth Constitution is a provision giving the Commonwealth Parliament the power to make laws for, amongst other things, "the provision of dental services (but not so as to authorise any form of civil conscription)." The bracketed words prevent the Commonwealth from conscripting dentists and other oral health professionals to provide dental services in peace time.

The provision of fluoridated water to communities is not a dental service within the meaning of the above provision of the Constitution, nor are members of fluoridated communities "conscripted" to receive a dental service.

FLUORIDE REGULATIONS

43. HOW IS COMMUNITY WATER FLUORIDATION IN AUSTRALIA REGULATED?

In every Australian state or territory, community water fluoridation is regulated by an Act of Parliament or government policy.

Table 2 lists the current regulatory frameworks used in each Australian state and territory.

TABLE 2 STATE AND TERRITORY FLUORIDE LEGISLATION AND REGULATIONS

Australian Capital Territory	Licensed condition issued under the *Public Health Act 1997* http://www.legislation.act.gov.au/a/1997-69/ Clause 36 of the *Utilities (Technical Regulation) Act 2014* http://www.legislation.act.gov.au/a/2014-60/
New South Wales	*Fluoridation of Public Water Supplies Act 1957* *Fluoridation of Public Water Supplies Regulation 2017* *NSW Code of Practice for Fluoridation of Public Water Supplies* http://www.health.nsw.gov.au/environment/water/Pages/fluoridation.aspx
Northern Territory	The Use of Fluorides in the Northern Territory – position statement 2010 http://www.health.nt.gov.au/Oral_Health/Water_Fluoridation/index.aspx
Queensland	*Water Fluoridation Act 2008 (current as at 1 November 2013)* https://www.legislation.qld.gov.au/LEGISLTN/CURRENT/W/WatrFluorA08.pdf *Water Fluoridation Regulation 2008 (current as at 21 December 2012)* https://www.legislation.qld.gov.au/LEGISLTN/CURRENT/W/WatrFluorR08.pdf *Water Fluoridation Code of Practice (revised September 2013)* https://www.health.qld.gov.au/public-health/industry-environment/environment-land-water/water/fluoridation/default.asp
South Australia	Water fluoridation is implemented by SA Water as a matter of Government policy and maintained by Ministerial direction under the *Public Corporations Act.*
Tasmania	*Fluoridation Act 1968* http://www.thelaw.tas.gov.au/tocview/content.w3p;doc_id=87++1968+AT@EN+20111005000000;rec=0 *Fluoridation (Interim) Regulations 2009* http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=ALL;doc_id=%2B14%2B2009%2BAT%40EN%2B20160817150000;histon=;pdfauthverid=;prompt=;rec=;rtfauthverid=;term=fluoride;web)authverid= *Tasmanian Code of Practice for the Fluoridation of Public Water Supplies (2017)* www.dhhs.tas.gov.au/publichealth/water/drinking/mains/fluoride
Victoria	*Health (Fluoridation) Act 1973* *Code of practice for fluoridation of drinking water supplies 2009* https://www2.health.vic.gov.au/public-health/water/water-fluoridation/water-fluoridation-legislation
Western Australia	*Fluoridation of Public Water Supplies Act 1966* https://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_348_homepage.html

FLUORIDE AND THE ENVIRONMENT

44. HOW DOES FLUORIDATED WATER AFFECT THE ENVIRONMENT?

In the marine environment, the naturally occurring background level of fluoride in sea water is around 1.4 mg/L, which is greater than the fluoride level in fluoridated drinking water supply systems in Australia.

The New Zealand Public Health Commission reported on the impact of fluoridated water on the environment in 1994. This study found that:

> "Given the distribution of fluoride in most ecosystems, it would seem very unlikely that any hazard to the environment exists at a water fluoridation level of 1ppm [1 mg/L]" (54).

There is insignificant risk to the environment from fluoridated drinking water being discharged directly to a waterway.

45. CAN FLUORIDATED WATER BE USED IN ORGANIC FARMING?

Yes. Water fluoridation does not impact on the ability of organic producers to obtain or retain organic certification for their produce (55). Under the Australian Certified Organic Standard, all drinking water is permitted as a conventional (non-certified) ingredient (56).

46. CAN FLUORIDATED WATER BE USED IN AQUAPONICS?

Yes. Fluoridated water can be used in aquaponics systems. All natural water systems contain some level of fluoride with some parts of Australia having naturally occurring fluoride at levels similar to the level used in community water fluoridation programs. As fluoride is found in all water supplies, plants, fish, animals and other organisms can metabolise fluoride. This metabolism ensures the fluoride level remains relatively constant, although some variation can be expected – as also occurs in natural water systems.

FURTHER READING

The National Child Oral Health Study undertaken between 2012 and 2014 was a cross-sectional study of the child population aged five to 14 years in Australia:

> Do LG and Spencer AJ (eds), 2016. Oral health of Australian children: the National Child Oral Health Study 2012–14. Adelaide: University of Adelaide Press.

In 2008 the Australian Research Centre for Population Oral Health presented the results of a study that examined the effectiveness of water fluoridation on children's dental health across four Australian states: Queensland, Victoria, Tasmania and South Australia:

> Armfield J, Spencer A, Roberts-Thomson K and Slade G, 2008. 'Lifetime exposure to water fluoridation and child caries experience.' Presented at the 86th General Session and Exhibition of the International Association for Dental Research. Toronto, Canada.

The Australian Institute of Health and Welfare report, *Australia's dental generations: the National Survey of Adult Oral Health,* describes the beneficial effects of water fluoridation in young children and adults up to 97 years of age.

> Australian Institute of Health and Welfare, 2007. Australia's dental generations: the National Survey of Adult Oral Health 2004–06. Canberra: AIHW.

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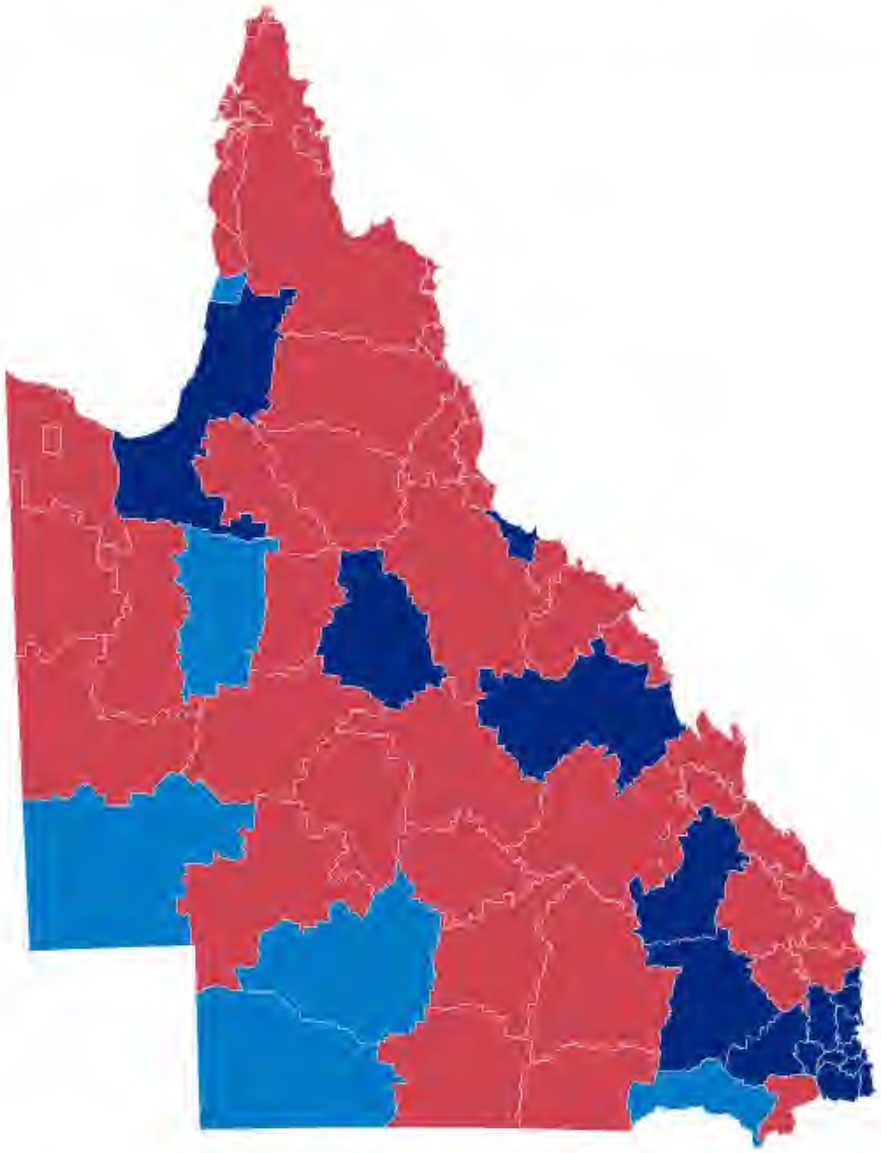
53 out of 77 Queensland councils do not have fluoridated water

Fluoridated water supply | Naturally occurring elevated fluoride level water supply | No fluoridated water



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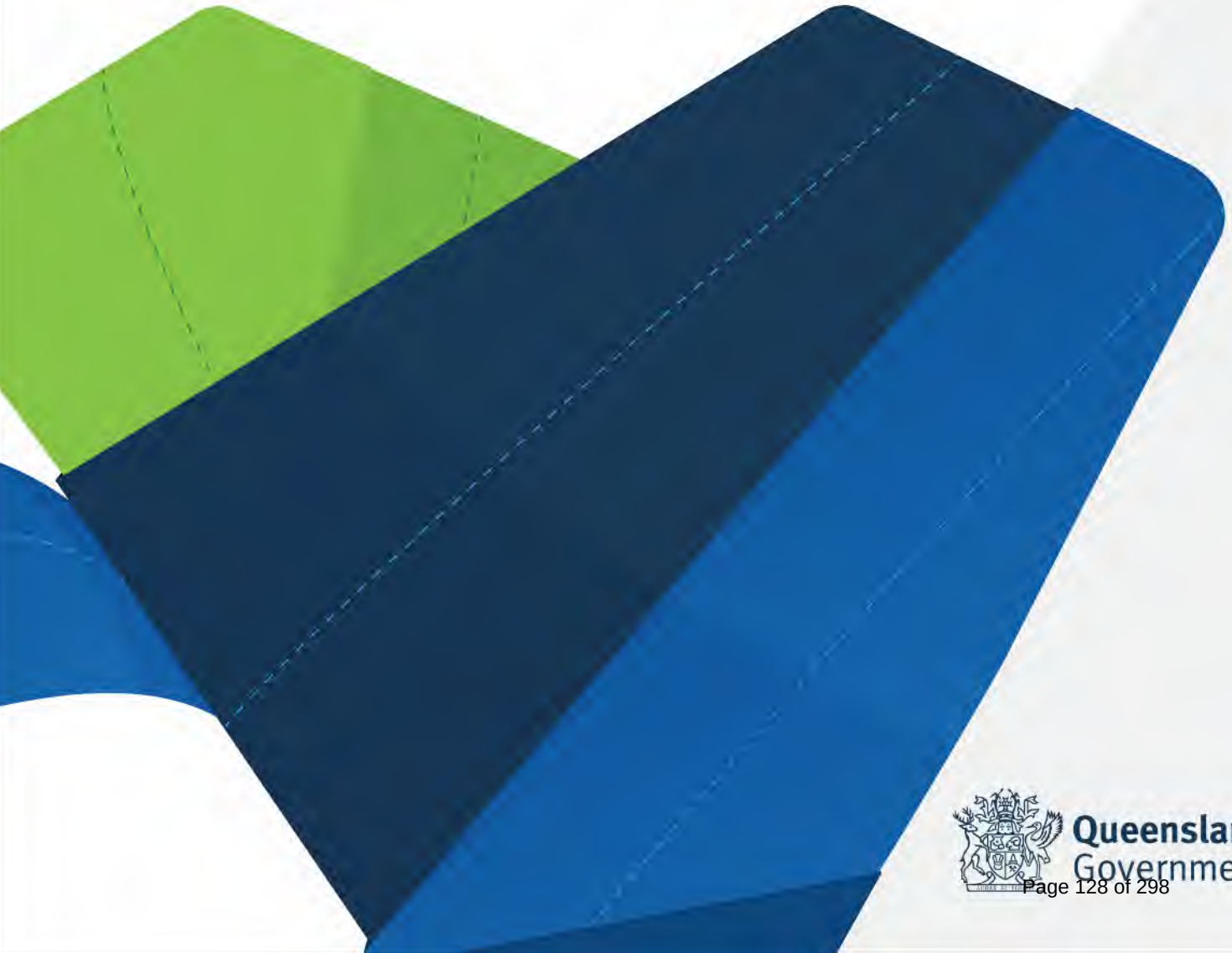
Queensland Health

Water Fluoridation Code of Practice

October 2021



Queensland Government

Foreword

Water fluoridation involves the adjustment of the level of fluoride in public potable water supplies to achieve optimal levels for the prevention of dental caries. Queensland Health recognises that this important public health measure must be conducted safely and effectively to ensure continuing health benefits for the community.

The Water Fluoridation Code of Practice (the Code) contains the requirements needed to meet the requirements of the Water Fluoridation Regulation 2020 as well as the relevant workplace health and safety and environmental legislation. This updated edition of the Code identifies criteria to ensure that fluoridation facilities are established and operated in a safe manner. These criteria apply to all new and existing fluoridation facilities in Queensland.

Queensland Health recognises and greatly values the contribution of public potable water suppliers to improving the health of the community. The Code was first published in January 2008 following extensive consultation with major stakeholders. Since then all public potable water suppliers with fluoridation facilities have taken steps to ensure that they comply with the Code. These water suppliers are to be congratulated for their commitment to ensuring this important public health measure is available to their communities.

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Chief Health Officer

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Department of Health

October 2021

Water Fluoridation Code of Practice - October 2021

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An electronic version of this document is available at www.health.qld.gov.au/public-health/industry-environment/environment-land-water/water/fluoridation

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1 Introduction

Fluoridation of drinking water is the most effective community-wide means for reducing tooth decay, particularly in areas with high levels of dental caries. Water fluoridation at optimal levels remains the most significant oral health program in Australia and, in those communities where it is available, provides the most cost-effective and socially equitable means of achieving community-wide exposure to the preventive effects of fluoride. Water fluoridation can reach the entire community regardless of age, socio-economic status, education or individual motivation. Water fluoridation is a very effective public health measure that results in true cost savings as it saves more money than it costs to implement and operate in the majority of communities.

Fluoride occurs naturally in varying concentrations in almost all public water supplies. The optimum level of fluoride in the public water supply is the level associated with the maximum reduction of tooth decay in the population balanced against the potential for dental fluorosis. Water fluoridation involves the adjustment of fluoride in public water supplies to achieve the optimum level of fluoride. This important public health measure must be conducted safely and effectively to ensure appropriate health benefits for the community.

Australian and overseas surveys repeatedly show that people living in communities that receive optimally fluoridated water have less tooth decay than people living in communities without a fluoridated water supply. In 2016, the Australian National Health and Medical Research Council (NHMRC) conducted an evaluation of evidence concerning dental and other human health outcomes associated with water fluoridation and concluded that water fluoridation reduces tooth decay by 26 to 44 per cent in children, teenagers and adults (see NHMRC 2017 in section 10, References). Similarly, a 2015 review of the benefits and costs of water fluoridation in New Zealand found a 40 per cent lower lifetime incidence of tooth decay for children and adolescents living in areas with water fluoridation, a 21 per cent reduction in tooth decay in adults aged 18 to 44 years and a 30 per cent reduction in those 45 years or older (see Moore and Poynton 2015 in section 10, References).

The majority of the Australian population now live in areas where fluoride levels have been adjusted to achieve an optimally fluoridated water supply. Worldwide it is estimated that approximately 370 million people are currently receiving optimally fluoridated water (British Fluoridation Society 2012 in section 10, References) including communities in the United States, the United Kingdom, Ireland, Israel, New Zealand, Canada, Malaysia, Singapore and Hong Kong.

Water fluoridation is supported by Queensland Health and has been endorsed as a safe and effective public health measure by more than 150 science and health organisations, including the NHMRC, the Australian Dental Association, the Australian Medical Association, and the World Health Organization.

1.1 Aim

The aim of the Code is to help public potable water suppliers meet regulatory requirements and to help them achieve best practice in the design, installation and operation of fluoridation facilities in Queensland. The Code is intended to complement, and should be read in conjunction with, the following key legislation:

- *Water Fluoridation Act 2008*
- Water Fluoridation Regulation 2020
- *Work Health and Safety Act 2011*
- *Environmental Protection Act 1994*
- *Water Supply (Safety and Reliability) Act 2008*

The Code does not address de-fluoridation systems where removal of excess fluoride in the water source is undertaken.

1.2 Structure of the Code of Practice

The Code has been designed to provide guidance to assist water providers to meet the statutory requirements of the Water Fluoridation Act and Regulation and to ensure the safe, consistent and accurate operation of fluoridation facilities. This revision of the Code avoids some of the repetition of the previous edition by grouping common requirements for different fluoride delivery methods under single headings. The Code includes mandatory requirements from state laws for water fluoridation, workplace health and safety and environmental protection (which are always indicated by the word “must”) but adds many additional best practice recommendations, generally indicated by the word “should”.

Under each numbered section title there is a numbered sub-heading (e.g. 1.1), plus a requirement or principal recommendation (e.g. shown as 1.1.1). In some cases, additional explanatory information, which may include acceptable solutions, is included (e.g. 1.1.1.1 and shown in italics).

1.3 Terminology

In this document the Water Fluoridation Code of Practice is referred to as “the Code”.

In this document the term *water supplier* means a “public potable water supplier”, as defined in the Act, that fluoridates. In most instances, the water supplier is responsible for the operation of the fluoridation facility and the management of the drinking water reticulation system. However, in some instances the fluoridation facility and reticulation system will be operated by different entities. To provide for this situation, the Code uses the terms:

- **water supplier** for the entity that operates the fluoride dosing facility that adds fluoride to the water supply; and
- **reticulation system manager** for the entity that is responsible for the infrastructure that reticulates the fluoridated water to the customer, *when this is a different entity from the water supplier*.

It should be noted that the Act and Regulation place no responsibilities on the reticulation system manager when this is a different entity from the water supplier.

For further clarification about terms, refer to the Glossary contained in section 9 of the Code.

1.4 Fluoride compounds

The fluoride compounds permitted for use in Queensland are prescribed under Section 3 of the Regulation and are listed in Table 1 below, together with their alternative names. These compounds are all deemed suitable for use in drinking water under the Australian Drinking Water Guidelines (ADWG) (NHMRC/NRMMC 2011).

Table 1: Forms of fluoride permitted for use in treatment of drinking water

Fluoride company	Formula	CAS No	Alternative names
Sodium fluorosilicate	Na_2SiF_6	39413-34-8	Sodium silicofluoride, Disodium hexafluorosilicate
Fluorosilicic acid	H_2SiF_6	16961-83-4	Hexafluorosilicic acid, Dihydrogen hexafluorosilicate
Sodium fluoride	NaF	7681-49-4	Sodium monofluoride
Naturally occurring fluoride contained in water	CaF_2	Nil	Nil

2 Legislative framework

The legislative framework for water fluoridation in Queensland is comprised of the *Water Fluoridation Act 2008* (the Act) and the Water Fluoridation Regulation 2020 (the Regulation). The Act provides for the promotion of good oral health via safe fluoridation of water supplies, while the Regulation prescribes the key requirements relating to the addition of fluoride, and the monitoring of fluoride, in public potable water supplies.

This legislative framework was introduced in 2008 and, at that time, prescribed mandatory fluoridation of all water supplies serving at least 1,000 people. Subsequent amendments to the Act in late 2012 removed the mandatory requirement, instead allowing local governments to determine whether it is in the best interests of their communities to add, not add, or cease to add fluoride to water supplies in their area.

When determining whether it is in the best interests of a community to add, not add or cease to add fluoride to a water supply, one local government must not affect another local government's water security or water supply or the fluoridation of another local government's water supply without the other local government's agreement.

Once a decision to add, or cease to add, fluoride to a water supply is made, the local government must give the Chief Executive of the Department of Health a notice stating that a decision has been made and the nature of the decision. In addition, the local government must publish a notice at least once in a newspaper circulating in the area serviced by the relevant water supply.

In instances where the local government and water supplier are different entities, the local government is obliged to notify the water supplier of a decision to add, not add or to cease adding fluoride. The water supplier is obliged to comply with a decision by a local government to add, not add, or cease adding fluoride. However, the costs incurred in giving effect to the local government's determination must be met by the local government.

Any water supplier adding fluoride to a public potable water supply must do so in accordance with the regulatory requirements spelt out in the Regulation.

Queensland Health is the government agency responsible for the administration and enforcement of the water fluoridation legislative framework. For reference, copies of the Act and the Regulation can be downloaded from the Queensland Legislation website at: www.legislation.qld.gov.au

Water suppliers that have questions regarding the interpretation and application of the legislative requirements under the Act and the Regulation may contact Queensland Health's Water Unit for clarification on telephone (07) 3328 9310 or via email fluoride@health.qld.gov.au.

3 Design criteria for new fluoridation facilities using fluoride compounds

Design criteria in this section apply only to fluoridation facilities using a fluoride compound.

3.1 Risk assessment

3.1.1 A risk assessment should be completed before the fluoridation facility is designed to ensure that risks including safety considerations for operators are addressed appropriately in the design of the facility and systems.

3.1.1.1 The risk assessment should:

- *incorporate hazard identification, risk assessment and risk management strategies to eliminate or minimise the risk of injury or illness to operators throughout the operational life of the fluoridation facility*
- *consider all possible causes of overdosing and effective mitigation strategies to prevent overdosing*
- *include appropriate electrical and or mechanical interlocks and alarms to facilitate timely intervention to avoid overdosing, where feasible.*
- *include consideration of risks related to 'human factors' (see section 8.1 Operator qualifications and training).*
- *follow an accepted risk management methodology, such as ISO 31000.*

3.1.1.2 The risk assessment should be documented and stored and made available upon request by an authorised officer under the Act.

3.1.1.3 The workplace health and safety requirements for plant and structures are defined in Chapter 5 of the Work Health and Safety (WHS) Regulation 2011. Chapter 5 identifies the specific requirements for workplaces that use plant and structures as well as the workplaces that design, manufacture, import, install or supply plant and equipment to workplaces. Workplace Health and Safety Queensland's 'Managing the risks of plant in the workplace Code of Practice 2021' provides supporting guidance for managing the risks associated with plant and equipment at workplaces.

3.1.1.4 Additional work health and safety advice is shown in section 8.13 (Workplace Health and Safety) in this Code.

3.2 The fluoridation facility

3.2.1 The fluoridation facility must be designed to support easy operation and maintenance, as well as safe, consistent and accurate addition of fluoride compounds to the water supply.

3.2.2 A weather-proof building must be provided for the storage of fluoride compounds. Where other water treatment chemicals are also to be stored within the building, separate rooms for these chemicals must be provided.

3.2.3 Fluoridation equipment must be kept separate from other water treatment plant equipment in a separate building or room (the 'fluoridation room').

3.2.4 A laboratory where fluoride analyses can be performed must be located external to the fluoridation room but within or in close proximity to the fluoridation facility.

3.2.5 All dosing equipment must be automated.

3.2.6 The facility should have access to adequate power, water supply and necessary equipment.

3.2.7 The fluoridation room should be purpose designed:

- for the type of fluoridation system that it will house
- to allow easy cleaning and removal of spilt fluoride compound
- to include a hose and stop cock.

3.2.8 The fluoridation facility design should provide the ability to:

- Permit rapid measurement of the fluoride dosing rate
- measure in real time the water flow and fluoride concentration
- conduct a gross check that the estimated concentration of fluoride in water is being achieved to within 5% of the prescribed fluoride concentration.

3.2.9 The floor of the fluoridation room should be made of concrete.

3.2.10 Careful thought needs to be given to the physical layout of equipment within the fluoridation room so that operator safety can be assured. For example, trip hazards and items that people may walk into or hit their heads on should be avoided.

3.2.11 Pipes, conduits and ducts should be identified as referenced in *AS1345 - Identification of the contents of pipes, conduits and ducts*.

3.2.12 The installation of all equipment, valves, controls and access points should facilitate easy access for all expected operational and maintenance requirements (e.g. relative locations, mounting height and general access).

3.3 Electrical controls

3.3.1 Control panels, such as electrical control panels for the fluoridation facility should be located outside of the fluoridation room.

3.3.1.1 Electrical control panels should be located outside the fluoridation room to minimise deterioration due to corrosion and to minimise the need for entry into the room for operational and maintenance staff.

3.3.1.2 The room containing the control panels should have a separate entry door with no interconnecting door or other means by which air can pass between the two rooms. There should be a window in the common wall between the fluoridation room and the control panel room to allow operators to have a clear view of the fluoridation system equipment when operating the control panel.

3.3.1.3 Dosing or blending pumps should be hard-wired to the control system (rather than connected by electrical wall plug).

3.4 Flow measuring devices

3.4.1 The system must have the rate of feed of the fluoride paced to the flow of the water.

3.4.2 The system must have at least two devices that independently monitor the flow of water, one of which must be a flow meter.

3.4.3 The physical indicators of water flow through the fluoridation facility can be via two flow meters or by a combination of a flow meter with a flow-sensing device such as a flow switch.

3.4.3.1 Reliance on a single primary flow-sensing device can significantly increase the risk of overdosing, as a fault or failure could lead to the fluoridation system continuing to add fluoride to the water after the water flow has actually stopped. Care should be taken in selecting the most appropriate devices for this purpose.

3.4.3.2 The flow meter should:

- *be appropriately located to enable the addition of fluoride to be paced to water flow over the full range of flow rates for the water treatment plant or bore and*
- *measure both the rate of flow and total volume of flow.*

3.4.4 The two separate physical indications of water flow through the fluoridation dosing facility should be hard wired in series, either directly or via programmable logic controller (PLC) coding, in the control loop for starting and stopping the fluoridation system. Where possible, the use of electromagnetic flow meters is recommended as they can achieve an accuracy of ± 1-2%. The failure of either one of the devices must stop the fluoridation system from operating. That is, they must be interlocked.

3.4.5 For a gravity flow supply, the first flow signal could originate from a flow meter (upstream location) and the second signal could come from a secondary flow-based measuring device or control device installed on the downstream side of the dosing point. The flow indication or flow measuring device should be positioned to provide a true representation of flow through the plant or from a bore.

3.4.6 For pumped supplies, the fluoridation system pump should be electrically interlocked with the pump supplying water.

3.4.7 The system must be designed in a way that ensures fluoride is not added to the water supply in the event of system failure or when water is not flowing.

3.5 Achieving the prescribed concentration

3.5.1 The fluoridation system must be designed to consistently achieve the prescribed fluoride concentration for the relevant local government area as detailed in Schedule 1 of the Regulation.

3.5.2 The maximum rate for the addition of fluoride which achieves the prescribed concentration at the maximum facility flow must be set in the control system and/or the dosing/blending pump or dry feeder so that it cannot be exceeded. This setpoint should be password protected so that only an authorised person (e.g. the water treatment plant supervisor) can change it.

3.5.3 Fluoridation systems, including pumps, should be sized appropriately so that the dosing pump, running at full capacity, delivers as close as practicable to the desired concentration of fluoride when the plant is running at the maximum flow rate. The size of the fluoridation system should be such that fluoride cannot be delivered into treated water at concentrations that lead to an exceedance of 1.5 mg/L of fluoride in the reticulation system.

3.6 Backflow prevention

3.6.1 It is important that fluoride compound is not siphoned backwards into the solution water system should a failure of the solution water system occur. This possibility could cause problems to other equipment, create a health hazard, or result in an environmental release.

3.6.2 The system should therefore have a backflow prevention device, such as an air gap, that complies with AS/NZS 3500, fitted upstream of the point where the fluoride compound is dissolved (e.g. mixing tanks) or injected (dosing pumps) to avoid contamination of the drinking water supply.

3.7 The fluoride injection point

3.7.1 The point where fluoride is added to the water supply should be located:

- where adequate mixing with water being fluoridated can occur
- where other water treatment processes do not interfere with mixing
- upstream of any treated water storage reservoir.

3.7.2 Where there is no storage reservoir between the point where fluoride is added to the water supply and water service offtakes, at least one online fluoride analyser – interlocked with the fluoridation system – should be provided downstream of the point where fluoride has been added to the water supply at a location where adequate mixing has taken place. In addition, water suppliers should employ at least one additional safeguard such as:

- the adoption of a fluoride solution flow meter with high flow alarm
- the use of a day tank or
- the use of two flow meters (rather than the use of one flow meter and a flow switch) such that discrepancies in flow readings result in shutdown of the fluoride dosing system.

3.7.3 The point where fluoride is added to the water supply should occur after any coagulation, filtration and pH adjustment to avoid substantial losses that can occur if fluoride reacts with other water treatment chemicals such as aluminium, calcium or magnesium. This can cause the fluoride to form a precipitate and thereby cease to be in solution, reducing its effectiveness.

3.7.4 Where the total hardness of the water used for dissolving sodium fluoride compound exceeds 75 mg/L as calcium carbonate the system should include a water softener. This applies only to the water used to make up the fluoride solutions in the mixing tanks and does not apply to the main water supply being treated.

3.7.5 Where a day tank is used the following principles should be adhered to:

- The volume of fluoride solution contained in the day tank should not exceed that required to achieve the prescribed concentration for the maximum volume of treated water produced over a 24-hour period, with reserve capacity necessary to allow a top up.
- The transfer of fluoride solution should be controlled by a pump, be initiated manually and stopped automatically (manual initiation can include initiation via a SCADA system)
- The refilling line should have a motorised valve.
- The pump discharge line should have an anti-siphon motorised valve installed.
- The transfer of fluoride solution should not be repeated within any 24-hour period.

3.7.6 A mixing process designed to achieve adequate mixing should be provided between the point where fluoride is added to the water supply and any sampling point. Without sufficient mixing the validity of results from sampling and analysis cannot be assured.

3.8 Prevention of manual operation

3.8.1 Other than for filling the day tank (see section 3.7.5) equipment should be designed such that it is impossible for it to be switched to manual mode.

3.8.2 The system should be used and operated in automatic mode to prevent possible incorrect operation in manual mode.

3.8.3 No component of the system should be capable of being manually plugged into standard electrical outlets for continuous operation.

3.9 Online monitoring and alarms

3.9.1 All key components should be alarmed with appropriate technology to alert the operator of a failure in the system even if the site is unattended.

3.9.2 The failure of any of the key components of the fluoridation system (including stop/start/pacing signals, feeders, dosing pumps, solution transfer pumps, solution tank levels, mixers and dilution water pumps) should result in an alarm being generated and a response by operational staff.

3.9.3 It is important to provide fluoridation facility operators with the ability to accurately monitor the fluoridation system and equipment performance. Local indicators that should be considered include water flow, fluoride feed rate, pressure and level indicators, storage levels, equipment status, alarms, ammeters and hours run.

3.9.4 Though not a primary control, online monitoring of fluoride concentration in the fluoridated water may also be used as part of the fail-safe system. The online monitoring system can be interlocked with the fluoridation system to shut it down when the concentration of fluoride exceeds a maximum set point.

4 Additional design criteria for new fluoridation facilities using powdered fluoride compounds

The following requirements apply specifically to fluoridation facilities that use either of the powdered fluoride compounds, sodium fluoride or sodium fluorosilicate.

4.1 Dust control

4.1.1 The storage and handling of sodium fluorosilicate and sodium fluoride must comply with requirements under the *Work Health and Safety Act 2011* as well as *AS/NZS 4452 The storage and handling of toxic substances*, which applies to the storage and handling of class 6.1 (toxic) dangerous goods.

4.1.2 An appropriate dust management system should be included in the fluoridation facility design to prevent the escape of fluoride compound dust into the fluoridation room and maintain acceptable internal air quality.

4.1.3 The design of the dust management systems should take into account the total process from unloading the bags into storage hoppers, powder transport from the hoppers to the feeders and from the feeders into the solution feed. Depending on the size of the hopper and fluoridation room, the use of two ventilation systems may need to be considered.

4.1.4 The bag loader for filling a storage hopper should have a dust extraction fan, with an associated dust capture system, vented to an appropriate location outside of the fluoridation room.

4.1.4.1 Systems such as dust exhausts blowing down into external water traps may be used to capture fluoride dust.

4.1.5 The design of the fluoridation room should prevent any potential for the build-up of powder from air deposition including on roof beams and other surfaces.

4.1.6 The internal walls and ceilings of the fluoridation room should have smooth surfaces to prevent dust accumulation and simplify cleaning. A suitable smooth surface for internal walls and ceilings would include gloss paint. Windows should have no ledges.

4.1.7 Dry fluoride compounds should not be allowed to escape from the fluoridation room to the external atmosphere unless a device like a water trap is used.

4.1.8 Doors and walls of the fluoridation room should be flush with no gaps.

4.1.8.1 The use of doors with rubber seals and airtight windows should be considered.

4.2 Hazardous manual tasks

4.2.1 The design of the fluoridation facility should minimise the need for hazardous manual tasks.

4.2.1.1 The design should consider the use of hand operated pallet forklifts, the matching of the height of the fluoride loading floor with the tray of the delivery truck and use of self-raising pallet systems to maintain the same 'lifting' level as bags are taken off a pallet for loading into the storage hopper. This minimises the need for the operator to bend further as the pallet empties.

4.2.2 Where the manual lifting of bags is necessary, the distance and height at which they are lifted should be minimised.

4.3 Storage of dry fluoridation chemicals

4.3.1 When bags of powdered dry fluoride compound become damp or wet, they can be very difficult to use in the fluoridation equipment, often leading to increased maintenance and variable fluoride concentrations in the fluoridated water. In more extreme circumstances, the fluoride compound can become unusable and would need to be disposed of (refer to section 8.14 Environmental protection for further guidance on appropriate disposal methods). In some situations, the installation of dehumidifiers or air-conditioning within the fluoridation building can minimise such problems.

4.3.2 Dry fluoride compounds should always be stored in an elevated location. A raised platform is one option for both storage and chemical loading to dry feeders or solution tanks.

4.3.3 The design and construction of the chemical storage areas should consider the relevant Australian Standards (*AS4452 The storage and handling of toxic substances* and *AS3780 The storage and handling of corrosive substances*) to help ensure compliance with the *Work Health and Safety Act 2011* and the *Environmental Protection Act 1994*.

4.4 Continuity of fluoride supply

4.4.1 The capacity of the storage/feed hopper or tank should be no larger than is required to ensure continuity of fluoridation.

4.4.1.1 Should the capacity of the storage/feed hopper or tank exceed seven days' supply due to operational and/or workplace health and safety concerns, additional control measures should be incorporated into the design and operation of the fluoride dosing system to negate the increased risk of overdosing. Such control measures may include, but are not limited to, the use of online fluoride compound weight-loss monitors and/or online fluoride analysers. Appropriate corrective actions for these additional control measures should also be developed before operation begins.

4.5 Dry feed systems

4.5.1 Dry fluoride feed systems should include:

- a powder unloading system
- a storage/feed hopper
- a volumetric or gravimetric dry feeder
- a dissolving tank with mechanical stirrer
- a weight loss system to monitor the weight of fluoride compound used
- a potable dilution water source and
- a solution transfer pump (if not gravity fed).

4.5.2 Any water supply used for dissolving sodium fluoride or sodium fluorosilicate should have a fixed flow rate in order to maintain correct dissolving time in solution.

4.6 Fluoride batch solution feed systems

4.6.1 Fluoride batch solution feed systems should include:

- two batching tanks with mechanical mixers
- a dilution water meter
- a potable dilution water source
- a method for calibrating dosage rates
- a metering pump with pressure relief and
- a loading valve on the delivery side of the pump.

4.6.1.1 The two batching tanks containing the dissolved fluoride compound should be located in a bunded area.

4.6.1.2 Suitable methods for calibrating dose rates include a graduated calibration tube or calibrated dipsticks.

4.7 Fluoride saturator systems

4.7.1 A downflow saturator should always contain at least 150 mm of fluoride compound above the top of the filtration support media but should not be filled to the top of the tank where it may impede the flow of water into the tank.

4.7.2 An upflow saturator should never be filled so high that undissolved fluoride compound can be drawn into the suction line.

4.7.3 Fluoride saturator systems should include:

- a saturator tank with powder support media
- a powder unloader system
- a dilution water meter
- a potable dilution water source
- a method for calibrating dose rates, and
- a metering pump with pressure relief and

- a loading valve on the delivery side of the pump.

4.7.4 The saturator tank should be designed so that it is possible to observe the level of undissolved fluoride compound in the saturator tank.

5 Additional design criteria for new fluoridation facilities using fluorosilicic acid

Fluorosilicic acid is inherently more hazardous than the powdered fluoride compounds. The following requirements apply to fluoridation facilities that use fluorosilicic acid.

5.1 Corrosive fumes

5.1.1 Corrosive fumes associated with fluorosilicic acid should be removed from the fluoridation room. This can be achieved via mechanical ventilation and venting of fume sources, such as internal storage tanks, to an appropriate location outside the fluoridation room. Acid fumes should be maintained at a level below occupational exposure standards.

5.1.1.1 Fluorosilicic acid is corrosive and will give off acidic fumes. These fumes have the potential to increase corrosion rates of equipment in the fluoridation room and harm operator health and safety, if not managed appropriately. Fumes from internal storage tanks should be minimised through sealing of the tank and extending vents outside the building. Water seals can be used on the tank overflow outlet if the bunded area is internal to the room. An exhaust fan should be installed to remove the fumes from the fluoridation room. The location of the fan and room vents should be chosen to maximise cross flow ventilation of the room. If exhaust fans are used, they should be acid-fume resistant, designed for continuous operation and vented to open air away from doors, windows and air inlets and any area that may be accessed outside the fluoridation room.

5.2 Storage, handling and spills

5.2.1 Storage and handling systems such as carboys, drums, day tanks, indoor bulk storage tanks and graduated calibration tubes should be sealed and vented back to the bulk storage tank or directly to an appropriate location outside of the fluoridation room.

5.2.2 All tanks containing fluorosilicic acid should be inside a compatible spill compound that has the capacity to contain spills or leaks within the work area of the workplace.

5.2.3 Storage and handling of fluorosilicic acid must comply with requirements under the *Work Health and Safety Act 2011*.

5.2.3.1 Spill compounds or bunds can be used to contain any potential leaks and spills from the storage and handling systems. AS3780 The storage and handling of corrosive substances provides recommendations for spill compounds for fluorosilicic acid. Specifically, it states that tanks of fluorosilicic acid should be located within a spill compound large enough to contain 110% of the largest tank within the compound.

5.2.4 No more than 24-hours' supply of fluorosilicic acid should be connected at any time to the suction side of the chemical feed pump. All bulk storage tanks with more than a 7-day supply should have a day tank. A day tank can contain up to 24-hours' supply of acid (with reserve capacity necessary to allow for a top up) and the fluoride transfer from the bulk tank to the day tank should be controlled and not occur more than once in any 24-hour period.

5.2.4.1 Fluoride transfer from the bulk tank to the day tank should be initiated manually and stopped automatically and only occur once in a 24-hour period. Manual initiation can include initiation via a SCADA system. Day tanks should be equipped with online weight management to ensure overdosing does not occur. There should be a motorised valve in the line between the bulk tank and the day tank. Another safeguard is to have an anti-siphon and a motorised valve installed in the metering pump discharge line.

5.3 Acid dosing

5.3.1 Fluorosilicic acid dosing systems should include:

- a day tank equipped with online weight measurement
- a weighing platform for the acid container
- a method for calibrating dose rates
- a metering pump with pressure relief
- a loading valve on the delivery side of the pump, and
- a potable water source.

5.3.1.1 Suitable methods for calibrating dose rates include a graduated calibration tube or calibrated dipsticks.

5.3.1.2 A load cell can be provided for online measurement; the accuracy of load cell measurements should be within ± 1% for the range being measured.

5.3.2 Practical controls should be incorporated into the fluorosilicic acid dosing system to prevent overdosing by rapid release of the day tank's contents into the water being fluoridated. Methods may include anti-siphon pump controls.

6 Additional design criteria for new fluoridation facilities blending naturally occurring fluoride

Although systems that blend water that has naturally occurring fluoride with other, low fluoride water sources are inherently low risk, they must still be designed to maintain a consistent, accurate fluoride concentration.

6.1 Maintaining fluoride concentration

6.1.1 The fluoride concentration of the natural fluoride source water must not vary to the extent that the blending regime cannot be adjusted to accurately achieve the prescribed concentration.

6.1.1.1 As a guide, the variation in fluoride concentration in the source water containing the naturally occurring fluoride should not be more than ±15%.

6.1.2 Flow meters must be installed on both the regular water supply and the water containing naturally occurring fluoride.

6.1.2.1 Sufficient information should be sourced to demonstrate that the particular aquifer being accessed, in terms of its yield and fluoride concentration, represents a long-term source of fluoride. This investigation must be undertaken prior to the completion of the design phase and procurement of any equipment. Historical data for the aquifer should be used but if it is not available, hydrogeological advice should be sought. The evaluation should also consider the future demand from the aquifer.

6.1.2.2 Historical measurements of fluoride concentrations may be adequate to demonstrate security of fluoride supply if they show stability over the long term (i.e. at least 12 samples over a twelve-month period). An alternate source of data (if none is available for the bore in question) could be based on test results from other bores in the area, subject to hydrogeological evidence of the bore in question being in the same aquifer as the other bores.

6.1.3 The fluoridation system for blending should include a metering pump fitted with a pressure relief valve and a loading valve to deliver the source water containing naturally occurring fluoride.

6.1.4 Practical controls should be incorporated into the system to prevent overdosing.

6.1.4.1 Water from the Great Artesian Basin can be very hot (30-100 degrees C) and so consideration should be given to the temperatures range and chemical components of the natural supply when selecting pumping equipment.

6.1.4.2 Pumping equipment should have a non-return valve (or equivalent) arrangement to prevent backflow into the groundwater.

6.1.4.3 Flow should be controlled by a variable speed pump.

6.1.4.4 Chemicals present in the naturally fluoridated water source (e.g. silica) can precipitate at the blend point due to the rapid temperature change due to mixing liquids with different temperatures. Based on the water chemistry, assess whether precipitation is a likely risk, a Standard Operating Procedure may be needed to monitor the pipework downstream of the blend point for accumulated scale.

6.1.4.5 Monitoring of total flow and instantaneous flow measurements can be used to generate an alarm if the pumps generate a daily total flow greater than the maximum daily demand.

6.1.4.6 If a bore is the source of naturally occurring fluoride, the prolonged operation of the bore should not change the concentration of fluoride present in that source due to draw down or other effects on the aquifer.

7 Additional design criteria for upgrades to the water supply or fluoridation facility

This section applies to any fluoridation facility undergoing a system upgrade that will affect the decisions and outcomes of the original risk assessment for the fluoridation facility. It does not apply to new fluoridation facilities.

7.1 Risk controls

7.1.1 Initial design risk control measures are to be maintained if subsequent modifications of the fluoridation facility and/or the water supply system are undertaken, where they are still relevant.

7.1.2 In particular, the fluoridation facility must continue to comply with the provisions of the Act and Regulation and should also comply with the provisions of the Code following any water supply system capacity upgrade or major fluoridation facility upgrade.

7.1.2.1 All changes to the fluoridation facility should be recorded in a plant register or via a maintenance management system.

7.1.3 A new risk assessment should be undertaken if any alteration or modification is made to the fluoridation facility. Control measures should be adjusted or implemented accordingly to control any risks arising from the alterations or modifications.

7.1.4 Any alterations or amendments that result in changes to the operation and/or emergency response plans should be communicated to all staff and contractors involved in the operation, management or maintenance of the fluoridation facility.

7.1.4.1 Modifications to the fluoridation facility should not increase any workplace health and safety risks to the workers or visitors to the plant.

8 Operational performance criteria for fluoridation facilities

8.1 Operator qualifications and training

8.1.1 Operators of the fluoridation facility must be appropriately qualified. This means they must have the necessary training, knowledge and experience to competently operate a fluoridation facility.

8.1.1.1 The necessary skills and knowledge can be obtained through the nationally recognised unit of competency NWPTRT006 – Monitor and operate fluoride addition processes, or an equivalent competency. The unit of competency (NWPTRT006) should be from the Water Industry Advisory Committee Water Training Package NWP or equivalent.

8.1.1.2 However, completion of formal units of training is not sufficient on its own to guarantee competent operation of fluoride dosing facilities. This was shown during the North Pine Water Treatment Plant fluoride overdosing incident in 2009 where a combination of 'human factors' (i.e. human error) led to a breakdown in safeguards (for more information on managing human factors see Cloete et al. 2011 in section 10, References). Operators must be alert to indications that the fluoride dosing system is not operating as it should and respond appropriately.

8.1.2 A sufficient number of competent people must be available to operate the fluoridation facility. A minimum of two fluoridation facility operators should be qualified.

8.1.2.1 The number of qualified people required will depend on the particular staffing arrangements used by a water supplier (e.g. single operator or team based). As a minimum, two competent operators should be available to ensure that periods of sickness, annual leave, weekends and other issues, such as training and meetings, will not result in the unavailability of a competent operator for the fluoridation facility. It is also recommended that the fluoridation facility operators' supervisor (or other appropriate manager) obtain the necessary training, knowledge and experience in order to provide a detailed awareness of the legislative requirements of the Act and Regulation within the management structure of the water supplier (as well as providing operational support in an emergency).

8.1.2.2 Operating staff with prior experience operating a fluoridation facility in Australia or overseas may seek recognition of prior learning from any training provider registered to deliver the unit of competency in Queensland. Recognition of prior learning may include a short skills assessment.

8.1.2.3 Operating staff who are only involved in blending naturally occurring fluoride need not complete the nationally recognised unit of competency for fluoridation. Rather, these staff should have the necessary skills, knowledge and experience to undertake general water operational activities. Examples of appropriate qualifications include a Certificate III or IV in Water Industry Operations.

8.1.2.4 The water supplier should develop Standard Operating Procedures (SOPs) for all routine operational duties within the fluoridation facility. The water supplier should provide training to all staff on how to carry out these procedures so there is consistency between operators. All operators should be competent in carrying out these SOPs. The use of pictures in SOPs can be useful and effective.

8.1.2.5 The SOPs should cover routine daily inspections, management of fluoride compounds (e.g. topping up of day tanks, hoppers, saturators, ordering new stocks), process control decisions, fluoride concentration corrections, record keeping and shut down and start-up where it is likely that the fluoridation system will be taken out of service for any significant period of time.

8.1.3 All fluoride dosing facility operators should be trained and competent in following all SOPs for the fluoridation facility.

8.2 Maintaining adequate supply of fluoride compound

8.2.1 Sufficient quantities of fluoride compound should be available or kept in storage to ensure continuity of water fluoridation.

8.2.1.1 The risk associated with ensuring a continuous supply of a fluoride compound is influenced by a number of issues including the quantities involved, transport distance, procurement strategy, general availability of the compound and access to the treatment facility. For some locations, seasonal conditions (e.g. potential for flooding, cyclones) may require the fluoridation facility to store a few months' supply of fluoride compound on site.

8.2.2 If using a naturally occurring fluoride source, the source should be demonstrated to be a secure supply to ensure continuity of water fluoridation.

8.3 Fluoride compound quality

8.3.1 The water supplier must, on the receipt of each batch of fluoride compound, obtain a copy of the batch analysis certificate from the manufacturer, importer or supplier.

8.3.2 Following amendments to the Regulation in 2020, the batch analysis certificate must be issued by an Australian-based laboratory accredited by the National Association of Testing Authorities Australia (NATA) for analysis of impurities that may be present in fluoride compounds.

8.3.3 The water supplier must not add a fluoride compound to a public potable water supply if the batch analysis certificate indicates a concentration of a particular impurity exceeds the maximum concentration prescribed in Schedule 2 of the Regulation (also listed in Appendix 1 – Table 1).

8.3.3.1 Metals are the main impurities of health significance found in fluoride compounds. Further guidance on impurities in drinking water chemicals is available in Chapter 8 of the ADWG.

8.3.4 If a batch analysis certificate cannot be obtained, the water supplier must arrange for a sample of the fluoride compound to be analysed, at an Australian-based laboratory accredited by NATA, to determine the level of any impurities.

8.3.5 The specifications for fluoride compounds detailed in Appendix 1 - Table 1 must be treated as the minimum standard for water suppliers using sodium fluoride, sodium fluorosilicate or fluorosilicic acid.

8.3.6 It is recommended that fluoride compounds comply with the specifications in Appendix 1 - Table 2 to minimise potential operational issues.

8.3.7 The water supplier should ensure that the physical characteristics of the fluoride compound or variations in fluoride compound strength do not lead to excessive variability in the prescribed fluoride concentration in the fluoridated water or cause excessive workplace health and safety hazards.

8.3.7.1 Insoluble matter can increase turbidity levels in the final water.

8.3.8 It is recommended that the water supplier develop an SOP for the receipt of fluoride compounds. An SOP for the receipt of fluoride chemicals could include checks against chemical specifications, checks that the product is accompanied by the necessary paperwork (a batch analysis certificate issued by an Australian-based laboratory accredited by NATA and an SDS), and checks on the integrity of packaging and that the product has not been tampered with.

8.4 Quality of naturally occurring water for blending

8.4.1 The blending of a naturally occurring fluoride source should not result in any ADWG health or aesthetic parameters being exceeded in the final, treated water.

8.5 Prescribed fluoride concentration for the applicable local government

8.5.1 The water supplier must ensure the average measured fluoride concentration over a quarter meets the prescribed fluoride concentration, as per Schedule 1 of the Regulation.

8.5.2 Water suppliers must focus their efforts on the supply of safe drinking water at all times. Accordingly, if there are legitimate concerns regarding the safety of the fluoridation facility, the obligation to meet the prescribed concentration, when averaged over a quarter, should be viewed as of secondary importance. However, water suppliers should notify their local Public Health Unit (refer to section 11) if they consider that they are unlikely to meet the prescribed concentration, when averaged over a quarter, due to legitimate safety concerns.

8.5.3 The ADWG maximum health guideline value for fluoride is 1.5 mg/L. Under the provisions of the *Water Supply (Safety and Reliability) Act 2008*, drinking water service providers are required to report any exceedance of ADWG health guidelines immediately. If the concentration of fluoride in the fluoridated water exceeds 1.5 mg/L, the water supplier must immediately take corrective actions and notify Water Supply Regulation within the Department of Regional Development, Manufacturing and Water.

8.5.4 The water supplier should aim to achieve a consistent and accurate measurement of the fluoride concentration in the water supply.

8.5.4.1 *Some water supplies have fluctuating naturally occurring fluoride concentrations in their source water, or they may rely on multiple water sources that may have differing natural fluoride concentrations. This may present a risk of fluoride overdosing if not managed properly. Regular raw water sampling may be necessary during the initial operating period of the fluoridation facility to gain a better understanding of the presence and concentration of any naturally occurring fluoride. It is the responsibility of each water supplier to assess this risk as part of the risk assessment process discussed in section 3.1 of this Code. Online fluoride monitors may be needed to consistently monitor the raw water fluoride concentration where fluctuations in naturally occurring fluoride concentrations could affect the ability of the water supplier to maintain the prescribed fluoride concentrations in fluoridated water.*

8.5.4.2 *Best practice in fluoridation involves the application of an accurate concentration of fluoride at a constant rate to ensure an optimal fluoride concentration is maintained. In terms of fluoride dosing accuracy, best practice is achieved when at least 95% of the daily samples (when the fluoridation facility is operational), obtained over a 12-month period, fall within the ranges detailed below:*

- *Local government listed in part 1 of Schedule 1 of the Regulation: 0.4 – 0.7 mg/L*
- *Local government listed in part 2 of Schedule 1 of the Regulation: 0.5 – 0.8 mg/L*
- *Local government listed in part 3 of Schedule 1 of the Regulation: 0.6 – 0.9 mg/L*

8.5.4.3 *The water supplier should aim to meet these operational targets on a consistent basis. Note: This is an operational target and does not negate the water supplier's regulatory obligation to meet the prescribed fluoride concentration (+/- 0.1 mg/L) when averaged over a quarter.*

8.5.4.4 *Water suppliers operating a reticulation system that can be supplied by multiple water treatment plants/bores may shut down individual water treatment plants/bores for maintenance or during periods of low demand. In these situations, the water supplier should develop SOPs for shut down and start-up operations to ensure safe and accurate dosing or blending is maintained.*

8.5.4.5 *In some instances, the water supplier and the reticulation system manager may be different entities resulting in the reticulation system manager having no direct control over the fluoride concentration in the water. The water supplier should have a notification arrangement with the reticulation system manager in relation to an under dosed supply, such that they are notified of any disruptions that affect the supply of optimally fluoridated water. For overdosing events, clearly articulating and establishing these communication procedures is an essential part of Emergency Response Planning (see section 8.11 of this Code) and is also important for effectively communicating other water fluoridation issues in a timely manner. Wherever possible, these communication procedures should be integrated into existing plans and procedures.*

8.6 Analysis of fluoride in treated water

8.6.1 The water supplier must analyse the concentration of fluoride in the fluoridated water each day, from a location where the fluoridated water would have a consistent concentration of fluoride. The sampling point location should be far enough downstream from the point where the fluoride is added to the water supply to ensure the fluoride is well mixed, but prior to any customer connection, reservoir or tank.

8.6.1.1 Daily sampling serves two purposes: to monitor fluoride levels in water distributed to customers and to verify the correct operation of the fluoridation system.

8.6.1.2 Where fluoride is added to a single main, it is often the case that one sampling point can be used for both purposes.

8.6.1.3 In such cases it is important to ensure that the sample point is far enough downstream so that the fluoride is well mixed with the treated water but not too far downstream, or after a service reservoir.

8.6.1.4 Complex supply networks will require at least two sampling points. Where long sample lines are used it is good practice to carry out regular checks to ensure the sample line is not affecting the sample water quality (e.g. compare results taken from each end of the sample line).

8.6.2 The water supplier must use a method of analysis that has been prescribed under the Regulation. Prescribed analysis methods include the following (see Glossary for further information):

- ion-selective electrode (ISE) method
- SPADNS method
- ion chromatography method.

8.6.2.1 Each of the above methods for measuring fluoride in water are included in the Standard Methods for the Examination of Water and Wastewater (see AWWA/WEF 2017 in section 10 References).

8.6.2.2 The ISE method is preferred as it is reliable, easy to perform and less affected by interfering substances in the water.

8.6.2.3 It is essential that measurements be carried out as described with the use of appropriate, calibrated equipment and reagents of appropriate quality. Failure to do so may lead to inaccurate results and unnecessary concern (see sections 8.7 and 8.9 for guidance on quality assurance and calibration respectively).

8.6.2.4 The minimum requirements for equipment and reagents to carry out bench-top ISE analyses are:

- *a meter that can be used with fluoride and temperature probes, and that displays millivolts, fluoride concentration and temperature in degrees Celsius*
- *fluoride electrodes (either a combined electrode, or separate measuring and reference electrodes)*
- *temperature probe (for measuring temperature of sample being tested)*

- *a magnetic stirrer with insulated top, moveable arm stand with probe holder for fluoride and temperature probes, and Teflon coated stirrer bars*
- *laboratory plastic ware (beakers, measuring cylinders and sample/storage bottles)*
- *a timer*
- *Total Ionic Strength Adjustment Buffer (TISAB), and electrode filling solution (potassium chloride), which should be of analytical grade.*

8.6.2.5 *Only plastic should be used for fluoride samples as the use of glassware (such as bottles or beakers) may lead to lower results due to adsorption of fluoride ions onto the glass surface.*

8.6.2.6 *Online analysers will only produce accurate and reliable results when they are properly maintained and regularly calibrated. Investigations of poorly maintained ISE probes have shown that the instruments can produce an erroneous estimate of fluoride concentration (see sections 8.7, 8.9 and 8.10 for guidance on quality control measures, calibration and maintenance).*

8.6.2.7 *Online analysers utilise the ISE method and as such are susceptible to analytical interferences that may either increase or decrease the apparent fluoride concentration. Interferences are caused when fluoride forms complexes with metal ions, such as aluminium and iron. Variations in ionic strength can also affect the accuracy of ISE measurements.*

8.6.2.8 *The extent to which fluoride complexes are formed depends on solution pH, fluoride concentration and concentration of complexing metal ions. If interferences cause errors in the measurement of the fluoride ion of 0.05 mg/L or greater, the use of online analysers that utilise a buffering agent – such as TISAB – is recommended.*

8.6.2.9 *The use of a free fluoride online analyser – an online analyser which does not utilise TISAB – may be considered appropriate if the water to be dosed and monitored:*

- *is consistently low in aluminium and iron (i.e. consistently below the aesthetic guidelines values in ADWG – 0.2 mg/L for aluminium and 0.3 mg/L for iron) and*
- *has a relatively stable pH between 5.5 and 8.5.*

8.6.2.10 *All ISE analyses, including online ISE analyses, should be performed at a constant temperature, or results corrected for temperature, as ISE measurements are temperature dependent.*

8.6.2.11 *SOPs should be developed for sampling and analytical procedures and should specify any areas that may be problematic (e.g. adding reagents, timing or interfering substances).*

8.6.2.12 *ISE electrodes should be cleaned and stored appropriately.*

8.6.2.13 *The meter attached to the fluoride ion selective electrode should be checked regularly for sensitivity (following manufacturer's instructions).*

8.6.3 The method should conform to the latest edition of Standard Methods for the Examination of Water and Wastewater (see AWWA/WEF 2017 in section 10 References).

8.6.4 Staff should be appropriately trained in the method used to analyse fluoride and must follow any SOPs associated with fluoride analysis.

8.6.5 The analysis SOP should ensure that the fluoride calibration standard(s), quality control samples and the routine fluoride samples are at the same temperature before proceeding with the analysis.

8.6.6 The laboratory where fluoride analysis is performed should contain appropriate resources to ensure accurate fluoride concentration analysis.

8.6.7 Analytical equipment should be permanently set up. Bench space should be adequate for analysis and sufficient storage available for consumables (such as plastic ware, reagents and spare parts). The area should not be exposed directly to sun or high temperature. Air conditioning is preferred. A small fridge for storing samples and reagents at a constant low temperature should be provided.

8.6.8 Appropriate spare equipment/parts for the laboratory should be available on site.

8.7 Quality assurance of fluoridated water supply

8.7.1 On one day each month the water supplier must split a daily sample into two parts and analyse one part using a prescribed analysis. The other part must be forwarded to an Australian-based laboratory that is NATA accredited for fluoride analysis, and the results of analysis provided to the water supplier.

8.7.1.1 The sampling and analysis of a quality control sample each month is required under the Regulation to provide confirmation of the accuracy of the analytical procedures employed on site. This must be performed by an accredited laboratory.

8.7.2 A daily quality control sample should be analysed by the water supplier along with the mandatory daily samples of fluoridated water. This sample should be analysed using the same prescribed analysis as the routine samples.

8.7.2.1 The daily quality control sample is a sample of known fluoride concentration. This daily quality control sample provides a means to ensure that any analysis performed by the fluoridation facility operator is providing accurate results. The daily quality control sample should be prepared separately from the calibration standards as it is used to check on the accuracy and precision of the analysis performed.

8.7.2.2 The daily quality control sample can be prepared in the on-site laboratory from analytical reagent grade chemicals or can be purchased from an external provider.

8.7.2.3 Plotting the results of quality control analyses over time will allow the water supplier to check any trends that may be developing (e.g. fluoride concentration of quality control samples may be gradually dropping over time, in which case corrective action may be required).

8.7.2.4 If there is a greater than 0.2 mg/L difference in fluoride concentration between the locally and externally analysed monthly control samples, then the reason for the discrepancy should be investigated.

8.7.2.5 It is good practice to record the details of fluoride standards and reagent chemicals, as well as the results from daily quality control samples. This will help ensure the results of fluoride analyses are accurate. In terms of reagent chemicals and fluoride standards, the following records should be kept:

- *batch numbers*
- *expiry date*
- *comparison of results when changing from one batch to another*
- *quality assurance documentation from the manufacturers.*

8.7.2.6 Where online analysers are used, water suppliers should conduct daily bench-top or laboratory analysis of the fluoridated water – using TISAB – and compare the results of this analysis with the results from the online analyser. The SPADNS method may be used as an alternative to the TISAB ISE method. Where significant differences are observed between the two sets of results, investigations should be undertaken to determine the cause of the discrepancy.

8.7.2.7 Water suppliers should ensure TISAB and sample flow rates to the online analyser are stable and within established limits. For online analysers using TISAB, this can be checked by measuring the pH of the waste stream.

8.7.2.8 When a free fluoride online analyser is used, the water supplier should adopt the following additional quality control practices to ensure the system produces accurate results:

- *water suppliers should check the performance of the online analyser using a quality control sample prepared by spiking unfluoridated water with a known concentration of fluoride and*
- *plot the results of the quality control samples on a chart (with the date on the x-axis and the concentration on the y-axis) to monitor any adverse trends.*

8.8 Records and reporting requirements

The Regulation contains mandatory record keeping and reporting requirements for water suppliers that supply fluoridated water. This information should be recorded electronically or in hard copy for auditing purposes.

8.8.1 For fluoridation facilities using a fluoride compound the water supplier must record, on the approved form, the daily:

- volume of fluoridated water
- amount of fluoride compound added even if the amount is zero
- calculated fluoride concentration of fluoridated water
- measured fluoride concentration in the fluoridated water from a point where the fluoride has a consistent concentration (see section 8.6.1)

8.8.2 The water supplier must record the fluoride concentration in the locally analysed monthly quality control split sample as well as the fluoride concentration in the other split sample analysed by an Australian-based laboratory (which is NATA accredited for the prescribed analysis) as noted in section 8.7.1 and the Glossary.

8.8.3 The results of the measured fluoride concentration in the monthly quality control samples ("prescribed tests") must be kept for a minimum of five years.

8.8.4 Where online fluoride analysers are used, the water supplier should record the average fluoride concentration at pre-determined periods throughout the day.

8.8.5 Records should also be kept of the following:

- results from the chemical analysis of fluoride compounds
- results from analysis of fluoride concentration in raw water
- maintenance and calibration records of plant and equipment.

8.8.6 All other fluoride results from NATA-accredited laboratories should be recorded, maintained and made available for auditing.

8.8.7 Records documenting fluoridation facility operation, particularly those relating to regulatory requirements, must be available to persons authorised under the Act for inspection.

8.8.8 When the fluoridation facility ceases operation for a continuous 14-day period, the water supplier must notify Queensland Health, using the approved form (Form 2 Notice-Period of non-operation), within 1 business day of the end of the 14-day period.

8.8.9 When the fluoridation facility resumes operation after a period of non-operation for a continuous period lasting 14 days or more, the water supplier must notify Queensland Health, using the approved form (Form 3 Notice – Resumption of operation), within 5 business days of operation resuming.

8.8.10 The water supplier must complete Fluoridated Water Quarterly Reports in the approved form (Form 5 Notice – Fluoridated Water Quarterly Report). The completed form must be submitted to the Chief Executive of the Department of Health within 30 business days of the completed quarter.

8.8.11 The quarterly report must contain the following information:

- the number of samples taken for the reporting period
- the quarterly average measured fluoride concentration in the fluoridated water
- the maximum measured fluoride concentration
- the minimum measured fluoride concentration in the fluoridated water
- the prescribed concentration for the local government area
- the number of times the fluoride concentration exceeded 1.5 mg/L, and
- in instances where the average measured fluoride concentration is not within 0.1 mg/L of the prescribed concentration, an explanation as to why the prescribed concentration was not met.

8.9 Equipment calibration

All fluoride dosing facility operators involved in fluoride analysis should follow an SOP when calibrating equipment and analysing fluoride samples.

8.9.1 An SOP should be established for the calibration of analytical equipment.

8.9.1.1 It is essential that calibration standards are kept at the same temperature as the fluoridated water sample. This can be achieved by either keeping the calibration standards at room temperature and waiting for the fluoridated water sample to come to room temperature before analysis or keeping the calibration standards in a water bath using a continuously running fluoridated water sample, in which case the analysis can be done immediately. The potential impact of this issue is greatest where the diurnal temperature range is large, and the laboratory area is not air-conditioned.

8.9.1.2 Calibration standards should include at least three points between 0.5 and 2 mg/L (e.g. 0.5, 1.0, 2.0 mg/L).

8.9.1.3 Calibration records should be maintained. Information from instrument calibration, such as slope, can identify changes in performance, such as sensitivity changes, in fluoride meters and electrodes. Calibration records will identify when instrumentation needs servicing or replacing.

8.9.1.4 It is important to follow manufacturer's instructions with regard to the process of calibrating the equipment for the method used for fluoride analysis. Instructions should indicate any interference likely to affect the fluoride reading.

8.9.1.5 Water suppliers should calibrate both bench top and online analysers at least daily unless it can be demonstrated a reduced frequency is appropriate. Water suppliers should also ensure the slope and the instrument zero are within the limits recommended by the manufacturer.

8.9.1.6 When a free fluoride online analyser is used, the water supplier should prepare the relevant calibration standard solutions with representative, unfluoridated water (that is, representative of the water to be dosed). Calibration of the online analyser should always be undertaken with these specially prepared standard solutions to eliminate interference caused by differing pH or ionic strength. The natural background level of fluoride in the unfluoridated water should be taken into account when preparing the calibration standard solutions. New standard solutions should be prepared in response to significant changes in water chemistry.

8.9.2 Standards used for calibration should be the same temperature as the fluoride sample being analysed.

8.10 Equipment maintenance

8.10.1 Daily inspections should be conducted to assess the condition of equipment in the fluoridation facility.

8.10.1.1 If a water supplier faces particular difficulties having an operator attend the site each day of the week - to fulfil the daily sampling and analysis requirements and to inspect the equipment in the fluoridation facility, the water supplier may wish to approach their local Queensland Health Public Health Unit to discuss the possibility of less frequent site visits. Water suppliers wanting to reduce the frequency of site visits by operators should be able to demonstrate a history of appropriate operation, that risks managed through daily site visits will be managed through alternative risk management practices and that appropriate quality control procedures are in place for online analysers used at the site. See section 11 for a link to contact details for Public Health Units.

8.10.2 The fluoridation facility and associated equipment should be adequately maintained to achieve reliable operation.

8.10.3 Saturator tanks should be periodically cleaned out to remove the build-up of insoluble cinders.

8.10.3.1 Insoluble cinders result from the accumulation of insoluble material present in sodium fluoride, and precipitates that can form when sodium fluoride is dissolved in a saturator tank. The accumulation of insoluble cinders can lead to saturation not being achieved and, consequently, underdosing. Table 2 below provides recommended cleaning frequencies based on the following assumptions:

- *The water used to dissolve the sodium fluoride has a hardness of less than 75 mg/L, and*
- *The operating volume of the saturator tank is, or is approximately equal to, 210L.*

Table 2: Recommended cleaning frequency for saturator tanks

Number of 25kg bags used per week	Recommended cleanout frequency
Up to 2 bags	Annually
2 to 4 bags	6 monthly
4 to 7 bags	4 monthly
>7 bags	2 monthly

8.10.3.2 Once removed, water suppliers should dispose of the solution and insoluble cinders in accordance with relevant regulations and guidelines (see section 8.14 for guidance regarding the relevant environmental protection regulations and guidelines).

8.10.3.3 Further information on the accumulation of insoluble cinders, and recommended management strategies, is available in American Water Works Association Standard B701-18 – Sodium Fluoride.

8.11 Emergency response planning

8.11.1 Emergency response planning for overdosing incidents should be developed and documented as part of the risk management plan discussed in section 3.1 of this Code.

8.11.1.1 Ideally, the risk assessment conducted during the planning of the fluoridation facility should have identified all possible causes of overdosing and appropriate control measures will have been developed and implemented to deal with each one. These controls should be integrated with existing risk management documentation and should form part of the water service provider's Drinking Water Quality Management Plan.

8.11.1.2 The ADWG maximum health guideline value for fluoride is 1.5 mg/L. If this value is exceeded, corrective actions should be taken and the incident must be reported immediately to Water Supply Regulation within the Department of Regional Development, Manufacturing and Water.

8.11.1.3 Water Supply Regulation will in turn notify the relevant Public Health Unit and the Department of Health.

8.11.1.4 Appendix 3 details actions which may be appropriate in the event of an overdosing incident.

8.11.2 An overdosing event can be defined as when the fluoride concentration in treated water or the reticulation system is over 1.5 mg/L.

8.11.3 Where one or more online analysers are used, and are interlocked with the fluoridation system, fluoride concentration readings greater than 0.3 mg/L above the prescribed fluoride concentration for a significant period of time should result in an automatic shutdown of the fluoridation system and generate an alarm. The treatment plant supervisor should be notified, and the cause of the elevated concentration should be investigated and rectified before recommencing fluoridation system operations.

8.11.3.1 Shutting the fluoridation facility down in such circumstances will help ensure that the limit of 1.5 mg/L is never exceeded.

8.11.4 The water supplier's emergency response plan should also contain details on how to ensure that customers serviced before a storage reservoir are not exposed to elevated levels of fluoride in the event of an overdosing incident.

8.11.5 Emergency response planning for fluoridation should include:

- procedures for shutting down fluoridation equipment in the event of overdosing
- actions required to identify and rectify problems
- actions required to advise and protect the health of the public in the event of an overdosing event
- reporting protocols including a clear chain of command and designated responsibility.

8.12 Plant security

8.12.1 Maintenance staff, including contractors, must not be permitted to be in charge of or operate the fluoridation facility unless they have the appropriate skills, knowledge and experience as detailed in section 8.1.

8.12.1.1 Entry to the fluoridation facility by untrained persons (staff and public) needs to be controlled both for the protection of the fluoridation equipment and for personal safety. Maintenance workers need to be supervised to prevent impacts on the fluoridation process. The fluoridation facility manager and competent operators are responsible for ensuring maintenance staff do not put themselves, the fluoridation process, or the environment at risk. Best practice could involve the use of a work permit system that includes a systematic risk assessment of the potential impact on the fluoridation process from the work being done.

8.12.2 The water supplier should ensure that visits by any personnel to the fluoridation room are authorised and a qualified operator accompanies visiting personnel.

8.12.2.1 The operator and the maintenance staff should assess the risks together and agree on any special controls required while the work is being carried out (e.g. for work carried out while water flow is off, maintenance staff will not switch dosing equipment on or off for testing without the knowledge of the operator). The degree of control required will depend on the knowledge, training and experience of the maintenance staff.

8.12.3 Once visitors have entered the fluoridation room, the presence of the competent operator may not be required, provided that the competent operator is satisfied that:

- The visitors have been adequately instructed and will not be in contact with the fluoride compound or any part of the fluoridation equipment; or
- The visitors have been given appropriate instruction and provided with the appropriate personal protective equipment if contact with fluoride compound is likely when maintaining specific items of the fluoridation equipment.

8.12.4 The building housing the fluoridation facility should be a solid lockable construction and kept locked when unattended to prevent unauthorised entry.

8.12.4.1 The fluoridation facility (plant room/building, fluoride compound storage areas, dosing lines etc) should be of sufficiently solid construction to minimise the risk of damage to equipment due to vandalism. The plant design should minimise the risk of accidental damage to equipment such as dosing lines, valves etc. where feasible.

8.13 Workplace health and safety

This section applies to all fluoridation facilities. All activities relating to fluoridation facilities must be undertaken with maximum regard for the health and safety of workers. Factors to consider include (but are not limited to) plant, exposure to hazards, ergonomics and hazardous manual tasks.

8.13.1 All safety obligations under the *Work Health and Safety Act 2011* (WHS Act 2011) must be met.

8.13.1.1 Water suppliers need to regularly review the safety requirements of the WHS Act and associated Regulations to ensure compliance. General Risk and Workplace Management provisions are contained within Chapter 3 of the Work Health and Safety Regulation 2011 (WHS Regulation 2011).

8.13.1.2 A risk assessment, as described in section 3.1 of this Code, should include all safety aspects of the design, commissioning, operation, testing, maintenance, repair and decommissioning of a fluoridation facility. The risk assessment process should involve a range of stakeholders such as plant operators, managers and technical experts. Hazards and control mechanisms should be identified in the risk assessment and incorporated into the design. Appropriate control measures should be implemented. Based on the hierarchy of controls, hazards should be eliminated wherever possible, followed by use of substitution, isolation and engineering controls. The use of personal protective equipment should not be relied upon as a sole control measure and will often be used in conjunction with other controls.

8.13.1.3 Water suppliers using fluoride compounds that are hazardous chemicals also need to comply with Chapter 7 – Hazardous chemicals of the WHS Regulation.

8.13.1.4 Under the above legislative provisions, water suppliers must identify foreseeable hazards associated with handling, storing, or using fluoride compounds at their workplace, manage their risks including applying the Regulation's hierarchy of controls, and maintain and review all of the corresponding controls.

8.13.1.5 Water suppliers must ensure the airborne concentration of fluoride compounds does not exceed the exposure standard and, where the water supplier is not sure if the exposure standards are being exceeded or not, conduct measurements of the airborne concentrations. The current exposure standard for fluorides is 2.5 mg/m^3.

8.13.2 Water suppliers must provide workers handling fluoride compounds and/or storage and handling systems with adequate information, training and instruction on how to handle hazardous chemicals and how to operate storage and handling systems.

8.13.3 Water suppliers with >250 kg or L of fluorosilicic acid or >1000 kg of sodium fluoride or sodium fluorosilicate must comply with the placarding requirements of Schedule 13 of the WHS Regulation. Placarding quantities referred to in this section are based on general chemical classifications given at HCIS (Hazardous Chemical Information System - http://hcis.safeworkaustralia.gov.au/HazardousChemical). Always check the manufacturer's Safety Data Sheet (SDS) Section 2 for the correct hazard classification.

8.13.4 Water suppliers with >2,500 kg or L of fluorosilicic acid or >10,000 kg of sodium fluoride or sodium fluorosilicate must have a manifest. These water suppliers must provide Queensland Fire and Emergency Services with a copy of their emergency plan and notify Workplace Health and Safety Queensland using 'Form 73' that they are a manifest quantity workplace, as well as provide them with the manifest. More information about preparing a manifest and notification can be found at: https://www.worksafe.qld.gov.au/safety-and-prevention/hazards/hazardous-chemicals/Working-with-large-quantities-of-hazardous-chemicals/are-you-a-manifest-quantity-workplace. Manifest quantities referred to in this section are based on general chemical classifications given at HCIS (Hazardous Chemical Information System - http://hcis.safeworkaustralia.gov.au/HazardousChemical). Always check the manufacturer's SDS Section 2 for the correct hazard classification.

8.13.5 Safety Data Sheets (SDSs) must be available on-site for all fluoride compounds.

8.13.5.1 An SDS is essential for providing information on fluoride compounds such as effects from exposure and details on safe storage and handling and how to manage leaks and spills. SDSs must be available to workers and any other person that could be exposed to the chemicals. E.g. emergency services staff.

8.13.6 Appropriate personal protective equipment (PPE) must be available for operator protection.

8.13.6.1 Depending on the activity being performed, PPE for fluoride dosing facilities may include:

- *elbow length impervious rubber or plastic gloves, long sleeve shirt, trousers, full length impervious rubber or plastic apron for protection of skin*
- *impervious rubber or plastic boots*
- *for plants using dry fluoride compounds, a full-face mask with type P3 respiratory filters (as per 'AS/NZS 1715 Selection, use and maintenance of respiratory protective equipment')*
- *for plants using fluorosilicic acid, where there is a risk of exposure to acid fumes, a full-face respirator fitted with an acid gas filter and/or a full-face shield or splash-proof safety goggles.*

8.13.7 If a worker is exhibiting a symptom that could be related to acute occupational fluoride exposure, they should consult a medical practitioner with a copy of the relevant SDS. Symptoms of acute occupational fluoride exposure include increasing stiffness in the back, nausea, vomiting, abdominal pain, diarrhoea, fatigue and drowsiness.

8.13.8 Emergency eyewash and showers, that comply with AS/NZS 4775, and adequate routine washing facilities should be available wherever fluoride compounds are stored and handled.

8.13.9 Appropriate equipment for cleaning up and disposing of spills or leaks must be provided at the workplace and used solely for this purpose. Water suppliers must also provide workers handling fluoride compounds with adequate information, training and instruction on how to clean up spills and leaks, including how to use clean up and disposal equipment.

8.13.10 Dry clean up, when managed safely, may be a more effective method of removing the bulk of larger spills than hosing the spilt powder or granules into a sump or drain. The collection, treatment or disposal of the resulting contaminated water may be more difficult to manage than dry chemical waste.

8.13.11 Small spills, or the final clean-up of larger spills, could be undertaken with the use of a mop or wet rag.

8.13.12 Clean up procedures should address the correct use of PPE and ways of minimising dust creation.

8.13.13 The water supplier must consider how it will dispose of spilt fluoride compound once contained as part of its procedures and instruction, information and training of its workers.

8.13.14 The obligations applicable under the WHS Act and Regulation are determined by the quantity of hazardous chemicals at the facility. Every facility holding hazardous chemicals has obligations under WHS legislation.

8.13.14.1 The quantities of fluoride compounds and other chemicals stored or handled at the facility may invoke specific requirements under the WHS Act including safety signage and warning placards. For guidance on warning placards refer to Appendix 4.

8.13.14.2 A number of documents including codes of practice, guidelines and Australian Standards are available to assist with complying with the legislative requirements for operator safety including:

- *Managing the risks of plant in the workplace - Code of Practice 2021 (Workplace Health and Safety Queensland 2021)*
- *Electrical safety Code of Practice 2020 – Works (Workplace Health and Safety Queensland)*
- *Managing risks of hazardous chemicals in the workplace Code of Practice 2021 (Workplace Health and Safety Queensland)*
- *Hazardous manual tasks Code of Practice 2021 (Workplace Health and Safety Queensland)*
- *AS3780 The storage and handling of corrosive substances (relevant to hydrofluorosilicic acid)*
- *AS/NZS4452 The storage and handling of toxic substances (relevant to powdered fluoride compounds)*
- *AS1319 Safety signs for the occupational environment*
- *ISO 31000 Risk Management – Principles and guidelines*
- *ISO 45001 Occupational health and safety management systems- Requirements with guidance for use.*
- *AS/NZS 1715 Selection, use and maintenance of respiratory protective devices.*
- *Australian Code for the Transport of Dangerous Goods by Road & Rail (National Transport Commission).*

8.13.14.3 Further information on workplace health and safety requirements can be found at the Workplace Health and Safety Queensland web site - www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice.

8.14 Environmental protection

Water suppliers must consider environmental protection laws and take all reasonable and practicable steps to prevent environmental harm from occurring.

8.14.1 The water supplier must comply with the *Environmental Protection Act 1994* (EP Act) and associated regulations, policies and approvals.

8.14.1.1 The Environmental Protection Regulation 2019 (EP Regulation) places a number of obligations on generators, transporters and receivers of regulated and trackable wastes. These include, but are not limited to, recording prescribed information about the waste, providing copies of the prescribed information to the transporter and the Department of Environment and Science (DES), and only using a licensed transporter to transport the waste. The water supplier should therefore prepare, document and implement an SOP that addresses the disposal of fluoride waste that is consistent with the trackable waste requirements of the EP Regulation and outlines the disposal plans for contaminated fluoride compound and fluoride compound containers. The options for disposal of fluoride compound/s may include returning it to the supplier, disposal through a waste disposal contractor or disposal in the local waste landfill (if permitted by the operator of the landfill). Concentrated fluoride compounds (powder or solution) are hazardous to wildlife and disposal options should be considered carefully. Further guidance on the management of trackable wastes can be found on the DES website at: https://environment.des.qld.gov.au/management/waste/business/tracking.

8.14.1.2 The water supplier has a general environmental duty under the EP Act not to carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm. If clarification of EP Act requirements is necessary, water suppliers should consult DES.

8.14.2 The disposal of analytical solutions containing TISAB must comply with applicable regulatory requirements.

8.14.2.1 The most common methods for disposing of analytical solutions containing TISAB are discharging to sewer and, where there is no access to a sewer, storing the solutions in a holding tank for later disposal by waste management services. Where it is anticipated that TISAB-containing solutions will be discharged to sewer, the water supplier should consult with the operators of the relevant sewage treatment plant in the design phase to ensure this disposal option will comply with local regulations. Less frequently, water suppliers may prefer to discharge these solutions to the environment. In such cases DES should be consulted in the design phase to ensure all applicable regulations and guidelines are complied with.

8.14.3 The plant risk assessment discussed in section 3.1 should consider the potential for environmental impacts associated with unloading and spill containment of fluoride compounds.

8.14.4 The water supplier should prepare, document and implement an SOP for an emergency response to a spill of fluoridation chemical including emergency contact numbers. This should ensure that appropriate spill kits are located in key areas of the facility to enable safe and effective management of minor spills and leaks and that safety procedures detailed in the SDS are followed when a large spill of fluoride compound occurs.

8.14.5 Empty fluoride compound containers and contaminated fluoride compounds are considered 'regulated' and 'trackable' waste under the EP Regulation. The water supplier should therefore prepare, document and implement an SOP consistent with the requirements of the Regulation for the disposal of these items.

9 Glossary

Australian Standards (AS/NZS)

Standards are published documents setting out specifications and procedures designed to ensure products, services and systems are safe, reliable and consistently perform the way they were intended to. They establish a common language which defines quality and safety criteria. Where standards are referred to in the Code, it is recommended that the most recent version of the standard be consulted, unless otherwise prescribed under legislation.

Australian Drinking Water Guidelines (ADWG)

The Australian Drinking Water Guidelines (2011) provide a risk management framework to assure the consistent supply of safe drinking water to protect public health. They include maximum health guideline values for a range of water quality parameters, including fluoride.

Batch analysis certificate

Batch analysis certificate, for a fluoride compound, means a certificate stating the concentration of impurities in the fluoride compound issued by an accredited laboratory to the manufacturer, importer or supplier of the fluoride compound.

Blending

Blending is a method of fluoridating water supplies whereby a source water, containing elevated levels of naturally occurring fluoride, is added to the water supply in a ratio such that the prescribed fluoride concentration is achieved in the blended water.

Calculated fluoride concentration

The calculated fluoride concentration (CFC) is the theoretical concentration of fluoride ions in the water after addition of the fluoride compound. It is calculated in mg/L using the following:

a) the amount (kg) of fluoride compound added to water calculated using the loss of volume from a tank (day tank or otherwise) or loss of weight from a tank (day tank or otherwise)

b) % of fluoride ion in the fluoride compound (NaF = 45.2%; H2SiF6 = 79.1%; Na2SiF6 = 60.6%)

c) Purity of the fluoride compound (% purity). This information can be obtained from the batch analysis certificate

d) volume of water treated in ML

e) fluoride concentration in the raw water before treatment (F in raw water in mg/L)

Equation

Using a) to e) above, the equation is as follows:

$$CFC = \frac{(a \text{ x } b \text{ x } c)}{(d \text{ x } 100 \text{ x } 100)} + e$$

Or written in full, the equation is as follows:

$$CFC\ mg/L = \frac{(amount\ of\ chemial\ added\ (kg) \text{ x } \%\ of\ fluoride\ ion \text{ x } \%\ purity)}{(Volume\ of\ water\ treated\ ML \text{ x } 100 \text{ x } 100)} + F\ in\ raw\ water\ mg/L$$

The calculated fluoride concentration should equal the measured fluoride concentration. It will also be a 24-hour average fluoride dose rate.

Calibration standard

A solution with a known concentration of the pure fluoride compound used to evaluate the concentration of fluoride present in the sample solution. Generally, at least three calibration standards, of increasing fluoride concentration, are used to plot a calibration curve with fluoride concentration on the x-axis and instrument response on the y-axis.

Chief Executive

Chief Executive means the Director-General of the Department of Health, Queensland.

Daily quality control sample

The daily quality control sample is a sample of known fluoride concentration that is analysed alongside the routine treated water sample using the same analytical equipment. This sample is intended to alert the operator to any problems with the analytical method procedure and/or problems with analytical equipment.

Dangerous goods

Dangerous goods are defined under the Australian Dangerous Goods Code and are classified on the basis of immediate physical or chemical effects, such as fire, explosion, corrosion and poisoning affecting people, property or the environment.

Dosing

Dosing refers to the process of using a fluoride compound to fluoridate the drinking water supply.

Dry Fluoride feed system

Feed system where dry chemical, sodium fluoride or sodium fluorosilicate, is metered at a predetermined rate.

Externally analysed fluoride concentration

A fluoride sample analysed at an external laboratory, not at the fluoride dosing facility site. This laboratory must be NATA accredited for fluoride analysis.

Fluoride compound

There are three prescribed fluoride compounds referenced in the Water Fluoridation Regulation 2020: fluorosilicic acid (H_2SiF_6), sodium fluoride (NaF) and sodium fluorosilicate (Na_2SiF_6).

Form of fluoride

The four forms of fluoride prescribed under the Water Fluoridation Regulation 2020 are: fluorosilicic acid (H_2SiF_6), sodium fluoride (NaF), sodium fluorosilicate (Na_2SiF_6) and naturally occurring fluoride contained in water.

Fluoridation

Fluoridation is the addition of a prescribed form of fluoride to drinking water for the purpose of oral health benefit. Fluoridation involves the controlled addition of a form of fluoride to a public water supply to achieve the prescribed fluoride concentration for the local government area.

Fluoridation facility

Relates to facilities that include dosing or blending fluoridation systems.

The building and equipment involved in the fluoridation of drinking water, including chemical storage areas, dosing and control equipment, safety equipment and any other fixtures used for, or associated with, the purpose of fluoridation.

Fluoride dosing system

The dosing and control equipment involved in the fluoridation of drinking water with a fluoride compound.

Fluoride concentration

Fluoride concentration means the concentration of fluoride ion in water. Where fluoride concentration is mentioned in the Water Fluoridation Regulation 2020 or this Code of Practice, it refers to the concentration of the fluoride ion.

Hazardous chemicals

Hazardous Chemicals are defined in Schedule 19 of the Work Health and Safety Regulation 2011.

Interlocked

An interlocked fluoridation system is interconnected in such a way that the failure of any one part of the fluoridation system results in the shutdown of the entire fluoridation process and cannot be automatically restarted. An interlocked system must also ensure that the automatic fluoridation equipment cannot operate unless it receives confirmation of water flow through the fluoridation system via a water flow measuring device.

Ion chromatography method

The fluoride ion can be analysed by ion chromatography. This method can be automated and is generally used in larger laboratories that handle large numbers of samples. It is not a bench top system found at most water treatment plants. Ion chromatography is an analytical technique in which the negatively charged fluoride ions in the sample are separated from the other anionic species in the sample by an anion exchange column. The conductivity of fluoride ions is measured and is directly proportional to the concentration of fluoride in the sample.

Ion-selective electrode (ISE) method

The fluoride ion in a water sample can be detected by an electrode sensitive to the fluoride ion. This method can be adapted to field or online instrumentation as well as a laboratory instrument. It is generally the method of choice for most on-site laboratories.

Local government area

Local government areas are listed in Schedule 1 of the Water Fluoridation Regulation 2020. Section 4 of the Water Fluoridation Regulation 2020 prescribes optimal fluoride concentrations for particular local government areas.

Locally analysed fluoride concentration

Fluoride sample analysed at the on-site laboratory.

Manifest

A written summary of the hazardous chemicals used, handled or stored at a workplace.

Measured fluoride concentration

The concentration of fluoride measured using one of the prescribed analyses in the Water Fluoridation Regulation 2020.

Monthly quality control sample

The monthly quality control sample is a sample that is taken from the fluoridated water or the reticulation system and split into two portions. One portion is analysed at the on-site laboratory using the fluoride method routinely used at the treatment plant and the other portion is sent away to a laboratory that is NATA accredited for fluoride analysis.

National Association of Testing Authorities (NATA)

NATA is the authority responsible for the accreditation of laboratories, inspection bodies, calibration services, producers of certified reference materials and proficiency testing scheme providers throughout Australia. See: www.nata.com.au.

Naturally occurring fluoride

Some groundwater sources in western Queensland that draw their water from the Great Artesian Basin have concentrations of fluoride above the level required under the Water Fluoridation Regulation 2020. This means that this water can be blended with water containing low fluoride concentrations to achieve the appropriate concentration for the location specified in Schedule 1 of the Water Fluoridation Regulation 2020.

Programmable Logic Controller (PLC)

A computerised device used in the automation of electromechanical processes.

Prescribed fluoride analysis

The Water Fluoridation Regulation 2020 lists three approved methods for undertaking prescribed fluoride analyses. These are ion selective electrode, SPADNS and ion chromatography.

Prescribed fluoride concentration

The prescribed fluoride concentration is specified in Section 4 of the Water Fluoridation Regulation 2020 is:

- if the water supply is located in a local government area listed in Schedule 1, part 1 – 0.6 mg/L
- if the water supply is located in a local government area listed in Schedule 1, part 2 – 0.7 mg/L

- if the water supply is located in a local government area listed in Schedule 1, part 3 – 0.8 mg/L.

Quarter

Quarter in the Water Fluoridation Regulation 2020 means each of the following:

- 1 January to 31 March of each year
- 1 April to 30 June of each year
- 1 July to 30 September of each year
- 1 October to 31 December of each year

Quarterly average measured fluoride concentration

This is a single value that is calculated by adding up all the measured fluoride concentrations for samples taken during the quarter and dividing this number by the number of samples. For example, for a 5-day period, 5 samples are taken and fluoride is measured. The results are 0.7, 0.6, 0.7, 0.8 and 0.7 mg/L. The average measured fluoride concentration in this example is 0.7 mg/L {(0.7 + 0.6 + 0.7 + 0.8 + 0.7) ÷ 5}.

Reticulation system manager

The entity that is responsible for reticulating the fluoridated water to customers.

SCADA

Supervisory Control and Data Acquisition. A SCADA system is a control system that receives signals from components in the water treatment system. An operator can usually monitor any aspect of the treatment system such as levels of chemical tanks and water reservoirs or operation of pumps. SCADA systems generally alert an operator when a component in the system fails. The operator can generally access the SCADA system via a computer to see why an alarm was generated.

SPADNS method

The SPADNS (Sodium 2-(parasulfophenylazo)1,8-dihydroxy-3,6-naphthalene disulfonate or other synonyms) method is a colourimetric method for determining fluoride concentration in water. Fluoride ions react with the zirconium-SPADNS dye lake resulting in a loss of colour. The residual colour of the dye is then measured at 570 nm in a spectrophotometer. The concentration of the fluoride ion is inversely proportional to the intensity of the colour. This method is suitable for fluoride ion analysis in on-site laboratories.

Slope

The slope is the gradient of the ISE calibration curve (see definition for calibration standard above). It is a constant and describes how the response from the analytical equipment changes in response to changes in fluoride concentration under the conditions in which the calibration curve is constructed.

Note: the slope is temperature dependent. Most ISE instruments measure the slope automatically as part of the instrument calibration.

Water Supplier

The entity that operates the fluoride dosing facility that adds fluoride to the water supply.

Water Supply Regulation

The state government agency in the Department of Regional Development, Manufacturing and Water that administers the *Water Supply (Safety and Reliability) Act 2008*.

Water Fluoridation Act

Water Fluoridation Act means the Queensland *Water Fluoridation Act 2008*.

Water Fluoridation Regulation

Water Fluoridation Regulation means the Queensland Water Fluoridation Regulation 2020.

10 References

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11 Public Health Unit contact details

Note that an up-to-date list of contact details for Public Health Units is maintained at:

www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units

12 Appendices

12.1 Appendix 1 – Guidance on quality of the prescribed forms of fluoride

Water suppliers are required to ensure that the forms of fluoride used in water fluoridation are of an appropriate quality to ensure public health is not jeopardised and to minimise workplace health and safety risks and operational issues which could contribute to periods of non-operation.

Fluoride compounds

For the purpose of determining impurity specifications for fluoride compounds, it is appropriate to think of fluoride as a water treatment chemical and adopt the methodology for water treatment chemicals detailed in section 8.8 of the ADWG. In essence this methodology requires that when a certain water treatment chemical is dosed, the concentration of any impurities in the treated water, as a result of that dosing, should not exceed 1/10th of the relevant ADWG guideline value.

Maximum Impurity Content values (MICs) have been calculated and are provided in Table 1. Water suppliers must compare the results detailed in the 'batch analysis certificate' or 'certificate of analysis' accompanying a delivery of fluoride compound with the specifications detailed below in Table 1 to determine if the fluoride compound is of an appropriate quality. It is important to note that these are maximum allowable levels, and in practice the concentration of residues is much lower than these values. Water suppliers are encouraged to adopt more stringent impurity limits where these can be achieved cost-effectively.

Table 1

Impurity	Sodium Fluorosilicate	Sodium Fluoride	Fluorosilicic Acid
	MIC mg/kg[1,2]	MIC mg/kg[1,2]	MIC mg/kg[1,2]
Antimony	180	130	47
Arsenic	590	440	160
Barium	20,000	30,000	32,000
Beryllium	3,600	2,600	950
Cadmium	120	88	32
Total Chromium[3]	3,000	2,200	790
Copper	20,000	30,000	32,000
Lead	590	440	160
Mercury	59	44	16
Nickel	1,200	880	320

Impurity	Sodium Fluorosilicate	Sodium Fluoride	Fluorosilicic Acid
	MIC mg/kg[1,2]	MIC mg/kg[1,2]	MIC mg/kg[1,2]
Selenium	590	440	160
Uranium	1,000	750	270

Table notes

1. Assuming fluoride ion dose rate of 1 mg/L.
2. The MIC data are derived assuming 97% purity for Sodium Fluoride, 98% for Sodium Fluorosilicate, and 20% for fluorosilicic acid. If the fluoridating compound contained impurities at the levels shown here, the contribution of the impurity to the water supply after dosing (at 1 mg/L fluoride) would be 10 times lower than the ADWG drinking water guideline. For example, if a batch of sodium fluoride powder contained 440mg/kg of lead (Pb), the contribution to the water supply after dosing at a level of 1 mg/L fluoride, would be 0.001 mg/L. Note that the ADWG guideline value for Pb in drinking water is 10 times higher than this value i.e. 0.01 mg/L.
3. Relates to Total Chromium. It is recommended that a "total" chromium determination in the fluoridating compounds is initially performed and if the concentration equals or exceeds the MIC value, Cr(VI) analysis should then be conducted.

Further to these MICs, batches of fluoride compound should also comply with the specifications in Table 2.

Table 2

Fluoride compound	Minimum Purity (%)	Moisture %w/w	Insoluble Matter %w/w	Maximum free acid content (%)
Sodium Fluorosilicate	98	0.5	0.5	N/A
Sodium Fluoride	97	0.5	0.6	N/A
Fluorosilicic Acid	20-30	N/A	N/A	1 (expressed as HF)

Naturally occurring fluoride

The ADWG should be used as a guide to determine the quality of the water source containing naturally occurring fluoride. The water source should be sampled to verify its quality and suitability for blending. The blending of a naturally occurring fluoride source should not result in aesthetic or health guideline values in the ADWG being exceeded

Workplace Health and Safety and Operational Concerns

In addition to addressing public health concerns, it is also important to ensure that the fluoride compound used is of suitable physical quality such that it is not likely to create additional workplace health and safety issues and/or operational issues that could lead to unnecessary periods of non-operation.

Therefore, dry fluoride compounds should be free flowing and free of lumps or debris that could interfere with efficient feeding, dosing or other handling equipment.

Industry standards, such as the relevant American Water Works Association (AWWA) standards, provide useful guidance in these respects. It is therefore highly recommended that water suppliers obtain a copy of the relevant standard for their reference.

Fluoride compound	Relevant standard
Sodium Fluorosilicate	ANSI/AWWA B701-18
Sodium Fluoride	ANSI/AWWA B702-18
Fluorosilicic Acid	ANSI/AWWA B703-19

12.2 Appendix 2 - Approved forms

The following forms are approved under the Water Fluoridation Regulation 2020 (the Regulation).

- Form 1 – Fluoridation notice. This form must be used to notify the Chief Executive of the Department of Health that a water supplier intends to add, or cease to add, fluoride to a public potable water supply from a stated date. This notice must be submitted at least 30 days prior to the stated date. This fluoridation notice must also be published at least once in a newspaper circulating in the area of the state serviced by the water supply.
- Form 2 – Notice of non-operation. This form must be used to notify the Chief Executive if a fluoride dosing facility is continuously non-operational for a period of 14 days. This form must be submitted to the Chief Executive within 1 business day after the end of the 14-day period.
- Form 3 – Notice of resumed operation. This form must be used to notify the Chief Executive when operation of fluoride dosing equipment resumes after a notifiable period of non-operation. This form must be submitted to the Chief executive within five business days of operation resuming.
- Form 4 A, B, C & D – Recording requirements. These forms must be used to ensure that the recording requirements of the Regulation are met. If these forms are filled in correctly, the requirements of section 22 of the Regulation will be fulfilled. Only one form, either A, B, C or D needs to be used depending on the fluoridation system being used at the treatment plant.
  - Form A is for dry feeder systems.
  - Form B is for acid feed systems.
  - Form C is for batch solution feed systems.
  - Form D is for saturator systems.
- Form 5 – Quarterly reporting form. This form must be used when submitting the quarterly reports as required under section 23 of the Water Fluoridation Regulation. The completed form must be submitted to the Department of Health within 30 business days of the completed quarter.

A copy of all approved forms can be found at www.health.qld.gov.au/public-health/industry-environment/environment-land-water/water/fluoridation.

12.3 Appendix 3 - Actions in event of overdosing

If fluoride concentration in treated water is:	Perform the following Actions:
> 1.5 mg/L	1. Manually shut down fluoridation facility immediately, if not already done so. 2. Immediately notify your supervisor 3. Immediately notify Water Supply Regulation within the Department of Regional Development, Manufacturing and Water by phoning 1300 596 709. 4. Immediately implement your Emergency Response Plan. This Plan should include, at a minimum, the following actions: i. Allow the water treatment plant to run without the fluoridation facility operating to dilute the water in the treated water reservoir (unless there are connections to the main before a service reservoir in which case immediately notify affected residents and provide alternative drinking water supplies) ii. Sample within the reticulation system to determine the extent of the overdosing event. iii. Work with the relevant Public Health Unit(s) to ensure public health is not jeopardised. Complete and submit the relevant incident notification form to Water Supply Regulation as soon as reasonably practicable. See: www.dnrme.qld.gov.au/__data/assets/pdf_file/0010/45595/wsr017-noncompliance.pdf iv. Determine the reason for the overdose and implement appropriate corrective actions to ensure overdosing doesn't happen again. 5. Once the problem has been rectified, restart the fluoride plant. 6. Closely monitor treated water. 7. The overdosing incident must be recorded on the relevant fluoridated water quarterly report – "Number of samples exceeding 1.5 mg fluoride/L" (See Appendix 2 – Form 5).

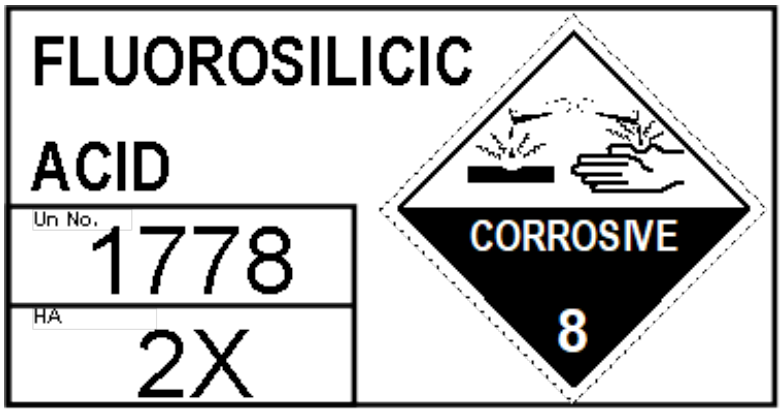
12.4 Appendix 4 - Information placards

Placards provide visual warning of the hazards associated with hazardous chemicals present at the premises and are a requirement under the Work Health and Safety Act 2011. The form and dimensions of the placards are specified in Schedule 13 of the Work Health and Safety Regulation 2011. Premises storing hazardous chemicals must display an Outer Warning Placard at all entrances to the facility as shown below.

In addition to the outer warning placard for the facility, placards are required at each individual chemical storage area.

Placards for hazardous chemicals in tanks

Placards for the storage of hazardous chemicals in tanks are essentially the same as the full-size Emergency Information Panels (EIP) required by the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code) for bulk transport but without the bottom row showing emergency contact details, as shown below.



Example of a placard for a storage tank for Fluorosilicic acid.

The example above displays the form identifying the Proper Shipping Name, the dangerous goods class, the UN number and the Hazchem code. This information is taken from the ADG Code. The placard for the bulk storage of hazardous chemicals must be located on, or adjacent to, each tank or vessel.

Placards for hazardous chemicals in packages

Storage and handling areas for packages containing fluoride compounds must be placarded with the class label ('diamond') if the quantity in the area exceeds the quantity specified below:

For Sodium fluoride or Sodium fluorosilicate in packages such as 25 kg bags where the aggregate amount exceeds 1000 kg, the following class label is required:

For fluorosilicic acid in packages such as drums where aggregate amount exceeds 250L, the following class label is required:

A placard is also required in the area where the fluoride compound is stored. The placard must be displayed at the main point of entry to the building where the store is located, and either at every point of entry to the storage room or enclosure or adjacent to the fluoride compound.

For further information refer to Work Health and Safety Regulation 2011, Schedule 13.

12.5 Appendix 5 - Calculations for fluoridation facilities

This appendix contains a number of calculations intended to assist in the design and operation of fluoride dosing systems. Section 1 provides detailed workings for the calculations required to complete the daily record sheets while Section 2 provides the workings for a number of equations which may assist in the design of fluoride dosing systems, developing standard operating procedures, and configuring SCADA systems.

Section 1 - Daily Calculations

Calculate the fluoride ion content in fluoride compounds

Note: All worked examples rounded to 2 significant figures, unless carried forward to further calculations.

The fluoride ion content (F^-) of a fluoride compound, expressed as a percentage, is the molecular weight fraction of the fluoride ion in the dosing chemical (P) multiplied by the purity fraction of the dosing chemical (K) multiplied by 100. K, the purity fraction, is derived by dividing the % purity by 100. For example, if the purity of sodium fluoride in a particular batch is stated as 98%, then K = 0.98. For fluorosilicic acid, the molecular weight fraction of the fluoride ion in the dosing chemical is multiplied by the solution concentration.

Equation 1 $$F^- = P \times K \times 100\%$$

Where:

F^-	Is the fluoride ion content in the fluoride compound
P	is the proportion of fluoride in the molecular formula of the compound
K	is the purity of the chemical as indicated on the batch analysis certificate (powder) or concentration (liquid), expressed as a fraction

The following P values apply:

Sodium Fluoride (NaF)	0.452
Sodium Fluorosilicate (Na_2SiF_6)	0.606
Fluorosilicic Acid (H_2SiF_6)	0.791

K values for the dosing chemicals should conform to the minimum purity percentages in Table 2 of Appendix 1.

Worked example 1 of Equation 1

The batch analysis certificate for sodium fluoride indicates that purity is 98%, so K is 0.98. The fraction of fluoride ion (P) in sodium fluoride is 0.452.

$$F^- \text{ (in NaF)} = P \text{ x } K = 0.452 \text{ x } 0.98 \text{ x } 100\% = 44\%$$

Worked example 2 of Equation 1

Fluorosilicic acid in supplied as a 20% WW solution, so K is 0.20. the fraction of fluoride in fluorosilicic acid (P) is 0.791.

$$F^{-}(H_2SiF_6) = P \text{ x } K \text{ x } 100\% = 0.791 \text{ x } 0.20 \text{ x } 100\% = 16\%$$

Calculate the strength (S) of fluoride compound in solution

The strength of a fluoride compound in a solution (S) is determined by dividing the mass of fluoride compound (m) used to make the solution by the amount of water used to dilute the fluoride compound in a solution tank (Equation 2), expressed as a percentage.

Equation 2

$$S(\%) = \frac{(m \times K)}{V} \times 100$$

Where:

S is the solution strength (%) of the fluoride compound in a solution tank
m is the mass of the fluoride compound added to the solution tank in (kg)
K is the purity of the fluoride compound as indicated on the batch analysis certificate (powder) or concentration (liquid) expressed as a fraction
V Is the volume of water in the solution tank (L)

Worked example of Equation 2

5 kg of sodium fluoride with a purity of 98% (K = 0.98) is dissolved in water and made up to a volume of 250 L in a holding tank.

$$S\ (\%) = \frac{(5\ kg \times 0.98)}{250\ L} \times 100\% = 1.96\%$$

S can also be expressed as 1.96 g/100mL, or 19.6 g/L

Calculate the amount of fluoride ion added to the water supply in one day

Dry feed systems and solution feed systems using fluorosilicic acid:

It is a requirement to record, each day, the amount of fluoride added to the water supply. For dry feed systems, and solution feed systems that use fluorosilicic acid, the amount of fluoride ion added to the water supply can be calculated from the mass of fluoride compound added and the fluoride ion content (Equation 3).

Equation 3 $$m_{F^-} = m \times F^-$$

Where:

m_{F^-} is the amount of fluoride ion added in a day in (kg)

m is the mass of fluoride compound added in a day (kg)

F^- is the fluoride ion content (from Equation 1)

Worked example of Equation 3

5 kg of sodium fluoride with a fluoride ion content of 0.44 is added to the water supply over the course of one day.

$$m_{F^-}\,(kg) = 5kg \times 0.44 = 2.2\,kg$$

Calculate the fluoride ion content for solution feed systems using sodium fluoride or sodium fluorosilicate

For solution feed systems using either sodium fluoride or sodium fluorosilicate, the amount of fluoride ion added to the water supply can be calculated from the volume of the fluoride solution dosed into the water supply, the strength of the solution and the fluoride ion content (Equation 4).

Equation 4 $$m_{F^-} = V_s \times S \times P \times cf$$

Where:

m_{F^-} is the amount of fluoride ion added in a day (kg)

V_s is the volume of fluoride solution added in a day (L)

S is the strength of the fluoride solution (from Equation 2) (% or g/100mL)

P is the proportion of fluoride in the molecular formula of the compound (see P values listed in Equation 1)

cF is the conversion factor for grams to kilograms (0.001kg/g) and grams/100mL to grams/L (1,000mL/L)

Worked example of Equation 4

200 L of a 1.96% (1.96g/100mL) sodium fluoride solution is added to the water supply over the course of one day.

$$m_{F^-}(kg) = 200L \times \frac{1.96g}{100mL} \times 0.452 \times 0.001kg/g \times 1{,}000mL/L = 1.8\,kg$$

Calculate the fluoride ion content for saturator systems using sodium fluoride or sodium fluorosilicate

For saturator systems using either sodium fluoride or sodium fluorosilicate, the amount of fluoride ion added to the water supply can be calculated from the volume of fluoride solution dosed into the water supply, the strength of the solution, and the fluoride ion content (Equation 5).

Equation 5

$$m_{F^-} = V_s \times S \times F^- \times cf$$

Where:

m_{F^-} is the amount of fluoride ion added in a day (kg)

V_s is the volume of fluoride solution added in a day (L)

S is the strength of the fluoride solution (% or g/100 mL)
The solubility of sodium fluoride is 4% and the solubility of sodium fluorosilicate is 0.64%.

F^- is the fluoride ion content expressed as a fraction (0.452 for sodium fluoride, 0.606 for sodium fluorosilicate, 0.452 for sodium fluoride)

Cf Is the conversion factor for grams to kilograms (0.001kg/g) and grams/100mL to grams/L (1,000mL/L)

Worked example of Equation 5

10 L of a saturated sodium fluoride solution (4% or 4g/100mL) was added to the water supply over the course of one day.

$$m_{F^-}(kg) = 10L \times \frac{4g}{100mL} \times 0.452 \times 0.001kg/g \times 1{,}000\ mL/L = 0.18\ kg$$

Calculate the fluoride ion concentration in the treated water

It is a requirement to record, each day, the calculated fluoride concentration. For all systems, other than those that blend naturally occurring fluoride into the water supply, the fluoride concentration can be calculated from the volume of treated water, the amount of fluoride ion added, and the concentration of fluoride in the raw water (Equation 6).

Equation 6

$$C_{tw} = \frac{m_{F^-}}{V_t} + C_{rw}$$

Where:

C_{tw} is the fluoride ion concentration in the treated water (mg/L)

m_{F^-} is the amount of fluoride ion added in a day (kg) [from Equation 3 (dry feed and acid systems), Equation 4 (solution feed), or Equation 5 (saturator systems)]

V_t is the volume of treated water produced in a day (ML)

C_{rw} is the fluoride ion concentration in the raw water (mg/L)

Worked example of Equation 6

1.8 kg of fluoride ion was added to 3ML of treated water over the course of one day. The concentration of fluoride in the raw water is 0.1 mg/L.

$$C_{tw}(mg/L) = \frac{1.8kg}{3ML} + 0.1mg/L = 0.7\ mg/L$$

Section 2 - Additional calculations

Calculate the fluoride ion concentration in a solution in units of mg/L

The concentration of fluoride ion in solution, Cs, is expressed in milligrams per litre (mg/L) from the mass of the dosing chemical added for a given K and P, and the volume of the solution, and applying appropriate conversion factors (cf) (Equation 7).

Equation 7

$$C_s = \frac{(m \times K \times P)}{V} \times cf$$

Where:

C_s	is the concentration of the fluoride ion in solution (mg/L)
m	is the mass of dosing chemical added (kg)
K	is the purity of the chemical as indicated on the batch analysis certificate (powder) or concentration (liquid), expressed as a fraction
P	is the proportion of fluoride in the molecular formula of the compound
V	is the volume of water to which the dosing chemical is added (L)
cf	is the conversion factor for kilograms (kg) to milligrams (mg)

Worked example of Equation 7

Using the example from Equation 2, above: 5 kg of sodium fluoride (98% purity) is dissolved into a solution tank with 250 L of water. P for NaF is 0.452.

$$C_s\ (mg/L) = \frac{(5\ kg \times 0.98\ \times 0.452)}{250\ L} \times 10^6\ mg/kg = 8{,}900\ mg/L$$

The concentration can be calculated from solution strength (S) using Equation 8.

Equation 8 $$C_s = S \times P \times cf$$

Where:

C_s is the concentration of the fluoride ion in solution (mg/L)
S is the solution strength of the dosing chemical in a solution tank (from Equation 2)
P is the proportion of fluoride in the molecular formula of the compound
cf is the conversion factor for grams (g) to milligrams (mg) and millilitres (mL) to litres (L)

Worked example of Equation 8

From the worked example of Equation 2, 5 kg of sodium fluoride (98% purity) is dissolved in a holding tank of with a volume of 250 L.

$$C_s\,(mg/L) = \frac{1.96g}{100mL} \times 0.452 \times 1{,}000mg/g \text{ x } 1{,}000\ mL/L = 8{,}900\ mg/L$$

Alternatively, the concentration of fluoride ion solution can be calculated using F^- from equation 9.

Equation 9 $$C_s = \frac{m \times F^-}{V} \times cf$$

Where:

C_s is the concentration of the fluoride ion in solution (mg/L)
m is the mass of the dosing chemical added to the solution tank (kg)
F^- is the fluoride ion content in chemical (from Equation 1)
V is the volume of water to which the dosing chemical is added (L)
cf is the conversion factor for kilograms (kg) to milligrams (mg) and dividing by 100%

Worked example of Equation 9

6 kg of sodium fluorosilicate (of 99% purity) (K=0.99) is added to 1000 L of water. The fraction of fluoride ion in sodium fluorosilicate (P) is 0.606.

$$F^- = P \times K \text{ x } 100 = 0.606 \times 0.99 \times 100 = 60\%$$

$$C_s\,(mg/L) = \frac{6\ kg \times 60\%}{1{,}000\ L} \times 10^6\ mg/kg \times \frac{1}{100\%} = 3{,}600\ mg/L$$

The concentration of fluoride ions in an aqueous solution of fluorosilicic acid can be determined using the specific gravity (s.g.) of the fluorosilicic acid (Equation 10).

Equation 10 $$C_s\ (mg/L) = s.g. \times K \times P \times cf$$

Where:

C_s is the concentration of the fluoride ion in solution (mg/L)
s.g. Is the specific gravity of the solution (kg/L)
K is the purity of the chemical as indicated on the batch analysis certificate(powder) or concentration (liquid), expressed as a fraction
P is the proportion of fluoride in the molecular formula of the compound
cf is the conversion factor for kilograms (kg) to milligrams (mg)

Worked example for Equation 10

A 20% W/W solution, the specific gravity (*s.g.*) is 1.1748 at 17.5˚C. The concentration of H_2SiF_6 in a 20% W/W solution is 20 g/100 g (0.2 g/g or 0.2 kg/kg).

$$C_s\ (mg/L) = 1.1748\ \text{kg/L} \times 0.2\ \text{kg/kg} \times 0.791 \times 10^6 \text{mg/kg} = 190{,}000\ \text{mg/L (as } F^-)$$

Calculate the mass of fluoridation chemical needed to make a specific fluoride solution strength

Equation 2 above can be used to calculate the mass of fluoridation chemical needed to be added to make a specific concentration of the pure chemical in solution. Rearranging the equation, the mass of fluoridation chemical (m) in kilograms (kg) can be calculated as follows using Equation 11.

Equation 11 $$m = \frac{S \times V}{K} \times cf$$

Where:

m is the mass of the dosing chemical to be added to the solution tank (kg)
S is the solution strength of the dosing chemical in a solution tank (from Equation 2)
V is the volume of water in the solution tank (L)
K is the purity of the chemical as indicated on the batch analysis certificate (powder) or concentration (liquid) expressed as a fraction
cf is the conversion factor for litres (L) to millilitres (mL) and kilograms (kg) to grams (g)

Worked example of Equation 11

A 4% solution (therefore S = 4 g/100 mL) of sodium fluoride (NaF) is required in a tank containing 200 L of water (V = 200). According to the certificate of analysis, the purity of the NaF is 97% (K = 0.97).

$$m(kg) = \frac{4\text{ g}}{100\text{ mL}} \times \frac{200\text{ L}}{0.97} \times 1{,}000\text{ mL/L x } 0.001\text{ kg/g} = 8.2\text{ kg}$$

That is, 8.2 kg of the fluoridating chemical NaF needs to be added to the holding tank containing 200 L of water to make a pure 4% solution of NaF.

Calculate the fluoride concentration from the chemical usage for dry feed systems

If the quantity of fluoridation chemical being used (i.e. kilograms of chemical used over a defined period) is known and the volume V_t of water treated is known, the theoretical fluoride concentration (in mg/L) in the final treated water can be calculated using Equation 12 provided the concentration of fluoride in the raw water C_{rw} (in mg/L) is also known:

Equation 12

$$C_{tw} = C_{rw} + \left(\frac{m_t \times K \times P}{V_t} \times cf\right)$$

Where:

- C_{tw} is the concentration of the fluoride ion in treated water (mg/L)
- C_{rw} is the concentration of naturally occurring fluoride ions in the untreated (raw) water (mg/L)
- m_t is the mass of the dosing chemical added to treated water (in (kg))
- K is the purity of the chemical as indicated on the batch analysis certificate(powder) or concentration (liquid) expressed as a fraction
- P is the proportion of fluoride in the molecular formula of the compound
- V_t is the volume of treated water (in L)
- cf is the conversion factor for kilograms (kg) to milligrams (mg)

Worked example of Equation 12

A dry feeder uses 2 kg of NaF (m = 2 kg) in one day to fluoridate 1 ML (Vt = 1,000,000 L) of water. The purity of the NaF is 98% (K = 0.98) and the P value for NaF is 0.452. The natural fluoride concentration C_{rw} in the raw water was found to be 0.1 mg/L.

$$C_{tw}\ (mg/L) = 0.1\text{ mg/L} + \left(\frac{2\text{ kg} \times 0.98 \times 0.452}{1{,}000{,}000\ L} \times 10^6\text{ mg/kg}\right) = 0.99\text{ mg/L (as F}^-\text{)}$$

Calculate the fluoride concentration from the chemical usage for solution feed systems

In a solution feed system where powdered NaF or Na_2SiF_6 or bulk fluorosilicic acid has been dissolved in a holding tank, the fluoridation chemical is added to the unfluoridated water stream from the dosing tank at a steady rate. The fluoride concentration of the treated water can be calculated from the volume of solution that was used from the dosing tank (V_b) and the volume of water that was dosed i.e. treated water produced in that period (V_t) (Equation 13).

Equation 13

$$C_{tw} = C_{rw} + \left(\frac{S \times P \times V_b}{V_t} \times cf\right)$$

Where:

C_{tw} is the concentration of the fluoride ion in treated water (mg/L)
C_{rw} is the concentration of naturally occurring fluoride ions in the untreated (raw) water (mg/L)
S is the solution strength of the dosing chemical in a solution tank (from Equation 2)
P is the proportion of fluoride in the molecular formula of the compound
V_b is the volume of solution used from the dosing tank (L)
V_t is the volume of treated water (L)
cf is the conversion factor for millilitres (mL) to litres (L) and grams (g) to milligrams (mg)

Worked example of Equation 13

250 L of a 2% NaF solution was prepared (therefore S = 2 g/100 mL and P = 0.452). During a particular day, 1.5 ML of water was dosed (i.e. V_t = 1,500,000 L) and at the start of the day, the NaF holding tank was at a capacity of 250 L; at the end of the run, the volume of NaF solution remaining in the tank was measured to be 115 L. Therefore, V_b = 250 – 115 = 135 L. The natural fluoride content in the water (C_{rw}) was found to be 0.08 mg/L.

$$C_{tw}\ (mg/L) = 0.08\ \text{mg/L} + \left(\frac{2\ \text{g}}{100\ \text{mL}} \times \frac{0.452 \times 135\ \text{L}}{1{,}500{,}000\ \text{L}} \times 1{,}000\ \text{mL/L} \times 1{,}000\ \text{mg/g}\right) = 0.90\ \text{mg/L (as } F^-\text{)}$$

Calculate the fluoride concentration in treated water using flow rates for dry feed systems

In a dry feed system, powdered fluoridation chemical (NaF or Na_2SiF_6) is steadily added at a known rate in kilograms per hour (kg/h) to the water supply which is flowing at a known flow rate in litres per second (L/s). The concentration of fluoride ions in the treated water (C_{tw}) can be calculated from the delivery rate of the dry feed (R_g) and the flow rate of the water being dosed (R_p) (Equation 14).

Equation 14

$$C_{tw} = C_{rw} + \left(\frac{R_g \times P \times K}{R_p} \times cf\right)$$

Where:

C_{tw} is the concentration of the fluoride ion in treated water (mg/L)
C_{rw} is the concentration of naturally occurring fluoride ions in the untreated (raw) water (mg/L)
R_g is the delivery rate of the dry feed fluoride system (in kg/h)
P is the proportion of fluoride in the molecular formula of the compound
K is the purity of the chemical as indicated on the batch analysis certificate (powder) or concentration (liquid) expressed as a fraction
R_p is the flow rate of the water being dosed in the plant (in L/s)
cf is the conversion factor for kilograms (kg) to milligrams (mg) and for seconds (s) to hours (h)

Worked example of Equation 14

A fluoride dosing facility is using sodium fluorosilicate (Na_2SiF_6) dry powder (i.e. P = 0.606) to fluoridate the water supply. The analysis certificate indicated that the product was 99% pure (i.e. K = 0.99). The powder is added to the plant water stream at a delivery rate of 0.05 kg/h (R_g = 0.05) and the treated water is flowing at a rate of 15 L/s (R_p = 15 L/s). The natural fluoride content in the water (C_{rw}) was found to be 0.15 mg/L

$$C_{tw}\ (mg/L) = 0.15\ \text{mg/L} + \left(\frac{0.05\ \text{kg/h} \times 0.606 \times 0.99}{15\ \text{L/s}} \times \frac{1\ \text{h}}{3600\ \text{s}} \times 10^6\ \text{mg/kg}\right) = 0.71\ \text{mg/L (as } F^-)$$

Calculate the fluoride concentration in treated water using flow rates for solution feed systems

The concentration of fluoride ion in the final treated water where a solution feed system is being used to dose the water supply can be calculated using the flow rate of the fluoride dosing pump, R_d in mL/min (millilitres per minute), the flow rate of the water supply being dosed, R_p in L/s (litres per second), the concentration of fluoride ion in the holding tank C_s (Equation 7) and the concentration of fluoride ion in the unfluoridated water being treated (C_{rw}) (Equation 15).

Equation 15

$$C_{tw} = C_{rw} + \left(\frac{R_d \times C_s}{R_p} \times cf\right)$$

Where:

C_{tw} is the concentration of the fluoride ion in treated water (mg/L)
C_{rw} is the concentration of naturally occurring fluoride ions in the untreated (raw) water (mg/L)
C_s is the concentration of fluoride ion in the holding tank (mg/L)
R_d is the flow rate of the dosing pump (mL/min)
R_p is the flow rate of the water being dosed in the plant (L/s)
cf is the conversion factor for litres (L) to millilitres (mL) and for seconds (s) to minutes (min)

Worked example of Equation 15

A solution of sodium fluoride is pumped from a dosing tank at a rate of 50 mL/min (R_d = 50). The strength of the NaF solution is 2% (2 g/100 mL) so that the concentration of fluoride ion in the holding tank (C_s) is 9060 mg/L (Equation 7). The water to be fluoridated in the plant is flowing at a rate of 10 L/sec (R_p = 10 L/s). The concentration of fluoride in the untreated water was 0.1 mg/L (C_{rw} = 0.1)

$$C_{tw}\ (mg/L) = 0.1\ \text{mg/L} + \left(\frac{50\ \text{mL/min} \times 9060\ \text{mg/L}}{10\ \text{L/s}} \times \frac{1\ \text{min}}{60\ \text{s}} \times \frac{1\ \text{L}}{1{,}000\ \text{mL}}\right) = 0.86\ \text{mg/L}\ (\text{F}^-)$$

Calculate the fluoride concentration from blending with waters containing elevated levels of fluoride

Fluoridation of a water supply may also be carried out by blending a water source containing elevated levels of naturally occurring fluoride with a water supply that contains much less fluoride (the raw water) (Equation 16). It is important to know in advance the concentration of fluoride in both the water source with the elevated level of fluoride (C_n) and the raw water (C_{rw}), and how these concentrations vary. In the blending process, the water supplier will often have the flow rate of the raw water supply fixed at a constant value (R_p) and will adjust the flow rate of the water source containing the elevated level of fluoride (R_n) to achieve the target fluoride concentration in the treated water (C_p).

Equation 16

$$R_n = R_p \times \frac{(C_p - C_{rw})}{(C_n - C_p)}$$

Where:

R_n is the flow rate of the water containing elevated levels of naturally occurring fluoride (L/s)
R_p is the flow rate of the raw water supply with low levels of fluoride (L/s)
C_p is the prescribed fluoride concentration in the treated (blended) water (mg/L)
C_{rw} is the concentration of fluoride in the raw water low in fluoride (mg/L)
C_n is the concentration of fluoride in the water containing elevated levels of naturally occurring fluoride (mg/L)

Worked example of Equation 16

A fluoridation plant will be blending bore water with elevated levels of fluoride with a local dam supply which is low in fluoride. The concentration of fluoride in the bore water (C_n) is 3.7 mg/L and the concentration in the dam water (C_{rw}) is 0.1 mg/L. The flow rate of the dam water (R_p) is usually set at 100 L/s and the desired target fluoride concentration (C_p) in the blended water is 0.7 mg/L.

$$R_n(L/s) = 100\ \text{L/s} \times \frac{(0.7 - 0.1)\ \text{mg/L}}{(3.7 - 0.7)\ \text{mg/L}} = 20\ \text{L/s}$$

The flow rate of the bore water (R_n) should be set at 20 L/s to achieve the desired 0.7 mg/L target fluoride concentration in the blended water.

Where the flow rate of the raw water supply varies, the same principle applies, but the value of Rn needs to be calculated for each value of R_p.

Equation 16 can be expressed alternatively as mass balance equation 16a:

Equation 16a $$(C_{rw} \times R_p) + (C_n \times R_n) = C_p \times (R_p + R_n)$$

Worked example of Equation 16a

Using the figures for the worked example of Equation 16 gives:

$$(0.1mg/L \times 100L/s) + (3.7 \times R_n) = 0.7mg/L \times (100L/s + R_n)$$

This gives:	$10 + 3.7R_n = 70 + 0.7R_n$
Subtracting 10 from both sides of the equation gives:	$3.7R_n = 60 + 0.7R_n$
Subtracting $0.7R_n$ from both sides of the equation gives:	$3.0R_n = 60$
Dividing both sides of the equation by 3 gives:	$R_n = 20\text{L/s}$

Calculate the mass of fluoride used in one day (kg)

The mass of naturally occurring fluoride sourced from water with the elevated level of fluoride in one 24-hour period, m_n (Equation 17).

Equation 17 : $$m_n = \frac{C_n \times R_n \times 86{,}400\ \text{s}}{10^6\ \text{mg/kg}} = (0.0864 \times C_n \times R_n)\ \text{kg}$$

Where:

R_n is the flow rate of the water containing elevated levels of naturally occurring fluoride (L/s)

C_n is the concentration of fluoride in the water containing elevated levels of naturally occurring fluoride (mg/L)

m_n is the mass of fluoride added per day from the water containing elevated levels of naturally occurring fluoride (kg)

Equation 18 can be used to calculate the mass of fluoride in the raw water containing low levels of fluoride, m_{rw}.

Equation 18: $$m_{rw} = \frac{C_{rw} \times R_p \times 86{,}400\ \text{s}}{10^6\ \text{mg/kg}} = (0.0864 \times C_{rw} \times R_{rw})\ \text{kg}$$

Where:

R_p is the flow rate of the raw water supply with low fluoride concentration (L/s)

C_{rw} is the concentration of fluoride in the raw water with low concentration (mg/L)

m_{rw} is the mass of fluoride added per day from the raw water source (kg)

Equation 19 can be used to calculate the total mass of fluoride in the blended water m_T is the sum of m_n and m_{rw}.

Equation 19: $$m_T = m_n + m_{rw}$$

$m_T = (0.0864 \times C_n \times R_n) + (0.0864 \times C_{rw} \times R_{rw})$

$m_T = 0.0864[(C_n \times R_n) + (C_{rw} \times R_{rw})]$

Where:

m_T is the total calculated mass of fluoride derived from both the water containing elevated levels of naturally occurring fluoride and the raw water low in fluoride levels (kg)

m_n is the mass of fluoride derived per day from the water containing elevated levels of naturally occurring fluoride (kg)

m_{rw} is the mass of fluoride derived per day from the raw water source (kg)

Worked example for Equation 19

Using the worked example given for Equation 16:

$$m_T(kg) = 0.0864[(3.7 \times 20) + (0.1 \times 100)] = 7.26\ kg$$

Calculate the fluoride concentration in the final water (C_{tw})

Equation 20:

$$C_{tw} = \frac{(C_n \times R_n) + (C_{rw} \times R_p)}{(R_n + R_p)}$$

Where:

C_{tw} is the prescribed concentration of fluoride in blended water (mg/L)

C_n is the concentration of fluoride in the water containing elevated levels of naturally occurring fluoride (mg/L)

R_n is the flow rate of the water containing elevated levels of naturally occurring fluoride (L/s)

C_{rw} is the concentration of fluoride in the raw water with low concentration (mg/L)

R_p is the flow rate of the raw water supply with low fluoride concentration (L/s)

Worked example for Equation 20

In the worked example for Equation 18, C_p calculates to 0.70 mg/L, providing a check of the calculations.

$$C_{tw}(mg/L) = \frac{(3.7\ \text{mg/L} \times 20\ \text{L/s}) + (0.1\ \text{mg/L} \times 100\ \text{L/s})}{(20\ \text{L/s} + 100\ \text{L/s})} = 0.7\ \text{mg/L (as F}^-\text{)}$$

Index of symbols used in equations

Symbol	Description	Units
[illegible]	Conversion factor	
[illegible]	Concentration of fluoride in water containing elevated levels of naturally occurring fluoride (for blending)	mg/L
[illegible]	Prescribed fluoride concentration in the treated (blended) water	mg/L
[illegible]	Concentration of fluoride in raw water with low concentration (for blending)	mg/L
[illegible]	Concentration of fluoride ion (F^-) in a prepared solution	mg/L
[illegible]	Prescribed concentration of fluoride in blended or treated water	mg/L

Symbol	Description	Units
F^-	Fluoride ion concentration in dosing chemical	% or fraction
$\hat{J}$	Purity of fluoride chemical as supplied	% or fraction
ls	Mass of fluoride chemical	g or kg
ls_{F^-}	Mass of fluoride ion added in a day	g or kg
ls_{η}	Mass of fluoride derived over time from water containing elevated concentration of naturally occurring fluoride (for blending)	kg
$ls_{\mu i}$	Mass of fluoride derived per day from raw water source (for blending)	% or fraction
$ls_{\S}$	Mass of the dosing chemical added to treated water	mL/min
$\supset$	Proportion of fluoride in a fluoridation chemical	kg/h
P_{ζ}	Flow rate of a fluoride dosing pump	L/s
$P_{\acute{f}}$	Delivery rate of a dry feed fluoride system	L/s
P_{η}	Flow rate of a water supply containing elevated concentration of fluoride (for blending)	% or g/100 mL
$P_{\hat{o}}$	Flow rate of a raw water supply with low concentration of fluoride (for blending)	kg/L or g/mL
$\check{R}$	Solution Strength	L
$\iota\#\dot{f}\#$	Specific Gravity	L
$\tilde{U}$	Volume	ML
$\tilde{U}_{\ae}$	Volume of solution used from the dosing tank	ML
$\tilde{U}_{\eta}$	Volume of water containing elevated levels of fluoride blended into the water supply	L
$\tilde{U}_{\mu i}$	Volume of raw water with low concentration of fluoride	L or ML
$\tilde{U}_{\iota}$	Volume of fluoride solution added in a day	g or kg
$\tilde{U}_{\S}$	Volume of treated water	g or kg

Queensland Health

FAQs – Local government fluoridation decisions

October 2024 Version 3.0

Under the *Water Fluoridation Act 2008* (the Act) each local government in Queensland can decide whether the town water supplies within their area are fluoridated.

Deciding to commence fluoridation

Can a local government elect to commence adding fluoride a drinking water supply that is not currently fluoridated?

Yes.

What is the process?

Prior to commencing fluoridation of a water supply, the Act requires that the local government must have decided that commencing fluoridation is in the best interests of the community.

Once a decision has been made, the local government must notify Queensland Health and notify the relevant local community by publishing a notice detailing the nature of the decision in a publicly accessible way (e.g., on the local government's website or in a newspaper circulating in the area serviced by the water supply to which the decision relates).

If the local government is not the water supplier for the community, the water supplier must be informed of the decision and is required to implement it (refer to the section below titled '*Fluoridation decisions where the local government is not the water supplier*').

At least 30 days prior to commencing fluoridation, the water supplier must notify Queensland Health and again notify the relevant local community by publishing a notice in a publicly accessible way indicating the date it intends to commence fluoridation.

Is there funding available for infrastructure?

The Queensland Government does not currently have a specific funding program for water fluoridation infrastructure. If a funding application is made via a general water infrastructure program or other funding scheme, Queensland Health is often able to provide a letter of support.

Is there funding available to meet operation and maintenance costs?

The Queensland Government does not currently have a funding program to assist with operation and maintenance costs associated with water fluoridation.

Deciding to cease fluoridation

Can a local government elect to cease the supply of fluoridated water to communities that are currently fluoridated?

Yes.

What is the process?

Prior to ceasing fluoridation of a water supply that is currently fluoridated, the local government must have decided that ceasing fluoridation is in the best interests of the community.

Once a decision has been made, the local government must notify Queensland Health and notify the relevant local community by publishing a notice detailing the nature of the decision in a publicly accessible way (e.g., on the local government's website or in a newspaper circulating in the area serviced by the water supply to which the decision relates).

If the local government is not the water supplier for the community, the water supplier must be informed of the decision and is required to implement it (refer to the section below titled '*Fluoridation decisions where the local government is not the water supplier*').

At least 30 days prior to ceasing fluoridation, the water supplier must notify Queensland Health and again notify the relevant local community by publishing a notice in a publicly accessible way indicating the date it intends to cease fluoridation.

If a decision is made to cease fluoridation, should the water fluoridation facility be decommissioned?

Yes. Where a decision to cease fluoridation is made under the Act, the water supplier should ensure that the fluoride dosing facility is fully decommissioned and any remaining fluoride compounds are disposed of or removed from site.

Decommissioning should include the physical removal of the fluoride injection point, not just turning off the valve. The water supplier may decommission or dispose of water fluoridation assets as they wish so long as they do not breach environmental protection, work health and safety or public health legislation.

Following the decommissioning of fluoride dosing infrastructure, documentation such as Drinking Water Quality Management Plans, standard operating procedures, workplace health and safety manuals and site induction procedures should also be updated.

Queensland Health can provide further guidance on decommissioning upon request.

Fluoridation decisions where the local government is not the water supplier

Where the local government is not the water supplier, who makes the decision about whether fluoridation is in the best interests of the community?

The decision as to whether fluoridation is in the best interests of the community is always to be made by the local government.

Where the local government is not the water supplier, the Act requires that the local government must consult with the water supplier about the cost implications, infrastructure

arrangements and potential impact on other water supplies, before making a decision as to whether fluoridation is in the best interests of a community.

Where the local government is not the water supplier, does the water supplier have to act on the decision to implement or cease fluoridation for a community?

Yes. The Act states that the water supplier must comply with the decision made by the local government.

Where the local government is not the water supplier and there are costs to the water supplier associated with implementing or ceasing fluoridation in line with a local government decision, who pays?

If a water supplier incurs costs in complying with the decision of a local government to implement or cease fluoridation, the Act requires the local government to meet these costs.

Best interests of the community

How does a local government determine whether fluoridation is in the best interests of a community?

Queensland Health cannot direct a local government as to how they determine whether fluoridation is in the best interests of a community.

Local governments should note that fluoridation has been proven as a safe, effective and ethical means of preventing tooth decay, for people of all ages and not just for children. It is supported by peak health bodies including the National Health and Medical Research Council, the Australia Dental Association, the Australian Medical Association and the World Health Organization.

When considering whether fluoridation is in the best interests of a community, Queensland Health recommends local governments consider the significant oral health benefits that are associated with drinking water fluoridation.

Miscellaneous questions

Will the state indemnify a local government against all costs and expenses properly incurred, and not recovered by it, in relation to any proceeding taken against the local government as result of making a fluoridation decision?

Yes, under section 96 of the Act, the State can indemnify a local government against all costs and expenses properly incurred, and not recovered, in relation to any civil proceeding in a court taken against the local government as a result of making a fluoridation decision.

What requirements does a water supplier have to comply with if they decide to continue or proceed with the implementation of fluoridation?

A water supplier adding fluoride to a public potable water supply must comply with the requirements of the *Water Fluoridation Act 2008*, the Water Fluoridation Regulation 2020 and Queensland Water Fluoridation Code of Practice.

Can fluoride tablets be provided as an alternative to water fluoridation?

Fluoride supplements, such as tablets and drops, do not provide the same benefit as water fluoridation for several reasons:

- they are most likely to be used by the people who need them least—children with good oral hygiene and healthy diets
- people who brush their teeth regularly with fluoridated toothpaste receive little, if any, additional benefit from fluoride tablets when sucked or swallowed once a day
- people may not remember to take them, or may take too many
- they increase the risk of dental fluorosis, without clear benefits
- animal experiments have shown that fluoride given once a day is more likely to cause fluorosis than the same amount of fluoride given intermittently throughout the day, as occurs with fluoridated water.

Since 2006, the Australian Research Centre for Population Oral Health has recommended that fluoride supplements should not be used. Therefore, since 2006, fluoride supplements have been progressively phased out nationwide.

Queensland Health does not support the use of fluoride tablets.

12.2.1 CHARGES RESOLUTION (NO.2) 2025

Date: 19 August 2025
Author: Director Council Services - Chris Welch
File ID:
Letter ID:
Attachment: Draft Charges Resolution (No.2) 2025
Minute No: OM006507

Resolution:

That Council:

1. ***Note and receive the report outlining the options for an updated Charges Resolution.***
2. ***Adopt a new Charges Resolution (No. 2) 2025 to be effective from 1 September 2025.***

Moved: Cr Jensen Seconded: Cr Leo Carried

Background

Council's current Charges Resolution (No.1) commenced in June 2015. The *Planning Regulation 2017* (Schedule 16) states the maximum amount Council can levy as charges on development, and this amount is indexed each year to keep pace with the rising costs associated with delivering infrastructure. The most recent update to the *Planning Regulation* came into effect on 1 July 2025.

Under the *Planning Act 2016* (the Act) all local governments in Queensland are required to include a Local Government Infrastructure Plan (LGIP) in the planning scheme to levy infrastructure charges and impose conditions for trunk infrastructure on development approvals. An LGIP identifies a growth scenario (called the planning assumptions) and a local government's plans for trunk infrastructure to service urban development at the desired standard of service for this demand.

In the Act, local governments define trunk infrastructure, limited to the major infrastructure elements of the water, sewer, transport and stormwater, parks and land for community facilities networks. Council's current LGIP and Charges Resolution do not include the stormwater network.

In June 2024, Council received a report outlining the results of the statutory review of the Local Government Infrastructure Plan (LGIP), which is to be reviewed every 5 years in accordance with the *Planning Act 2016*, Section 25(3). This review recommended an amendment to the LGIP to ensure the infrastructure planning for the local government area remains current, accurate and relevant. A draft LGIP amendment will be presented to Council in a different report.

However, during the process of amending the LGIP, detailed infrastructure planning has identified there is a significant difference between the anticipated charges revennue collected through development and the cost to service development with necessary infrastructure, as outlined in the LGIP.

Report

Council's charges resolution currently levies charges on new development, in accordance with the requirements of the Act and Regulation. It is proposed to amend two areas of the Charges Resolution, being:

- the format of the document to improve user-friendliness and readibility, and
- consideration of the value of the charges rates.

Format

The format of the Charges Resoltuion has been updated to simplify the methodology in the calculation of the charges to be levied. Additionally, the document is updated to:

- Refer to the *Planning Act 2016*, rather than the superceded *Sustainable Planning Act*
- Apply only to the Banana Planning Scheme
- Simplify the application of the charge areas.

Charge Rates

The level of the charges levied in the curent Charges Resolution is significantly less than the maximum amount allowed in the Planning Regulation (Prescribed Amount). The prescribed amounts for a sample of typical uses are shown in Table 1 to compare the current Charges Resolution with the maximum amounts.

Table 1: Comparison of Prescribed Amount and BSC adopted charges

Planning scheme use	**Prescribed Amount (*Planning Regulation 2017*)**	**BSC Charges Resolution (No. 1) 2015 amount**		
		Charge area 1 (Biloela and Moura)	**Charge area 2 (Taroom and Theodore)**	**Charge area 3 (Banana, Baralaba, Thangool)**
Dwelling unit (per dwelling with 3 or more bedrooms or new lot)	$36,670.70	$8,000	$4,500	$2,500
Dual occupancy or multiple dwelling (per dwelling with 2 or less bedrooms)	$26,193.40	$5,600	$3,150	$1,750
Shop or Food and Drink outlet or Service station (per m^2 of use area)	$235.75 *	$40.00	$22.50	$12.50
Hotel (per m^2 of use area)	$261.90 *	$56.00	$31.50	$17.50
Workforce accommodation (per unit)	As determined by the local government	$4,000	$2,250	$1,250

*Note *: plus an additional allowance for the stormwater network*

There are many drivers for adopting charges which are lower than the Prescibed Amount, including a desire to attract development in the local government area for the broader benefit for the community. However, there are also risks involved in keeping the cost recovery low, such as in a situation where a significant development is creating demand for infrastructure, there can be significant cost to ratepayers to cover the residual cost of delivering infrastructure.

For these reasons, a number of options are presented here for Council to consider for Charges Resolution (No. 2 2025):

- Option 1: Continue with the current charge rates
- Option 2: Amend the current charge rates, indexed to June 2025
- Option 3: Amend the charge rates closer to cost recovery

Option 1: Continue with the current charge rates

The current charge rates in the current Charges Resolution (No.1) 2015 could be maintained without change. The Charges Resolution makes allowance for indexation of the charges from the time the charges are levied and the day the charge is paid, meaning there is a small increase in the charges levied. However, given the Charges Resolution was adopted in 2015, and there has been significant change in the costs associated with construction since over the last 10 years, this approach is not recommended.

Option 2: Continue with the current charge rates, indexed to June 2025

An alternative approach would be to continue with the rates listed in the current Charges Resolution, but increase the charge rates by the index to take account of the increased cost of construction over the last 10 years, using the latest information from the ABS for the Producer Price Index for Road and Bridge Construction (ABS, March 2025). The impact of this option on a sample of the charge rates is shown in Table 2.

Table 2: Option 2 charge rates

Planning scheme use	**Charges Resolution (No. 1) 2015 charge rate**	**Option 2 proposed charge rate (PPI, March 2025)**
Dwelling unit (per dwelling with 3 or more bedrooms or new lot)	$8,000	$10,882.41
Dual occupancy or multiple dwelling (per dwelling with 2 or less bedrooms)	$5,600	$7,617.69
Shop or Food and Drink outlet or Service station (per m^2 of use area)	$40.00	$54.41
Hotel (per m^2 of use area)	$56.00	$76.18
Workforce accommodation (per unit) – apply rate for other Accommodation types	$4,000	$7,617.69

Option 3: Amend the charge rates closer to cost recovery

During the development of the LGIP amendment, the establishment costs for the trunk infrastructure projects have been updated. When these costs are compared with the forecast revennue, there is a significant shortfall which is likely to be covered by general rates revenue.

The current draft LGIP has a forecast expenditure of $90 million over the 15 years between 2021 and 2036 (acknowledging that part of this timeframe has already elapsed). Some contributions towards the delivery of trunk infrastructure is likely to be sourced from grants and other funding sources, but the forecast revenue solely from infrastructure charges (based on the adopted charges resolution) is in the order of $1.5 million.

The Planning Regulation 2017 was updated in June, raising the Prescribed Amount for a dwelling with 3 or more bedrooms (including a new vacant residential lot) to $36,670.70. When planning the infrastructure for the anticipated demand in the shire, the cost to deliver infrastructure for each new residential dwelling within the townships is in the order of $56,000-60,000 (excluding the stormwater network).

The charge rate in the current Charges Resolution is on average approximately 25% of the maximum allowable Prescribed Amount in the Planning Regulation. Option 3 seeks to close this gap between the cost to service new development with infrastructure and the infrastructure charges levied, by increasing the charge rates to be a proportion of the Prescribed Amount, such as 40% (except where the charge rate already exceeds 40%, such as “Other industry” where the current charge rate would remain).

Table 3: Option 3 charge rates

Planning scheme use	Charges Resolution (No. 1) 2015 charge rate	Option 3 proposed charge rate (40% of Prescribed Amount)
Dwelling unit (per dwelling with 3 or more bedrooms or new lot)	$8,000	$14,668.28
Dual occupancy or multiple dwelling (per dwelling with 2 or less bedrooms)	$5,600	$10,477.36
Shop or Food and Drink Outlet or Service Station (per m^2 of use area)	$40.00	$94.30
Hotel (per m^2 of use area)	$56.00	$104.76
Workforce accommodation (per unit) – apply rate for other Accommodation types	$4,000	$10,477.36

Comparative Charge Rates

In terms of benchmarking, Table 4 includes the current charges for nearby local government areas of Central Highlands Regional Council (CHRC), North Burnett Regional Council (NBRC), Western Downs Regional Council (WDRC) and Maranoa Regional Council (MRC). Note the values in the brackets are the listed charge rates in the relevant charge resolution, whereas the other values listed are the adopted charge rates indexed (using the PPI) to the June 2025 quarter for comparison purposes.

Table 4: Comparative charge rates

Planning scheme use	CHRC Charges Resolution (No. 14) 2021	NBRC Charges Resolution (No.2) 2015	WDRC Charges Resolution (No. 7.1) 2017	MRC AICR (Roma) 2015
Dwelling unit (per dwelling with 3 or more bedrooms or new lot)	(25,000) 31,416.88	(6,000) 8,227.44	(25,200) 33,546.35	(21,000) 28,823.14
Dual occupancy or multiple dwelling (per dwelling with 2 or less bedrooms)	(13,000) 16,336.78	(4,200) 5,759.21	(18,000) 23,961.68	(15,000) 20,587.96
Shop or Food and Drink outlet or Service station (per m^2 of use area)	(153.00) 192.27	(27.00) 37.02	(153.00) 203.67	(27.50) 37.74
Hotel (per m^2 of use area)	(100.00) 125.67	(30.00) 41.14	(170.00) 226.30	As determined by LG
Workforce accommodation (per unit)	(9,000) 11,310.08	(1,050) 1,439.30	(7,500) 9,984.03	As determined by LG

The recommended charges under Option 3 place Banana Shire Council mid-field in comparison to the other four councils, with some variation dependent on the particular use type. Adopting Option 3 will permit Council to increase its recovery rate without compromising our competitive advantage over most adjoining councils.

Conclusion

There is a significant deficit between the revenue collected from infrastruture charges and the cost to service new development with trunk infrastructure. The charge rates included in the current Charges Resolution is less than 25% of the Prescribed Amount included in the Planning Regulation.

It is recommended a Charges Resolution (No.2) 2025 be adopted, effective from 1 September, 2025, including increased charge rates in accordance with Option 3.

The draft LGIP incorporates the planning for the Stormwater Network. Upon adoption of the LGIP, it is recommended that the charges resolution be updated at that time to reflect the planning for stormwater.

Banana Shire Council

Charges Resolution (No. 2) 2025

Introduction

This resolution is made under section 113 of the *Planning Act 2016* (the Act) and complies with the *Planning Regulation 2017* (the Regulation) and *Minister's Guidelines and Rules 2024* (MGR).

1.0 Application of the resolution to the local government area

This resolution declares that an adopted charge applies to the entire local government area.

2.0 When the resolution has effect

This resolution has effect from [insert date].

3.0 Priority infrastructure area

The priority infrastructure area for Banana Shire Council is identified in the local government infrastructure plan in the Banana Shire Council Planning Scheme.

4.0 Application of adopted charges

The Banana Shire Council resolves to adopt the charges mentioned in Table 1, Column 3, for development of a use mentioned in Table 1, Column 2.
The local government declares that an adopted charge in Table 1, Column 3, applies to development which is consistent with the planning assumptions within the local government infrastructure plan in the Banana Shire Council Planning Scheme:

- For consistent development within the Priority Infrastructure Area (PIA) for Biloela and Moura, 100% of the adopted charge.
- For consistent development within the PIA for Taroom and Theodore, 56% of the adopted charge.
- For consistent development outside the PIA, 31% of the adopted charge.

For development, which is not consistent with the planning assumptions, Council will review the additional demand generated by the development in accordance with Section 6.0.

Table 1: Adopted Charges

Column 1 Adopted charge category	Column 2 Use	Column 3 Adopted charges Adopted charge (transport, water, sewer, parks and land for community facilities)
Reconfiguration of a lot	All uses	$14,668 for each additional lot
Residential uses	• Dwelling house • Dual occupancy • Caretaker's accommodation • Multiple dwelling	$10,477 for each dwelling with 2 or less bedrooms $14,668 for each dwelling with 3 or more bedrooms
Accommodation (short-term)	• Tourist Park	If the tourist park has tent or caravan sites, $5,239 for each site. If the tourist park has cabins, $5,239 for each cabin.
	• Hotel • Short-term accommodation • Resort complex	$5,239 for each suite with 2 or less bedrooms $7,334 for each suite with 3 or more bedrooms
Accommodation (long-term)	• Relocatable home park	$10,477 for each relocatable dwelling site for 2 or less bedrooms $14,668 for each relocatable dwelling site for 3 or more bedrooms
	• Community residence • Retirement facility • Rooming accommodation	$10,477 for each suite with 2 or less bedrooms $14,668 for each suite with 3 or more bedrooms $10,477 for each bedroom that is not part of a suite
Places of assembly	• Club • Community use • Function facility • Funeral parlour • Place of worship	$36.70 for each square metre of gross floor area (GFA)
Commercial bulk goods	• Agricultural supplies store • Bulk landscape supplies • Garden centre • Hardware and trade supplies • Outdoor sales • Showroom	$73.34 for each square metre of GFA
Commercial (retail)	• Adult store • Food and drink outlet • Service industry • Service station • Shop • Shopping centre	$94.30 for each square metre of GFA
Commercial (office)	• Office • Sales office	$73.34 for each square metre of GFA
Educational facility	• Childcare centre • Community care centre • Educational establishment	$73.34 for each square metre of GFA

Column 1 Adopted charge category	Column 2 Use	Column 3 Adopted charges Adopted charge (transport, water, sewer, parks and land for community facilities)
Entertainment	• Hotel • Nightclub entertainment facility • Theatre • Resort complex	$104.76 for each square metre of GFA, other than areas for providing accommodation
Indoor sport and recreation	• Indoor sport and recreation	$104.76 for each square metre of GFA, other than court areas $10.46 for each square metre of GFA of court area
High impact industry or special industry	• High impact industry • Special industry	$40 for each square metre of GFA
Other industry	• Low impact industry • Medium impact industry • Research and technology industry • Rural industry • Warehouse • Marine industry	$40 for each square metre of GFA
High impact rural	• Cultivating, in a confined area, aquatic animals or plants for sale • Intensive animal industry • Intensive horticulture • Wholesale nursery • Winery	$10.46 for each square metre of GFA
Low impact rural	• Animal husbandry • Cropping • Permanent plantation • Wind farm	Nil charge
Essential services	• Correctional facility • Emergency services • Healthcare services • Hospital • Residential care facility • Veterinary services	$73.34 for each square metre of GFA
Minor uses	• Advertising device • Cemetery • Home-based business • Landing • Market • Outdoor lighting • Park • Roadside stall	Nil charge

Column 1 Adopted charge category	Column 2 Use	Column 3 Adopted charges Adopted charge (transport, water, sewer, parks and land for community facilities)
	• Telecommunications facility • Temporary use	
Other uses	• Air service • Animal keeping • Car park • Crematorium • Extractive industry • Major sport, recreation and entertainment facility • Motor sport facility • Workforce accommodation • Outdoor sport and recreation • Port service • Tourist attraction • Utility installation • Any other use not listed in column 2	The adopted charge is the charge (in Column 3) for another use (in Column 2) that the local government decides to apply to the use.

5.0 Levied charges

In accordance with Section 119 of the Act, a charge is levied under an infrastructure charges notice for the additional demand and is payable by the applicant:

(a) If the charge applies for reconfiguring a lot – when the Council approves a plan for the reconfiguration.
(b) If the charge applies for a material change of use – when the change happens.
(c) If the charge applies for building work or other development – on the date stated in the infrastructure charges notice.

Council may impose development conditions requiring the construction of necessary infrastructure (refer Section 128) and an offset of the levied charges may apply. Development conditions may also be imposed for extra trunk infrastructure costs in accordance with Sections 130-136.

6.0 Limitation of levied charge

Section 120 of the Act provides that a levied charge may be only for extra demand placed on trunk infrastructure that the development will generate. Demand for trunk infrastructure generated by the following must not be included in the extra demand calculation:

- an existing use on the premises if the use is lawful and already taking place on the premises
- a previous use that is no longer taking place on the premises if the use was lawful at the time it was carried out
- other development on the premises if the development may be lawfully carried out without the need for a further development permit.

7.0 Automatic increases to levied charges

The levied charge for all development may be increased after the charge is levied and before it is paid to the local government.
The increase is calculated using the Producer Price Index (PPI) which is published by the ABS, adjusting the levied charges:

- starting on the day the levied charge is levied (using the PPI for the quarter released immediately after the notice date);
- ending on the day the charge is paid (using the PPI for the most recently released quarter).

8.0 Method for recalculating the establishment cost

The method used to recalculate the establishment cost when an application for an offset or refund is made under section 137 of the Act will be in accordance with the Minister's Guidelines and Rules (Chapter 6).

9.0 Criteria for deciding conversion applications

Conversion criteria are used for making a decision on an application made under section 139 of the Act to convert non-trunk infrastructure to trunk infrastructure. An applicant must demonstrate that all the following criteria are met. The non-trunk infrastructure must:

- have capacity significantly in excess of what is required to specifically service the proposed development in order to service other development in the area; and
- meet all the desired standards of service in the LGIP; and
- have a function and purpose consistent with other trunk infrastructure identified in the LGIP
- not be consistent with non-trunk infrastructure for which conditions may be imposed in accordance with Section 145 of the Act; and
- be the most cost-effective option in terms of the type, size and location of the infrastructure. The most cost-effective option means the least cost option based upon the life cycle cost of the infrastructure required to service future urban development in the area at the desired standards of service; and
- be servicing development consistent with the planning assumptions in terms of scale, type timing and location outlined in the LGIP.

10.0 Dictionary

Words and terms used in this resolution have the meaning given in the Act or the Regulation.

12.2.2 DRAFT LOCAL GOVERNMENT INFRASTRUCTURE PLAN AMENDMENT

Date: 19 August 2025
Author: Director Council Services - Chris Welch
File ID:
Letter ID:
Attachment: Attachment 1 - Draft Local Government Infrastructure Plan Amendment
Attachment 2 - Draft Schedule 2 LGIP Mapping and Supporting Material
Attachment 3 - Mapping
Minute No: OM006508

Resolution:

That Council:

1. ***Receive the 'Draft Local Government Infrastructure Plan Amendment' report; and***

2. ***Delegate authority to the Chief Executive Officer to commence the statutory process for the draft Local Government Infrastructure Plan Amendment in accordance with the Minister's Guidelines and Rules, Chapter 5, Part 3.***

Moved: Cr Bailey Seconded: Cr Casey Carried

Background

Under the *Planning Act 2016* (the Act) all local governments in Queensland are required to include a Local Government Infrastructure Plan (LGIP) in the planning scheme to levy infrastructure charges and impose conditions for trunk infrastructure on development approvals. An LGIP identifies a growth scenario (called the planning assumptions) and a local government's plans for trunk infrastructure to service urban development at the desired standard of service for this demand.

In June 2024, Council received a report outlining the results of the statutory review of the Local Government Infrastructure Plan (LGIP), which is to be reviewed every five years in accordance with the *Planning Act 2016*, Section 25(3). This review recommended an amendment to the LGIP to ensure the infrastructure planning for the local government area remains current, accurate and relevant, identifying opportunities for amendments:

- The Queensland Government Statisticians Office (QGSO) have released updated population projections in 2023. The population and dwelling projections in the current LGIP are for a 2016-2031 horizon and are to be updated with the updated QGSO projections to maintain a 15-year horizon, with an updated base year of 2021 and forecasts to 2036.

- The Priority Infrastructure Area (PIA) needs to be reviewed to ensure the area accommodates growth for at least 10 years (currently the LGIP states the PIA has capacity to 2026).

- A review of the infrastructure planning is to be undertaken to ensure the planned infrastructure can accommodate the updated growth forecast and consider the inclusion of the stormwater network.

Council decided to amend the LGIP.

Report

Council has prepared a draft LGIP amendment (see Attachment A Draft LGIP Amendment) in accordance with Part 6 of the *Minister's Guidelines and Rules* (MGR, 2024) which outlines the requirements for developing or amending an LGIP, in consultation with the State infrastructure providers.

The key elements of the amendment include:

- An update of the planning assumptions (see Attachment B Draft Schedule 2 LGIP mapping and supporting material) and Priority Infrastructure Area (see Attachment C Mapping)
- Updated planning for each infrastructure network, including the stormwater network, based on more current studies, including new plans for trunk infrastructure (see Attachment C Mapping)
- New schedules of work which reflect updated estimates of construction costs and timing.

Council has contracted an Appointed Reviewer (from a panel of contractors pre-approved by the Department of State Development, Local Government, Infrastructure and Planning) to conduct a first compliance check of the proposed LGIP to ensure the draft LGIP amendment is compliant with the requimrneets of the MGR.

It is recommended Council completes the Compliance Check and sends the proposed LGIP amendment and supporting information to the Minister requesting a review of the proposed LGIP amendment in accordance with Chapter 5, Part 3 of the *Minister's Guidelines and Rules*.

Conclusion

Upon completion of the Compliance Check, it is recommended that the draft LGIP amendment be submitted to the State Government to commence the first State Interest Review. The next step will be advice from the Minister, which may include conditions, to commence public notification of the draft LGIP amendment of at least 15 business days.

The Chief Executive Officer commended the hard work of the Director Council Services, Consultant and Staff involved in delivery this project. Council agreed.

Local Government Infrastructure Plan

8.1. Preliminary

(1) This Local Government Infrastructure Plan (LGIP) has been prepared in accordance with the requirements of the *Planning Act 2016*.

(2) The purpose of the LGIP is to:
- (a) integrate infrastructure planning with the land use planning identified in the planning scheme;
- (b) provide transparency regarding a local government's intentions for the provision of trunk infrastructure;
- (c) enable a local government to estimate the cost of infrastructure provision to assist its long term financial planning;
- (d) ensure that trunk infrastructure is planned and provided in an efficient and orderly manner;
- (e) provide a basis for the imposition of conditions about infrastructure on development approvals;

(3) The LGIP:
- (a) states in Section 8.2 the assumptions about future growth and urban development including the assumptions of demand for each trunk infrastructure network;
- (b) identifies in Section 8.3 the prioritised area to accommodate urban growth up to 2031;
- (c) states in Section 8.4 for each trunk infrastructure network the desired standard of performance;
- (d) identifies in Section 8.5 the existing and future trunk infrastructure for the following networks:
  - (i) transport;
  - (ii) sewerage;
  - (iii) water supply;
  - (iv) stormwater
  - (v) parks and land for community facilities.
- (e) provides a list of supporting documents that assist in the interpretation of the LGIP in Section 8.5.3 – Extrinsic material;

8.2. Planning assumptions

(1) The planning assumptions state the assumptions about:
- (a) population and employment growth;
- (b) the type, scale, location and timing of development including the demand for each trunk infrastructure network;

(2) The planning assumptions together with the desired standards of service form a basis for the planning of the trunk infrastructure networks and the determination of the priority infrastructure area.

(3) The planning assumptions have been prepared for:
- (a) the base date of 2021 and the following projection years to accord with future Australian Bureau of Statistics census years:
  - (i) 2026
  - (ii) 2031
  - (iii) 2036
- (b) the LGIP development types in Column 2 that include the uses in Column 3 of Table 8.2.1;
- (c) the projection areas identified on Priority Infrastructure Area Map (PIA Map 1.0) and projection areas in Schedule 2;

(4) Details of the methodology used to prepare the planning assumptions are stated in the extrinsic material (refer to Section 8.5.3).

Table 8.2.1 Relationship between LGIP development categories, LGIP development types and uses

Column 1 LGIP development category	Column 2 LGIP development type	Column 3 Defined Uses
Residential development	Detached dwelling	Caretaker's accommodation Dwelling house Home-based business
	Attached dwelling	Community residence Dual occupancy Dwelling unit Multiple dwelling Relocatable home park Residential care facility Retirement facility Rooming accommodation Rural workers' accommodation
Non-residential development	Commercial	Car wash Club Function facility Funeral parlour Health care service Hotel Nature-based tourism Office Parking station Sales office Service industry Theatre Tourist park Veterinary services
	Community purpose	Cemetery Child care centre Community care centre Community use Educational establishment Emergency services Hospital Indoor sport and recreation Outdoor sport and recreation Park Place of worship
	Industry	Bulk landscape supplies Extractive industry High impact industry Low impact industry Medium impact industry Rural industry Special industry Transport depot Warehouse
	Other	Air service Animal husbandry Animal keeping Aquaculture Cropping Environmental facility Intensive animal industry Intensive horticulture

Table 8.2.1 Relationship between LGIP development categories, LGIP development types and uses

Column 1 LGIP development category	Column 2 LGIP development type	Column 3 Defined Uses
		Major electricity infrastructure Motor sport facility Permanent plantation Renewable energy facility Roadside stall Substation Telecommunications facility Utility installation Wholesale nursery Winery
	Retail	Agriculture supplies store Food and drink outlet Garden centre Hardware and trade supplies Market Outdoor sales Service station Shop Shopping centre Showroom

8.2.1. Population and employment growth

(1) A summary of the assumptions about population and employment growth for the planning scheme area is stated in **Table 8.2.2** – Population and employment assumptions summary.

(2) Detailed assumptions about growth for each projection area and LGIP development type category are identified in the following tables in Schedule 2:
   (a) for population, **Table SC2.2.1**—Existing and projected population;
   (b) for employment, **Table SC2.2.2** – Existing and projected employees.

Table 8.2.2 Population and employment assumptions summary

Column 1 Description	Column 2 - Assumptions				
	Base date 2021	2026	2031	2036	Ultimate
Population	14,662	14,832	14,972	15,115	24,593
Employment	8,980	9,146	9,289	9,433	23,428

8.2.2. Development

(1) The developable area is stated in **Table SC2.2.5** in Schedule 2—Local government infrastructure plan mapping and tables.

(2) The planned density for future development is stated in **Table SC2.2.5** in Schedule 2—Local government infrastructure plan mapping and tables.

(3) A summary of the assumptions about future residential and non-residential development for the planning scheme area is stated in **Table 8.2.3** Residential dwellings and non-residential floor space assumptions summary.

Table 8.2.3 Residential dwellings and non-residential floor space assumptions summary

Column 1 Description	Column 2 - Assumptions				
	Base date 2016	2021	2026	2031	Ultimate
Residential dwellings	7,201	7,286	7,356	7,427	10,110
Non-residential floor space (m^2 GFA)	534,636	547,018	552,446	556,309	1,086,573

(4) Detailed assumptions about future development for each projection area and LGIP development type are identified in the following tables in Schedule 2:
   (a) for residential development, **Table SC2.2.3** – Existing and projected residential dwellings;
   (b) for non-residential development, **Table SC2.2.4** Existing and projected non-residential floor space.

8.3. Priority Infrastructure Area

(1) The priority infrastructure area identifies the area prioritised for the provision of trunk infrastructure to service the existing and assumed future urban development up to 2036.
(2) The priority infrastructure area is identified on the Priority Infrastructure Area Map (PIA Map 1.0) included in Schedule 2.

8.4. Desired standards of service

(1) This section states the key standards of performance for a trunk infrastructure network.
(2) Details of the standard of service for trunk infrastructure networks are identified in the extrinsic material.

8.4.1. Water supply network desired standard of service

Table 8.4.1 Water supply network desired standard of service

Measure	Planning criteria (qualitative standards)	Design criteria (quantitative standards)
Reliability/continuity of supply	All development receives a reliable supply of potable water with minimal interruptions to their service.	• *WSA 03-2011 Water Supply Code of Australia*—Water Services Association of Australia • Customer Service Standard – Water Supply and Sewerage • Standards in Development Design Code • Capricorn Municipal Design Guidelines (CMDG)
Adequacy of supply	Development within the service catchment receives a water supply that is adequate for the intended use.	• Water Services Association of Australia codes • IPWEA standards • Customer Service Standard – Water Supply and Sewerage • Standards in Development Design Code • Capricorn Municipal Design Guidelines (CMDG)
Quality of supply	A uniform water quality is in accordance with recognised standards that safeguards community health and is free from objectionable taste and odour.	• *Australian Drinking Water Guidelines 2011*—National Health and Medical Research Council • *Drinking water quality management plan 2023*—Banana Shire Council

Table 8.4.1 Water supply network desired standard of service

Measure	Planning criteria (qualitative standards)	Design criteria (quantitative standards)
		• *Planning Guidelines for Water Supply and Sewerage 2010* – Department of Energy and Water Supply
Environmental impacts	The water supply network minimises its environmental impacts in accordance with community expectations.	• Compliance with the requirements of: ○ the *Environmental Protection Act 1994* and associated Environmental Protection Policies; and ○ the *Water Act 2000* ○ *Vegetation Management Act 1999*
Pressure and leakage management	Monitoring and management of the water supply network maintains the reliability and adequacy of supply and minimises environmental impacts.	• Customer Service Standard – Water Supply and Sewerage
Infrastructure design / planning standards	Design of the water supply network will comply with established codes and standards	• *WSA 03–2011 Water Supply Code of Australia*—Water Services Association of Australia • *Australian Drinking Water Guidelines 2011*—National Health and Medical Research Council • *Planning Guidelines for Water Supply and Sewerage 2010*—Department of Energy and Water Supply • Water Supply Code of Australia—Water Services Association of Australia WSA 03 2011 • Standards in Development Design Code • Capricorn Municipal Design Guidelines (CMDG)

8.4.2. Sewerage network desired standard of service

Table 8.4.2 Sewerage network desired standard of service

Measure	Planning criteria (qualitative standards)	Design criteria (quantitative standards)
Reliability	All development has access to a reliable sewerage collection, conveyance, treatment and disposal system.	• *WSA 02—2002 Sewerage Code of Australia*— Water Services Association of Australia • Standards in Development Design Code • *Capricorn Municipal Design Guidelines (CMDG)* • Customer Service Standard – Water Supply and Sewerage
Quality of treatment	The sewerage network ensures the health of the community and the safe and appropriate level of treatment and disposal of treated effluent.	• *Queensland Water Quality Guidelines 2009* —Department of Environment and Resource Management • Compliance with the requirements of the *Environmental Protection Act 1994* and associated Environmental Protection Policies

Table 8.4.2 Sewerage network desired standard of service

Measure	Planning criteria (qualitative standards)	Design criteria (quantitative standards)
		• Model operating conditions ERA 63—Sewage Treatment • Code of environmental compliance ERA 63 — Sewage treatment activities (including Sewage Pumping Stations) • *End of waste code Biosolids (ENEW07359617)*
Environmental impacts	The sewerage network minimises its environmental impacts in accordance with community expectations.	• Compliance with the requirements of the *Environmental Protection Act 1994* and associated Environmental Protection Policies • Model operating conditions ERA 63—Sewage Treatment • *End of waste code Biosolids (ENEW07359617)* • *Code of environmental compliance ERA 63 — Sewage treatment activities (including Sewage Pumping Stations)*
Effluent / biosolid (sludge) re-use	The reuse of effluent and biosolids is desirable and occurs wherever economically as well as environmentally appropriate and sustainable.	• *Guidelines for Sewerage Systems: Use of Reclaimed Water — February 2000*— Agriculture and Resource Management Council of Australia and New Zealand and Australian and New Zealand Environment and Conservation Council • Model operating conditions ERA 63—Sewage Treatment • *End of waste code Biosolids (ENEW07359617)* • *Water quality guidelines for recycled water schemes November 2008*—Department of Energy and Water Supply.
Infrastructure design / planning standards	Design of the sewerage network complies with established codes and standards.	• *Planning Guidelines for Water Supply and Sewerage 2010*— Department of Energy and Water Supply. • *WSA 02 - 2002 Sewerage Code of Australia,* Water Services Association of Australia • *WSA 04-2005 Sewage Pumping Station Code of Australia,* Water Services Association of Australia • Standards in Development Design Code • CMDG • Code of environmental compliance ERA 63 — Sewage treatment activities (including Sewage Pumping Stations)

8.4.3. Transport network desired standard of service

Table 8.4.3 Transport network desired standard of service

Measure	Planning criteria (qualitative standards)	Design criteria (quantitative standards)
Road network design / planning standards	The road network provides a functional urban and rural hierarchy that supports settlement patterns, commercial and economic activities, and freight movement. Design of the road system complies with established codes and standards.	• Standards in Development Design Code • CMDG • *RPDM—DTMR Road Planning and Design Manual (2nd Edition* • Australian Standards • AUSTROADS guides • *Complete Streets: Guidelines for urban street design*—IPWEAQ
Cycleway and pathway design/planning standards	Cycleways and pathways provide a safe and convenient network that encourages walking and cycling as acceptable alternatives. Design of the network will comply with established codes and standards.	• Standards in Development Design Code • CMDG • Australian Standards • *Guide to Road Design – Part 6A: Pedestrian and Cyclist Paths*—.AUSTROADS • *Complete Streets: Guidelines for urban street design*—IPWEAQ

8.4.4. Stormwater network desired standards of service

Table 8.4.4 Stormwater desired standard of service

Measure	Planning criteria (qualitative standards)	Design criteria (quantitative standards)
Quantity	Collect and convey stormwater from public land in natural and engineered channels, a piped, drainage network and system of overland flow paths to a lawful point of discharge.	• Queensland Urban Drainage Manual • Local government standards in planning scheme and planning scheme policies
Environmental impacts	Adopt water-sensitive urban design principles; and on-site water quality management to achieve EPA water quality objectives when conducting road construction activities.	• Environmental Protection (Water) Policy 2019 • Local Government standards in planning scheme and planning scheme policies
Infrastructure design/planning standards	Design of the stormwater network will comply with established codes and standards.	• Queensland Urban Drainage Manual • Local government standards in planning scheme

8.4.5. Parks and land for community facilities network desired standard of service

Table 8.4.5 Parks and land for community facilities desired standard of service

Measure	Planning criteria (qualitative standards)	Design criteria (quantitative standards)
Functional network	A network of parks and land for community facilities provides for a range of recreational and sporting activities and the development of community facilities.	• Parks and land for community facilities are provided at a local, district and Local Government Area (LGA-wide) level • Parks and land for community facilities addresses the needs of both recreation and sporting activities and provides for development of community facilities.
Accessibility	The location of parks and land for community facilities allows adequate pedestrian, cycle and vehicle access.	Accessibility standards are identified in Table 8.4.6 – Accessibility standard
Land quality / suitability Minimum size Maximum grade Flood immunity	The standard of parks and land for community facilities supports a range of recreational, sporting, health–promoting activities and services. This includes ensuring land is of an appropriate size, configuration and slope, and has an acceptable level of flood immunity.	• The rate of park and land for community facilities provision is identified in Table 8.4.7 – Rate of land provision • The size of park and land for community facilities is identified in Table 8.4.8 - Size. • The maximum gradient for park and land for community facilities is identified in Table 8.4.9 – Maximum desired grade. • The minimum flood immunity for park and land for community facilities is identified in Table 8.4.10- Minimum desired flood immunity.
Facilities / embellishments	Parks contain a range of embellishments to complement the type and purpose of the park.	• Standard embellishments for each type of park are identified in Table 8.4.11 – Standard facilities/embellishments
Infrastructure design / performance standards	The network of parks maximises opportunities to co-locate recreational parks and community facilities in proximity to other community infrastructure, transport hubs and valued environmental and cultural assets.	• Standards in planning scheme Development design code • CMDG • Australian Standards

Table 8.4.6 Accessibility standard

Infrastructure type	Accessibility standard (km)		
	Local	District	LGA wide
Recreation park	0.8	50	100
Sport park	100	100	150
Land for community facilities	60	60	150

Table 8.4.7 Rate of land provision

Infrastructure type	Rate of provision (ha/1000 people)		
	Local	District	LGA wide
Recreation park	0.4	0.5	1.4
Sport park		1.5	0.8
Land for community facilities		0.1	0.1

Table 8.4.8 Size

Infrastructure type	Minimum size (ha)		
	Local	District	LGA wide
Recreation park	0.4	2	2
Sport park	1.5	1.5	1.5
Land for community facilities	0.2	0.2	0.2

Table 8.4.9 Maximum desired grade

Infrastructure type	Maximum desired grade (%)		
	Local	District	LGA wide
Recreation park	20	20	20
Sport park	100% of area – 0	100% of area – 0	100% of area – 0
Land for community facilities	80% of area <5	80% of area <5	80% of area <5

Table 8.4.10 Minimum desired flood immunity

Infrastructure type	Minimum flood immunity (% of total area)								
	Local			District			–LGA wide		
	Flood immunity (% AEP)								
	20	2	1	20	2	1	20	2	1
Recreation park	100	10		100	10		100	10	
Sport park				100		Buildings		100	Buildings
Land for community facilities						100			100

Table 8.4.5 Standard facilities / embellishments

Embellishment type	Recreation parks			Sport parks	
	Local	District	LGA wide	District	LGA wide
Internal roads			✓		✓
Parking		✓	✓	✓	✓
Fencing/bollards		✓	✓	✓	✓
Lighting			✓		✓
Toilet		✓	✓	✓	✓
Paths (pedestrian/cycle)		✓	✓	✓	✓
Seating	✓	✓	✓	✓	✓
Shade structures		✓	✓	✓	✓
Covered seating and table			✓		✓
Tap/bubbler	✓	✓	✓	✓	✓
BBQ		✓	✓		✓
Bins	✓	✓	✓	✓	✓
Landscaping (including earthworks, irrigation and revegetation)			✓		✓
Signage	✓	✓	✓	✓	✓
Activity areas	✓		✓		✓

8.5. Plans for trunk infrastructure

(1) The plans for trunk infrastructure identify the trunk infrastructure networks intended to service the existing and assumed future urban development at the desired standard of service up to 2036.

8.5.1. Plans for trunk infrastructure maps

(1) The existing and future trunk infrastructure networks are shown in Schedule 2.

Table 8.5.1 Plans for trunk infrastructure

Map title	Map number
Plans for trunk infrastructure – Transport network	Transport Maps 2.0-2.4
Plans for trunk infrastructure – Sewer network	Sewerage Maps 3.0-3.4
Plans for trunk infrastructure – Water supply network	Water Supply Maps 4.0-4.8
Plans for trunk infrastructure – Stormwater network	Stormwater Maps 5.0-5.4
Plans for trunk infrastructure – Parks and land for community facilities network	Parks and Land for Community Facilities Maps 6.0-6.7

(2) The State infrastructure forming part of transport trunk infrastructure network has been identified using information provided by the relevant State infrastructure supplier.

8.5.2. Schedules of works

(1) Details of the existing and future trunk infrastructure networks are identified in the electronic Excel schedule of works model which can be viewed on Council's website.

(2) The future trunk infrastructure is identified in the following tables in Schedule 2 —Local government infrastructure plan mapping and tables:
- (a) for the water supply network, **Table SC2.3.1**;
- (b) for the sewerage network, **Table SC2.3.2**;
- (c) for the transport network, **Table SC2.3.3**; and
- (d) for the parks and land for community facilities network, **Table SC2.3.4**;
- (e) for the stormwater network, **Table SC2.3.5.**

8.5.3. Extrinsic material

(1) The below table identifies the documents that assist in the interpretation of the local government infrastructure plan and are extrinsic material under the *Statutory Instruments Act 1992*.

Table 8.5.2 List of extrinsic material

Title of document	Date	Author
Input to LGIP Assumptions Banana LGA	October 2024	Foresight Partners
Background information for Transport Network for the BSC LGIP	June 2025	Banana Shire Council
Background information for Water Supply and Sewerage Networks for the BSC LGIP	June 2025	Banana Shire Council
Background information for Stormwater Network for the BSC LGIP	June 2025	Banana Shire Council
Background information for Parks and Land for Community Facilities Network for the BSC LGIP	June 2025	Banana Shire Council
Baralaba WTP Planning Report	May 2010	City Water Technology
Baralaba WTP Treatment Options Report	December 2011	City Water Technology
Baralaba Water Supply Planning Report	January 2007	Cardno
Biloela Sewerage planning & modelling report	May 2024	Morris Water
Biloela Network Modelling Planning Report	July 2024	Morris water
Moura Network Modelling Planning Report	Oct 2024	Morris water
Theodore Water Supply Planning Report	June 2022	EngineersPlus
Theodore WTP Planning Report	July 2022	City Water Technology
Taroom water supply planning report	Nov 2024	Morris water
Moura sewerage planning report	Dec 2024	Morris water
Theodore sewerage planning report	Dec 2024	Morris water
Biloela WTP planning report	July 2024	City Water Technology
New Moura WTP options report	Sep 2011	City Water Technology
Biloela sewerage treatment plant strategic planning report	April 2023	SMEC
Investigation into Sewer Overflows – Malakoff St Area, Biloela	February 2015	M1 Consulting
Banana Shire Council Valley View_09 Infrastructure Agreement 1998	1998	Banana Shire Council
Taroom WTP pH Correction Concept Design Report	2023	MJM Environmental
Taroom WTP Cooling Tower Concept Design Report	2023	MJM Environmental
Moura WTP Planning Report	June 2010	City Water Technology
Moura Recycled Water Use Options	September 2009	Wide Bay Water Corporation
Park Development Strategy 2014 – 2019		Banana Shire Council

Schedule 2 Local government infrastructure plan mapping and supporting material

(1) The Local Government Infrastructure Plan (LGIP) is completely contained in Part 8 of the Planning Scheme.

SC2.1 Local government infrastructure plan maps

Table SC2.1.1 Plans for trunk infrastructure

Map title	Map number
Priority Infrastructure Area	PIA Maps 1.0-1.4
Plans for trunk infrastructure – Transport network	Transport Maps 2.0-2.4
Plans for trunk infrastructure – Sewer network	Sewerage Maps 3.0-3.4
Plans for trunk infrastructure – Water supply network	Water Supply Maps 4.0-4.8
Plans for trunk infrastructure – Stormwater network	Stormwater Maps 5.0-5.4
Plans for trunk infrastructure – Parks and land for community facilities network	Parks and Land for Community Facilities Maps 6.0-6.7

SC2.2 Planning assumption tables

Table SC2.2.1 Existing and projected population

Column 1 Projection area	Column 2 LGIP development type	Column 3 Existing and projected population				
		2021	2026	2031	2036	Ultimate development
Biloela	Single dwelling	5,056	5,119	5,183	5,246	10,255
	Multiple dwelling	563	565	571	577	731
	Other	49	49	49	49	70
	Total	5,668	5,733	5,803	5,872	11,056
Moura	Single dwelling	1,755	1,798	1,841	1,884	2,584
	Multiple dwelling	106	114	114	116	118
	Other	15	17	17	17	17
	Total	1,876	1,929	1,972	2,017	2,719
Taroom	Single dwelling	563	580	598	615	1,902
	Multiple dwelling	19	20	20	20	81
	Other					-
	Total	582	601	618	636	1,983
Theodore	Single dwelling	425	425	425	425	618
	Multiple dwelling	24	24	24	24	36
	Other	24	24	24	24	45
	Total	473	473	473	473	699
Inside priority infrastructure area (total	Single dwelling	7,799	7,923	8,047	8,171	15,359
	Multiple dwelling	712	723	729	737	966
	Other	88	90	90	90	132
	Total	8,599	8,736	8,866	8,998	16,457
Outside priority infrastructure area (total)	Single dwelling	6,003	6,036	6,047	6,057	8,028
	Multiple dwelling	43	43	43	43	61
	Other	17	17	17	17	47
	Total	6,063	6,096	6,107	6,117	8,136
Banana Shire	Single dwelling	13,802	13,959	14,094	14,228	23,387
	Multiple dwelling	755	766	772	780	1,027
	Other	105	107	107	107	179
	Total	**14,662**	**14,832**	**14,972**	**15,115**	**24,593**

Table SC2.2.2 Existing and projected employees

Column 1 Projection area	Column 2 LGIP development type	Column 3 Existing and projected employees				
		2021	2026	2031	2036	Ultimate development
Biloela	Retail	524	532	540	548	1,223
	Commercial	324	329	335	340	370
	Industry	628	676	724	772	2,382
	Community	609	617	625	633	709
	Other	283	287	290	294	553
	Total	2,368	2,441	2,514	2,587	5,237
Moura	Retail	100	101	103	104	327
	Commercial	81	82	84	85	144
	Industry	315	324	334	343	467
	Community	204	207	209	212	255
	Other	94	96	99	101	136
	Total	794	811	828	845	1,329
Taroom	Retail	58	59	61	62	146
	Commercial	63	64	66	67	83
	Industry	62	63	65	66	978
	Community	145	146	148	149	172
	Other	29	30	31	32	99
	Total	357	363	370	376	1,478
Theodore	Retail	60	60	60	60	121
	Commercial	65	65	65	65	69
	Industry	88	88	88	88	91
	Community	119	119	119	119	135
	Other	24	24	24	24	35
	Total	356	356	356	356	451
Inside priority infrastructure area (total	Retail	742	753	763	774	1,817
	Commercial	533	541	549	557	666
	Industry	1,093	1,152	1,210	1,269	3,918
	Community	1,077	1,089	1,101	1,113	1,271
	Other	430	437	443	450	823
	Total	3,875	3,971	4,067	4,163	8,495
Outside priority infrastructure area (total)	Retail	323	326	328	331	383
	Commercial	111	114	116	119	642
	Industry	737	760	782	805	2,020
	Community	182	182	181	181	244
	Other	3,752	3,794	3,814	3,834	11,644
	Total	5,105	5,175	5,222	5,270	14,933
Banana Shire	Retail	1,065	1,078	1,092	1,105	2,200
	Commercial	644	655	665	676	1,308
	Industry	1,830	1,911	1,993	2,074	5,938
	Community	1,259	1,271	1,282	1,294	1,515
	Other	4,182	4,231	4,257	4,284	12,467
	Total	**8,980**	**9,146**	**9,289**	**9,433**	**23,428**

Table SC2.2.3 Existing and projected residential dwellings

Column 1 Projection area	Column 2 LGIP development type	Column 3 Existing and projected dwellings				
		2021	2026	2031	2036	Ultimate development
Biloela	Single dwelling	2,342	2,371	2,401	2,430	4,102
	Multiple dwelling	278	279	282	285	487
	Other	31	31	31	31	54
	Total	2,651	2,681	2,714	2,746	4,643
Moura	Single dwelling	937	960	983	1,006	1,034
	Multiple dwelling	55	59	59	60	62
	Other	8	9	9	9	9
	Total	1,000	1,028	1,051	1,075	1,105
Taroom	Single dwelling	311	321	330	340	761
	Multiple dwelling	17	18	18	18	43
	Other	-	-	-	-	-
	Total	328	339	348	358	803
Theodore	Single dwelling	246	246	246	246	247
	Multiple dwelling	19	19	19	19	19
	Other	24	24	24	24	24
	Total	289	289	289	289	290
Inside priority infrastructure area (total	Single dwelling	3,836	3,898	3,960	4,022	6,144
	Multiple dwelling	369	375	378	382	612
	Other	63	64	64	64	86
	Total	4,268	4,337	4,402	4,468	6,841
Outside priority infrastructure area (total)	Single dwelling	2,881	2,897	2,902	2,907	3,211
	Multiple dwelling	29	29	29	29	33
	Other	23	23	23	23	25
	Total	2,933	2,949	2,954	2,959	3,269
Banana Shire	Single dwelling	6,717	6,795	6,862	6,929	9,355
	Multiple dwelling	398	404	407	411	644
	Other	86	87	87	87	111
	Total	**7,201**	**7,286**	**7,356**	**7,427**	**10,110**

Table SC2.2.4 Existing and projected non-residential floor space

Column 1 Projection area	Column 2 LGIP development type	Column 3 Existing and projected non-residential floor space (m^2 GFA)				
		2021	2026	2031	2036	Ultimate development
Biloela	Retail	42,422	43,070	43,717	44,365	48,918
	Commercial	11,986	12,183	12,381	12,578	12,960
	Industry	77,907	83,862	89,816	95,771	285,818
	Community	90,279	91,465	92,651	93,837	92,162
	Other	-	-	-	-	-
	Total	**222,594**	**230,580**	**238,565**	**246,551**	**439,858**
Moura	Retail	8,104	8,152	8,152	8,152	13,063
	Commercial	2,999	3,041	3,041	3,041	5,046
	Industry	39,139	39,616	39,895	39,895	56,093
	Community	30,273	30,589	30,589	30,589	33,128
	Other	-	-	-	-	-
	Total	**80,515**	**81,398**	**81,677**	**81,677**	**107,330**
Taroom	Retail	4,679	4,707	4,707	4,707	5,832
	Commercial	2,339	2,372	2,372	2,372	2,916
	Industry	7,721	7,815	7,870	7,870	117,321
	Community	21,439	21,663	21,663	21,663	22,304
	Other	-	-	-	-	-
	Total	**36,178**	**36,557**	**36,612**	**36,612**	**148,373**
Theodore	Retail	4,842	4,842	4,842	4,842	4,842
	Commercial	2,421	2,421	2,421	2,421	2,421
	Industry	10,964	10,964	10,964	10,964	10,964
	Community	17,583	17,583	17,583	17,583	17,583
	Other	-	-	-	-	-
	Total	**35,810**	**35,810**	**35,810**	**35,810**	**35,810**
Inside priority infrastructure area (total	Retail	60,046	60,380	60,380	60,380	72,655
	Commercial	19,746	19,940	19,940	19,940	23,343
	Industry	135,730	138,630	140,086	140,908	470,195
	Community	159,574	160,905	160,905	160,905	165,178
	Other	-	-	-	-	-
	Total	**375,096**	**379,855**	**381,311**	**382,133**	**731,371**
Outside priority infrastructure area (total)	Retail	7205	7248	7248	7248	20531
	Commercial	1801	1812	1812	1812	5133
	Industry	90,547	91,629	92,600	92,642	242,428
	Community	47,972	48,159	48,159	48,159	49,822
	Other	12,015	18,315	21,315	24,315	37,288
	Total	**159,540**	**167,163**	**171,134**	**174,176**	**355,202**
Banana Shire	Retail	69,053	69,440	69,440	69,440	98,319
	Commercial	19,746	19,940	19,940	19,940	23,343
	Industry	226,276	230,259	232,687	233,550	712,623
	Community	207,546	209,064	209,064	209,064	215,000
	Other	12,015	18,315	21,315	24,315	37,288
	Total	**534,636**	**547,018**	**552,446**	**556,309**	**1,086,573**

Table SC2.2.5 Planned density and demand generation rate for a trunk infrastructure network

Column 1 – Area Classification	Column 2 – LGIP development Type	Column 3 – Developable area (ha)	Column 4 – Planned Density		Column 5 Demand generation rate for a trunk infrastructure network			
			Non-residential plot ratio	Residential Density (dwellings/ dev ha)	Water supply (EP/ dev ha)	Sewerage (EP/ha)	Transport (vpd/ha)	Parks and community facilities (ha/1,000 persons)
Residential								
General Residential Zone	Detached dwelling	510		10	24	24	60	4.8
General Residential Zone – Multiple Dwelling Precinct	Detached dwelling			20	48	48	120	4.8
	Attached dwelling - Dual occupancy			20	48	48	80	4.8
Mixed Use Zone (residential component)	Attached dwelling - Other	46		40	96	96	160	4.8
Rural Residential	Detached dwelling	277		2	4.8	4.8	12	4.8
Township	Detached dwelling (within water service catchment)	115		8	19.2	19.2	48	4.8
	Detached dwelling (outside water service catchment)			2	n/a	n/a	12	4.8
Rural	Detached dwelling	2,569,430		0.0005			0.003	4.8
Non-Residential								
Centre Zone	Commercial	18.8	0.8		16.3	16.3	68	
	Retail		0.6		12.2	12.2	357	
Township Zone	Commercial	See above	0.8		16.3	16.3	68	
	Retail		0.6		12.2	12.2	357	
	Community purpose		0.8		16.3	16.3	238	
Mixed Use Zone – Highway Precinct	Retail	See above	0.6		12.2	12.2	357	
Community Facilities Zone	Community purpose	1622.2	0.8		16.3	16.3	238	
Industry Zone	Industry	124	0.6		12.2	12.2	25.5	

Table SC2.2.6 Existing and projected demand for the water supply network

Column 1 Service catchment	Column 2 Existing and projected demand (EP)				
	2021	2026	2031	2036	Ultimate development
Biloela (including Lake Callide and Thangool)	10439	11539	11811	12343	15483
Moura (including Banana)	2535	2643	2754	2870	3516
Taroom	915	940	970	990	1923
Theodore	527	582	637	692	1371
Baralaba	443	443	443	443	700
Total	14859	16147	16615	17338	22993

Table SC2.2.7 Existing and projected demand for the sewerage network

Column 1 Service catchment	Column 2 Existing and projected demand (EP)				
	2021	2026	2031	2036	Ultimate development
Biloela	9447	9730	9982	10238	13627
Moura	2361	2402	2496	2610	3242
Taroom	815	840	870	1575	1675
Theodore	420	425	438	449	827
Total	13043	13397	13786	14872	19371

Table SC2.2.8A Existing and projected demand for the transport (roads) network

Column 1 Service catchment	Column 2 Existing and projected demand (vpd)				
	2021	2026	2031	2036	Ultimate development
Biloela	171,104	176,874	182,652	188,429	334,677
Moura	62,235	63,011	63,344	63,486	81,619
Taroom	27,259	27,586	27,682	27,740	108,599
Theodore	26,715	26,715	26,715	26,715	26,721
Rural	129,172	134,604	137,414	139,573	268,139
Total LGA	416,484	428,789	437,807	445,944	819,755

Table SC2.2.8B Existing and projected demand for the active transport network

Column 1 Service catchment	Column 2 Existing and projected demand (population)				
	2021	2026	2031	2036	Ultimate development
Biloela	5,668	5,733	5,803	5,872	11,056
Moura	1,876	1,929	1,972	2,017	2,719
Taroom	582	601	618	636	1,983
Theodore	473	473	473	473	699
Rural	6,063	6,096	6,107	6,117	8,136
Total	**14,662**	**14,832**	**14,972**	**15,115**	**24,593**

Table SC2.2.9 Existing and projected demand for the parks and land for community facilities network

Column 1 Service catchment	Column 2 Existing and projected demand (population)				
	2021	2026	2031	2036	Ultimate development
Biloela	5,668	5,733	5,803	5,872	11,056
Moura	1,876	1,929	1,972	2,017	2,719
Taroom	582	601	618	636	1,983
Theodore	473	473	473	473	699
Rural	6,063	6,096	6,107	6,117	8,136
Total	**14,662**	**14,832**	**14,972**	**15,115**	**24,593**

Table SC2.2.10 Existing and projected demand for the stormwater network

Column 1 Service catchment	Column 2 Existing and projected demand (impervious hectares)				
	2021	2026	2031	2036	Ultimate development
Biloela	133.7	148.5	163.3	178.1	192.9
Moura	55.5	61.8	68.1	74.5	80.8
Taroom	41.1	45.8	50.4	55.1	59.7
Theodore	0	0	0	0	0
Total	**230.2**	**256.1**	**281.9**	**307.7**	**333.5**

SC2.3 Schedules of works

Table SC2.3.1 Water supply network schedule of works

Column 1 Map reference	Column 2 Trunk infrastructure		Column 3 Est. timing	Column 4 Est. cost
W01	Callide	DN150 upgrade Lake Callide Drive water main - fire flow	2021-26	213,053
W02	Moura	DN150 upgrade along Young St, Master St and Gillespie St, starting at the intersection of McArthur St and Young St - fire flow	2021-26	142,035
W03	Theodore	500 KL reservoir	2021-26	826,901
W04	Taroom	WTP treatment process upgrades	2021-26	622,963
W05	Taroom	Pump station upgrade (peak hour pressure)	2031-36	479,606
W06	Taroom	1500 kL reservoir	2031-36	1,712,880
W07	Taroom	Bore 3 and rising main	2026-31	2,104,500
W08	Thangool	DN150 upgrade Aerodrome Road water main - fire flows	2021-26	52,080
W09	Thangool	DN150 upgrade Ford Street water main - fire flows	2021-26	75,752
W10	Theodore	DN150 main from WTP to Nathan St - fire flow	2026-31	75,972
W11	Theodore	DN150 upgrade in Seventh Ave - fire flow	2031-36	26,425
W12	Theodore	DN150 upgrade in Dawson Ave (head loss)	2031-36	19,026
TOTAL				**$6,351,194**

Table SC2.3.2 Sewerage network schedule of works

Column 1 Map reference	Column 2 Trunk infrastructure		Column 3 Est. timing	Column 4 Est. cost
S01	Biloela	Gravity main diversion of PS05 (150mm dia)	2021-26	98,690
S02	Biloela	PS03 emergency storage upgrade, manhole raising and screened flow	2021-26	603,290
S03.1	Biloela	PS03 main realignment - rising main (225mm dia)	2021-26	1,070,184
S03.2	Biloela	PS03 main realignment - gravity main (300mm dia)	2021-26	1,935,971
S04	Biloela	Upgrading gravity main from PS03 to Alexander Ave (225mm dia)	2031-36	2,025,261
S05	Moura	22 kL of additional emergency storage at PS01	2021-26	524,600
TOTAL				**$6,257,996**

Table SC2.3.3 Transport network schedule of works

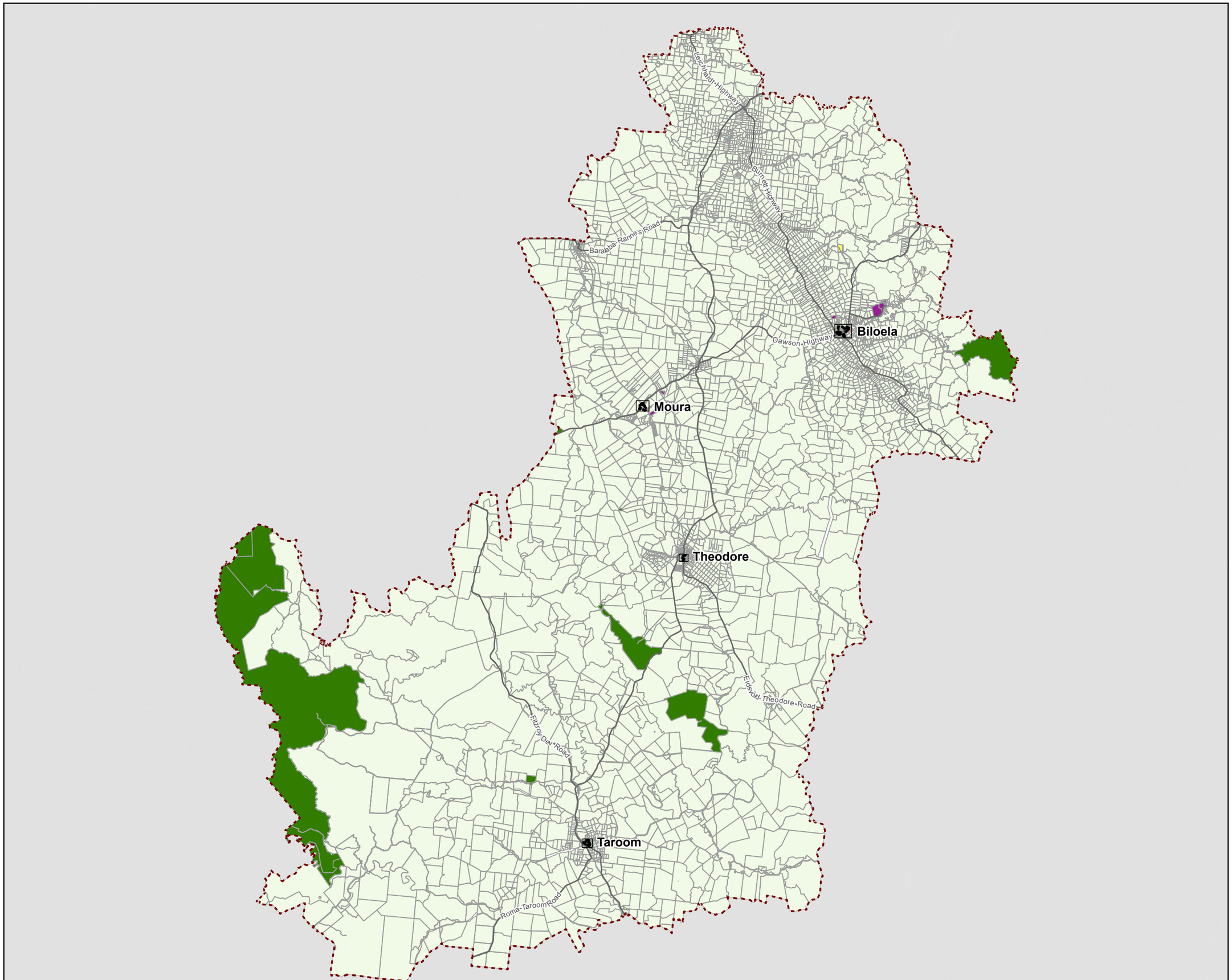
Column 1 Map reference	Column 2 Trunk infrastructure	Column 3 Est. timing	Column 4 Est. cost
T01	Upgrade of Three Chain Road, Kianga (LRRS) to a Major Collector standard	2021-2023	3,475,475
T02	Upgrade of Theodore Moura Road, Kianga (LRRS) to a Major Collector standard	2021-2024	4,196,800
T03	Upgrade of culvert structure and pavement on Harsants Road, Lawgi Dawes (LRRS)	2023	1,704,950
T04	Upgrade of Walloon Street, Partridge Drive and Eleventh Avenue, Theodore to an Industrial Collector Standard	2023-2026	5,246,000
T05	Upgrade of Baileys Lane, Biloela (LRRS) to a Major Collector standard.	2025-2026	1,967,250
T06	Upgrade of Defence Road, Camboon (LRRS) to a Rual Major Collector standard.	2025-2026	10,492,000
T07	Upgrade of Orange Creek Road, Orange Creek to a Major Collector standard	2025-2030	7,015,000
T08	Upgrade of Rigby Street and Tai Shue Street, Taroom, to an Industrial Collector Standard	2026-2027	701,500
T09	Upgrade of Paines Road, Biloela, to a Major Collector standard.	2026-2027	2,806,000
T10	Upgrade of Crowsdale Camboon Road, Prospect (LRRS) to a sealed standard	2029-2034	7,320,000
T11	Upgrade of Glenmoral Roundstone Road (LRRS) to a sealed standard	2030-2032	5,124,000
TOTAL			**$49,393,225**

Table SC2.3.4 Parks and Land for Community Infrastructure network schedule of works

Column 1 Map reference	Column 2 Trunk infrastructure	Column 3 Est. timing	Column 4 Est. cost
PK01	Construction of a new park embellishments in Goovigen	2021-2022	59,018
PK02	Construction of new fencing, parking, paths, drainage, exercise equipment and landscaping at Lions Park, Taroom	2021-2024	327,875
PK03	Installation of new play equipment in Junction Park, Theodore	2022	78,690
PK04	Construction of a shade sail above the playground in Melton Park, Biloela	2023	196,725
PK05	Construction of a Splash Park, playground equipment, facilities, parking and security in Lions Park, Biloela	2024-2025	3,895,155
PK06	Acquisition of land and construction of a new park in the southern portion of Moura	2025-2028	701,500
PK07	Construction of additional facilities, seating and other amenities at the Moura Basketball Courts	2026-2027	140,300
PK08	Installation of new play equipment in Wowan Park, Wowan.	2027	70,150
PK09	Installation of new gym equipment in McQuillan Park, Biloela	2027	70,150
PK10	Construction of Stage 2 of the Theodore Centenary Pathway within Rotary Park, including a viewing station.	2027-2030	1,403,000
PK11	Construction of a pedestrian bridge and other amenities in Malcom Husband Park / Jim Hooper Park in Biloela	2028	420,900
PK12	Construction of a shade sail above the outdoor gym equipment in Lions Park, Moura	2028	70,150
PK13	Construction of a new footpath, additional facilities, seating and play equipment in Lions Park, Taroom	2029	70,150
PK14	Installation of new play equipment in Leichhardt Park, Taroom	2029	70,150
PK15	Upgrade the parking area at Glebe Weir	2030	70,150
PK16	Upgrade toilet block at Riverside Park, Moura	2031	168,360
PK17	Upgrade toilet block at Bicentennial Park, Biloela	2032	73,200
PK18	Construction of a shelter at the Lake Callide Park, Lake Callide	2032	73,200
PK19	Installation of new seating and shelters at Jambin Park, Jambin	2033	51,240
PK20	Installation of new play equipment in Lions Park, Moura	2033	146,400
PK21	Upgrade shelters in Junction Park, Theodore	2034	73,200
PK22	Upgrade embellishments at Gilberts Lookout, Taroom.	2035	292,800
TOTAL			**$8,522,463**

Table SC2.3.5 Stormwater infrastructure network schedule of works

Column 1 Map reference	Column 2 Trunk infrastructure	Column 3 Est. timing	Column 4 Est. cost
SW01	Upgrade of trunk stormwater infrastructure in Cooper Street between Buckland Street and Coorada Street, Biloela	2021/26	1,311,500
SW02A	Installation of an underground drainage network within the Council controlled carparking area adjacent to Dawson Highway between the Meissners Road outlet to Exhibition Avenue – Southern side	2022/27	701,500
SW02B	Installation of an underground drainage network within the Council controlled carparking area adjacent to the Dawson Highway between Exhibition Avenue to Callistemon Street – Southern side	2027/28	1,403,000
SW02C	Installation of an underground drainage network within the Council controlled carparking area adjacent to the Dawson Highway between Callistemon Street to Dunn Street – Southern Side	2028/29	1,403,000
SW02D	Installation of an underground drainage network within the Council controlled carparking area adjacent to the Dawson Highway between Exhibition Avenue to Callistemon Street – Northern Side	2029/30	1,403,000
SW02E	Installation of an underground drainage network within the Council controlled carparking area adjacent to the Dawson Highway between Callistemon Street to Dunn Street – Northern Side	2030/31	1,403,000
SW03	Upgrade of trunk stormwater infrastructure in Possum Park, between Coorada Street and Callide Street, Biloela	2031/32	512,400
SW04	Upgrade of trunk stormwater infrastructure in Panorama Drive, Biloela	2032/33	439,200
SW05	Upgrade of trunk stormwater infrastructure in Hutton Street, Taroom	2033/34	1,464,000
SW06	Upgrade of trunk stormwater infrastructure network in Moura	2034/35	1,464,000
TOTAL			**$11,504,600**



Banana Local Government Infrastructure Plan 2025
Priority Infrastructure Area
Banana Shire

LEGEND

Priority Infrastructure Area (PIA)
- Priority Infrastructure Area

Zones
- Centre
- Community Facilities
- Environmental Management and Conservation
- General Residential
- Industry
- Mixed Use
- Recreation and Open Space
- Rural
- Rural Residential
- Special Industry
- Township

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road

DRAFT MAP - INTERNAL USE ONLY

Disclaimer:
While every care is taken to ensure the accuracy of this product, neither the Banana Shire Council nor the State of Queensland makes any representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the product being inaccurate or incomplete in any way or for any reason.

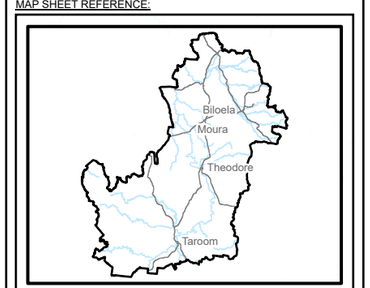
Gazettal date: day month year

0 5 10 20 Km

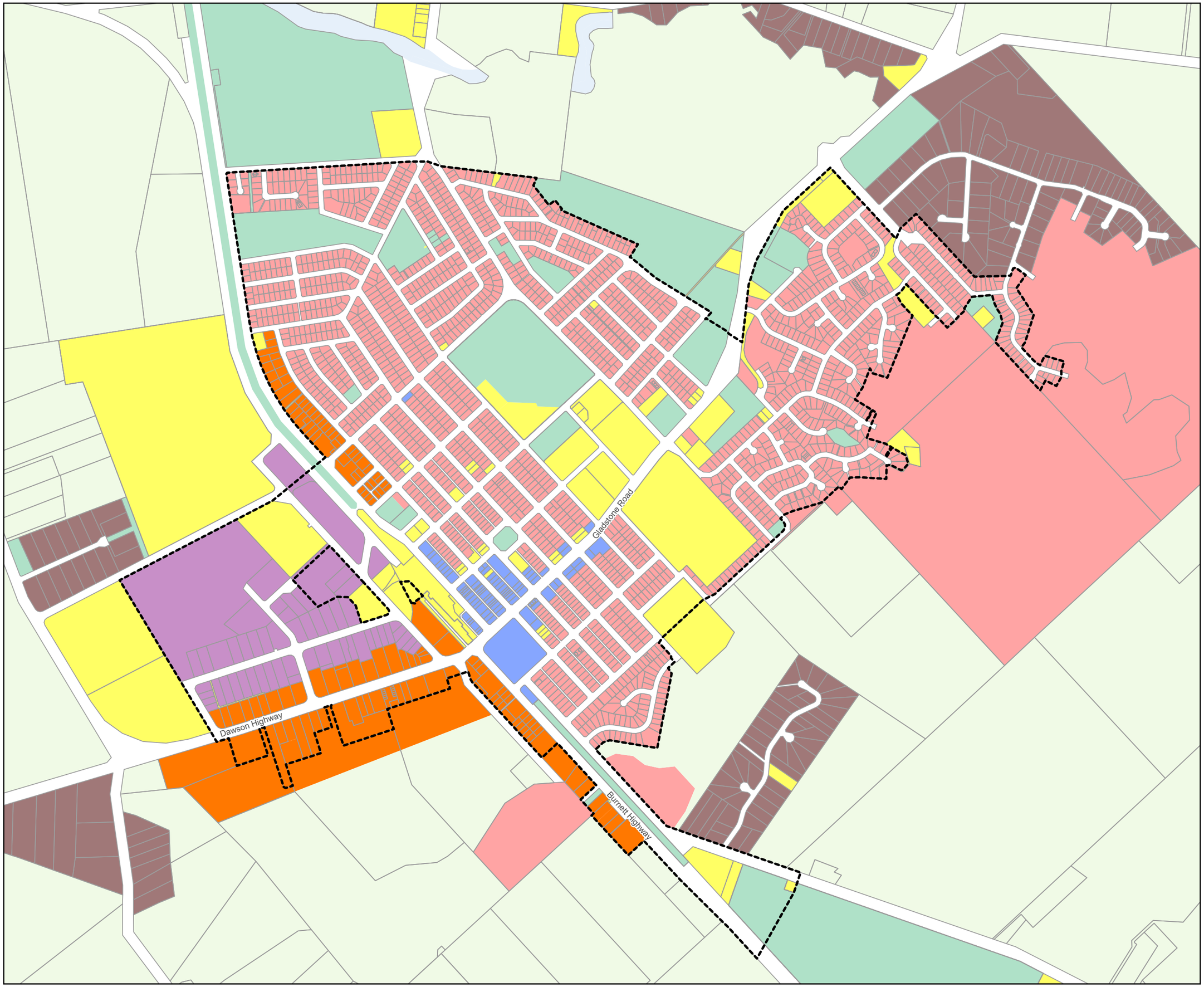
Scale: 1:950,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Priority Infrastructure Area Map - 1.0



Banana Local Government Infrastructure Plan 2025
Priority Infrastructure Area
Biloela

LEGEND

Priority Infrastructure Area (PIA)
- Priority Infrastructure Area

Zones
- Centre
- Community Facilities
- General Residential
- Industry
- Mixed Use
- Recreation and Open Space
- Rural
- Rural Residential

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

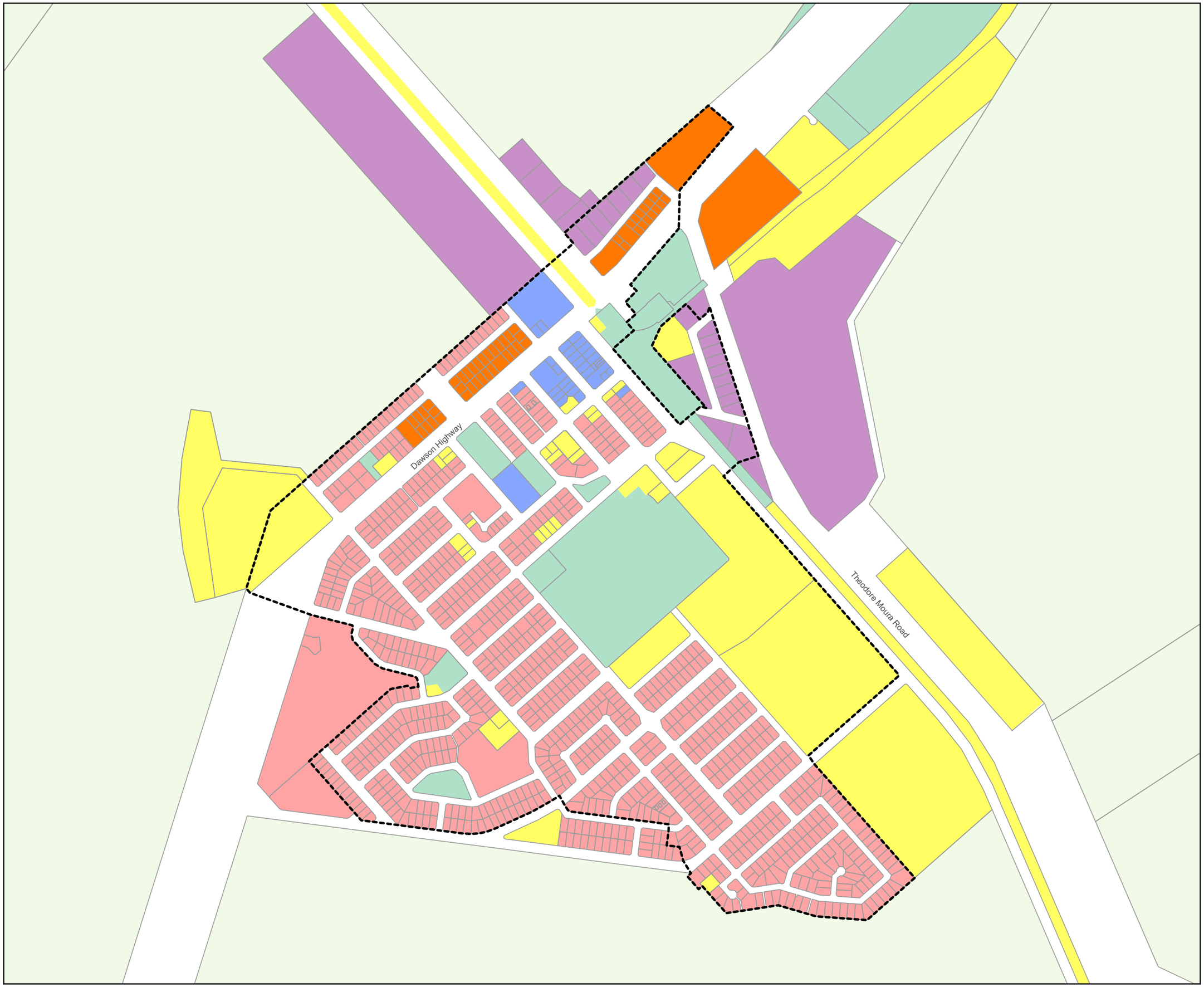
0 0.1 0.2 0.4 Km

Scale: 1:13,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Priority Infrastructure Area Map - 1.1



Banana Local Government Infrastructure Plan 2025
Priority Infrastructure Area
Moura

LEGEND

Priority Infrastructure Area (PIA)
- Priority Infrastructure Area

Zones
- Centre
- Community Facilities
- General Residential
- Industry
- Mixed Use
- Recreation and Open Space
- Rural

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

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Gazettal date: day month year

0 0.07 0.15 0.3 Km

Scale: 1:10,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Priority Infrastructure Area Map - 1.2

Leichhardt Highway

The Boulevard

Fifth Avenue

Railway Parade

Eidsvold - Theodore Road

Banana Local Government Infrastructure Plan 2025 Priority Infrastructure Area Theodore

LEGEND

Priority Infrastructure Area (PIA)

- Priority Infrastructure Area

Zones

- Centre
- Community Facilities
- General Residential
- Industry
- Recreation and Open Space
- Rural

Other map layers

- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.05 0.1 0.2 Km

Scale: 1:7,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Priority Infrastructure Area Map - 1.3

Banana Local Government
Infrastructure Plan 2025
Priority Infrastructure Area
Taroom

LEGEND

Priority Infrastructure Area (PIA)
- Priority Infrastructure Area

Zones
- Centre
- Community Facilities
- General Residential
- Industry
- Recreation and Open Space
- Rural
- Rural Residential

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

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Gazettal date: day month year

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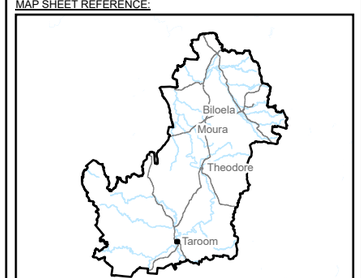
Scale: 1:8,000 @ A3

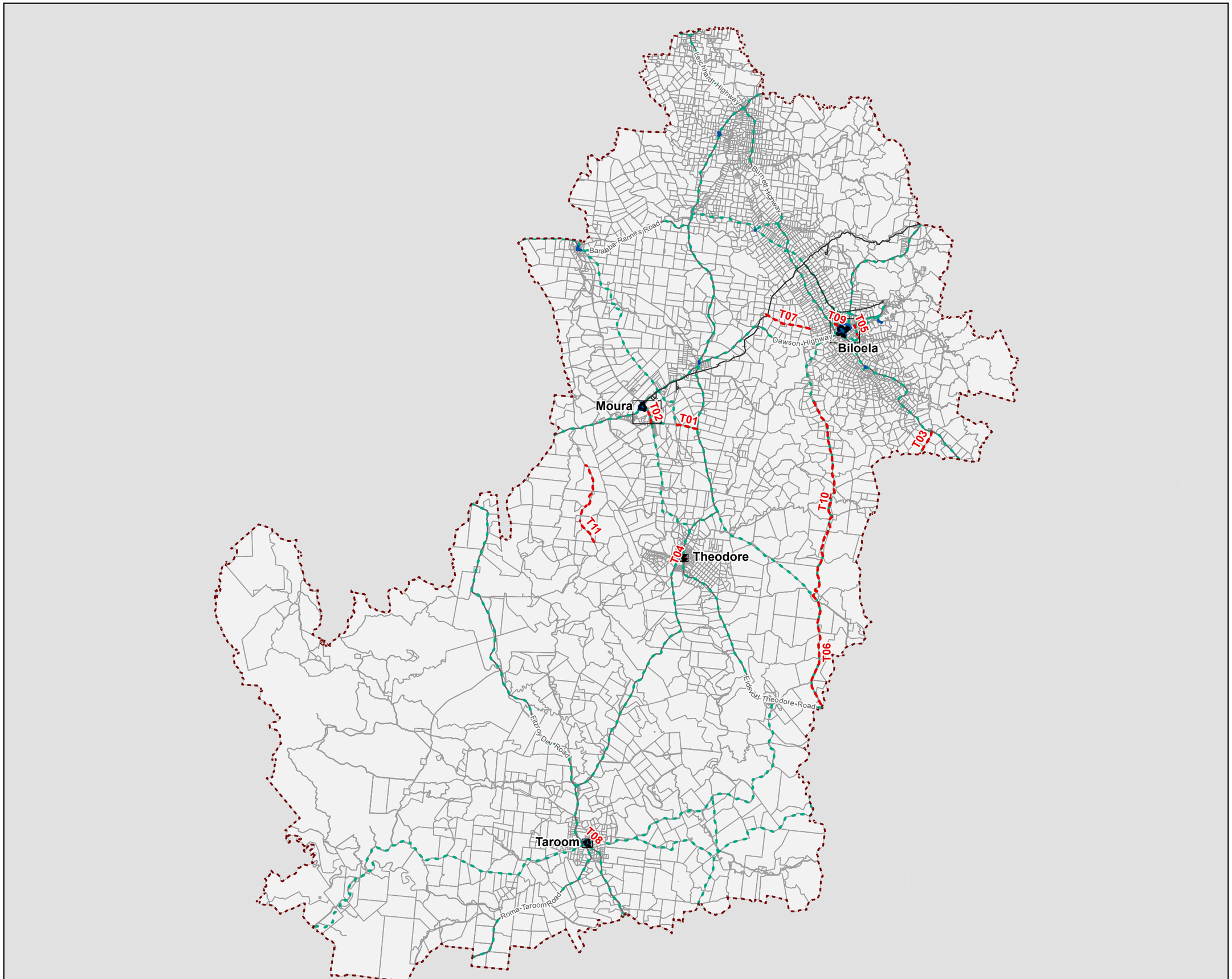
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Taroom Street
Yaldwyn Street
Dawson Street
Leichhardt Highway
Roma - Taroom Road
Cromwell Street

Priority Infrastructure Area Map - 1.4



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Banana Shire

LEGEND

Service catchment
- Service catchment boundary
- Biloela
- Moura
- Taroom
- Theodore
- Rural

Existing trunk infrastructure
- Existing roads
- Local Roads of Regional Significance (LRRS)

Future trunk infrastructure
- Future road project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road
- Railway line

DRAFT MAP - INTERNAL USE ONLY

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Gazettal date: day month year

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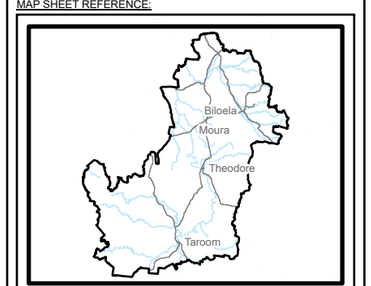
Km

Scale: 1:950,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Biloela

LEGEND

Service catchment
- Service catchment boundary
- Biloela
- Rural

Existing trunk infrastructure
- Existing roads
- Local Roads of Regional Significance (LRRS)

Future trunk infrastructure
- Future road project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road

DRAFT MAP - INTERNAL USE ONLY

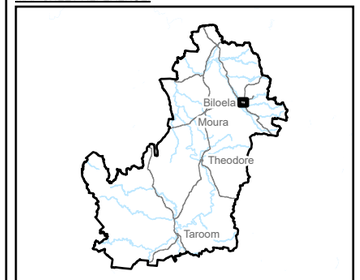
Gazettal date: day month year

0 0.2 0.4 0.8 Km

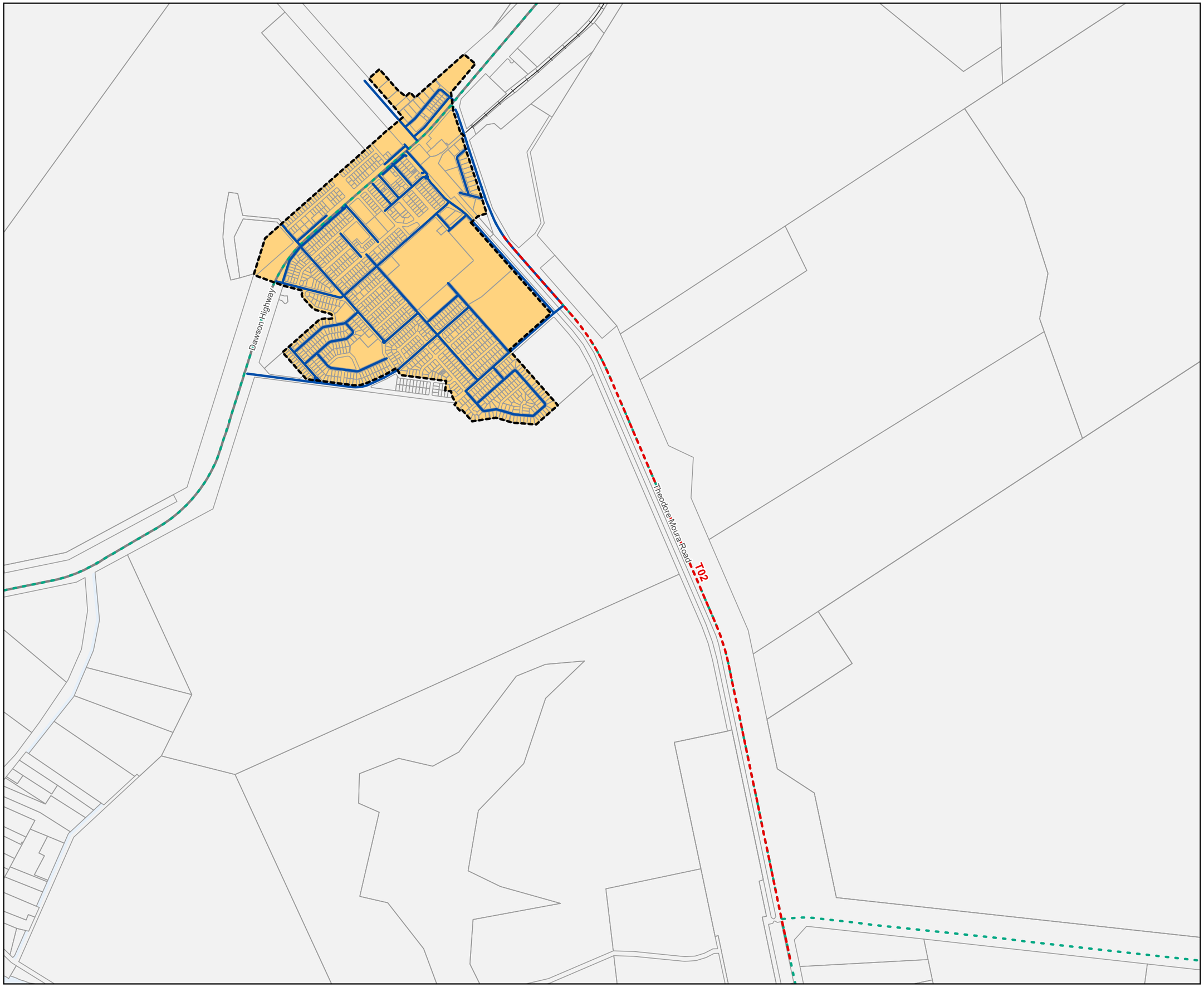
Scale: 1:23,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Plans for Trunk Infrastructure
Transport Map - 2.1



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Moura

LEGEND

Service catchment
- Service catchment boundary
- Moura
- Rural

Existing trunk infrastructure
- Existing roads
- Local Roads of Regional Significance (LRRS)

Future trunk infrastructure
- Future road project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road
- Railway line

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.17 0.35 0.7 Km

Scale: 1:22,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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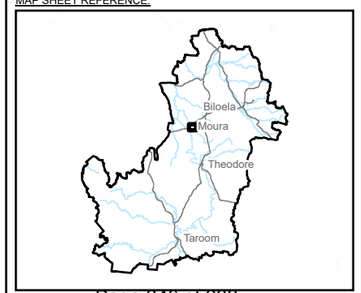


Plans for Trunk Infrastructure
Transport Map - 2.2

Leichhardt Highway

The Boulevard

T04

T04

T04

Fifth Avenue

Railway Parade

Eidsvold-Theodore Road

Banana Local Government Infrastructure Plan 2025 Plans for Trunk Infrastructure Theodore

LEGEND

Service catchment

- Service catchment boundary
- Theodore
- Rural

Existing trunk infrastructure

- Existing roads
- Local Roads of Regional Significance (LRRS)

Future trunk infrastructure

- Future road project

Other map layers

- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

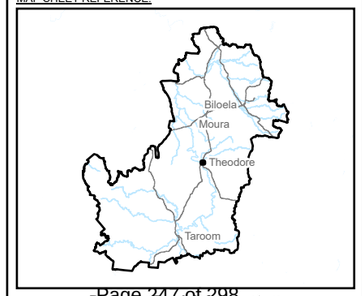
N

0 0.05 0.1 0.2 Km

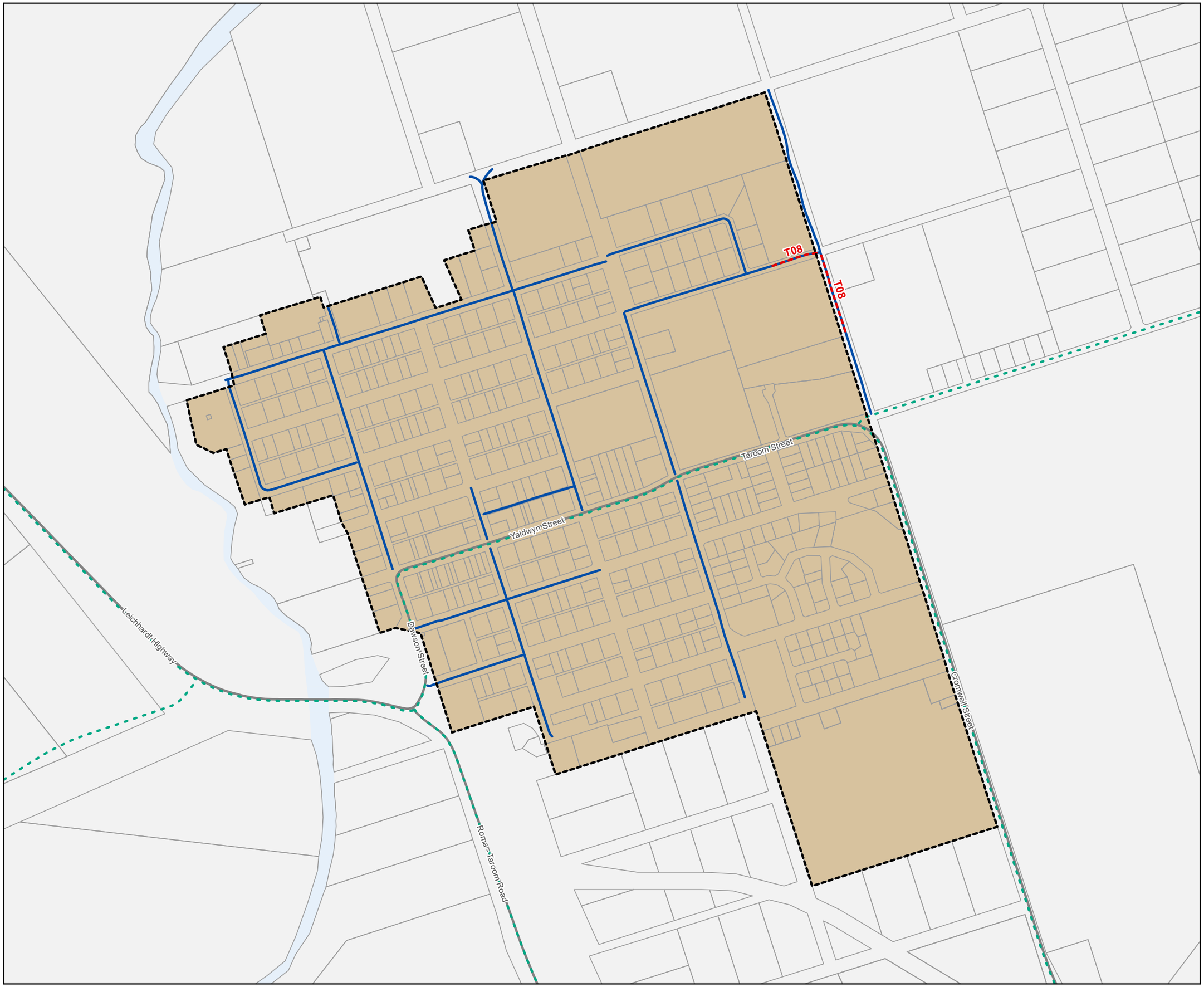
Scale: 1:7,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Plans for Trunk Infrastructure
Transport Map - 2.3



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Taroom

LEGEND

Service catchment
- Service catchment boundary
- Taroom
- Rural

Existing trunk infrastructure
- Existing roads
- Local Roads of Regional Significance (LRRS)

Future trunk infrastructure
- Future road project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road

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Gazettal date: day month year

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Scale: 1:8,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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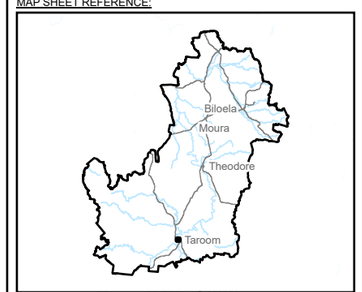
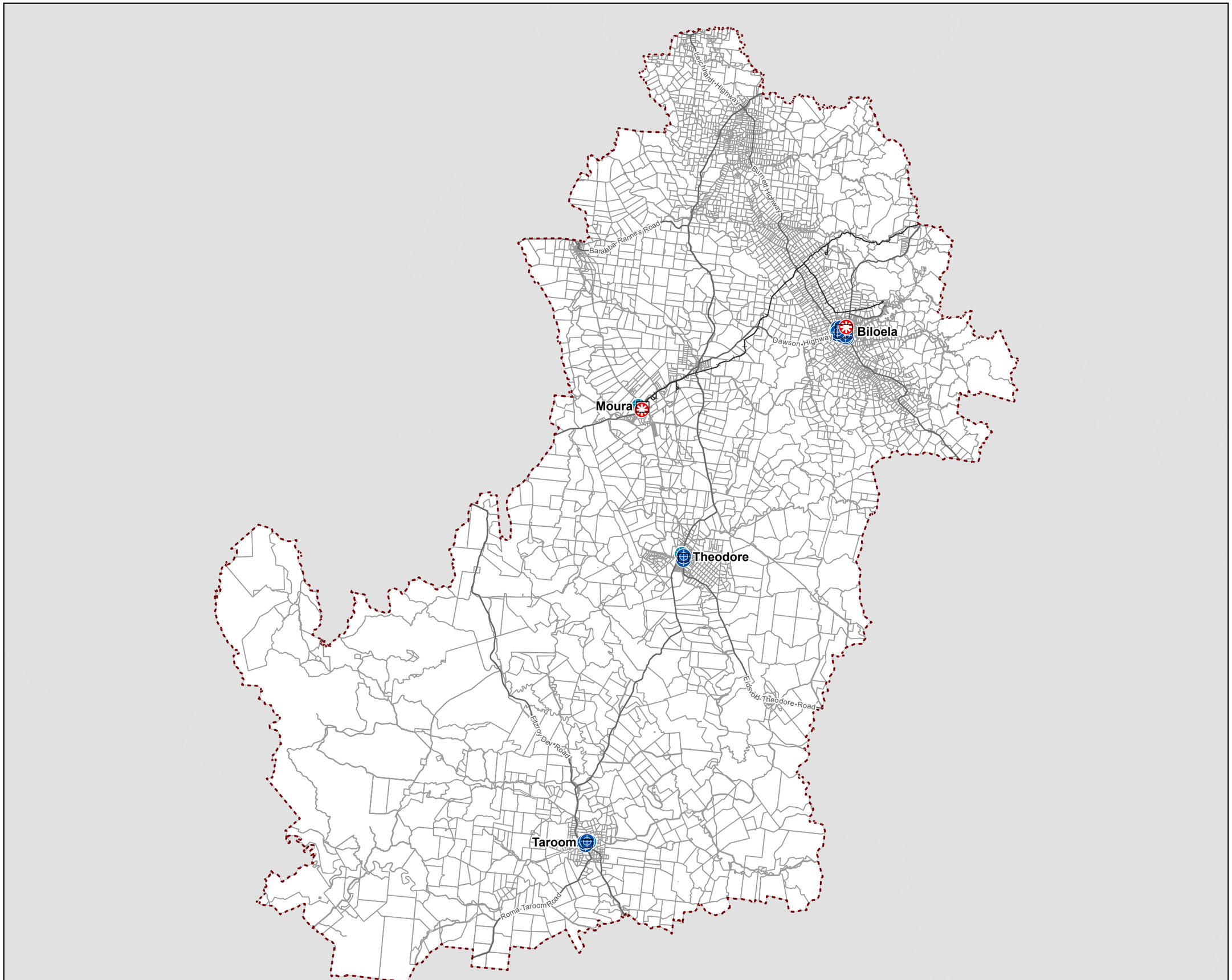


Plans for Trunk Infrastructure
Transport Map - 2.4



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Banana Shire

LEGEND

Service catchment
- Service catchment boundary
- Biloela
- Moura
- Taroom
- Theodore

Existing trunk infrastructure
- Pump station
- Sewerage treatment plant
- Gravity main
- Rising main

Future trunk infrastructure
- Future sewerage project
- Future sewerage project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road
- Railway line

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 5 10 20 Km

Scale: 1:950,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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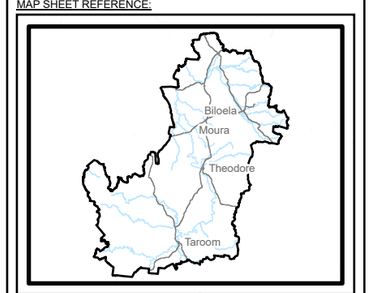
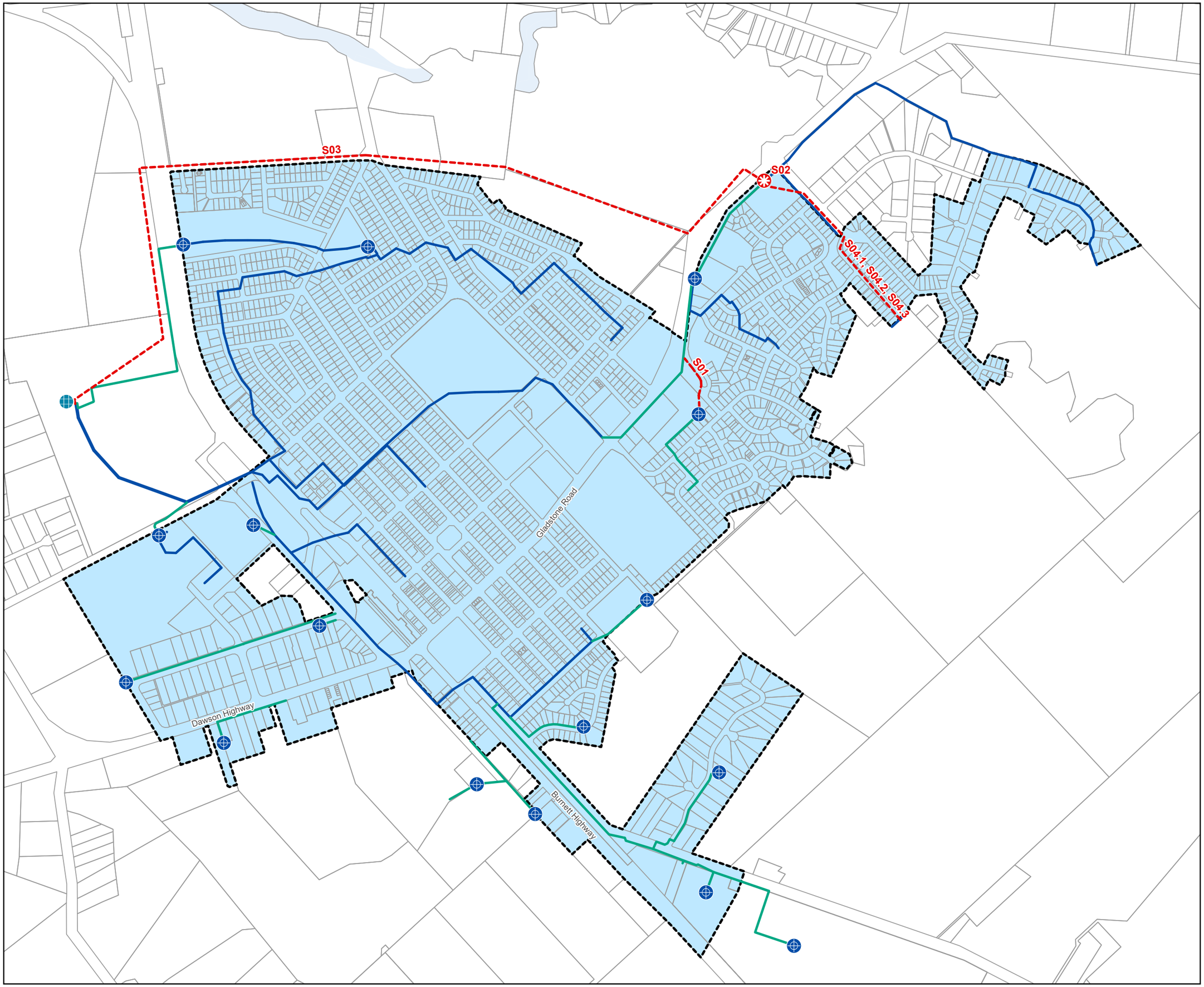


Plans for Trunk Infrastructure
Sewerage Map - 3.0



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Biloela

LEGEND

Service catchment
- Service catchment boundary
- Biloela

Existing trunk infrastructure
- Pump station
- Sewerage treatment plant
- Gravity main
- Rising main

Future trunk infrastructure
- Future sewerage project
- Future sewerage project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

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Gazettal date: day month year

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Scale: 1:13,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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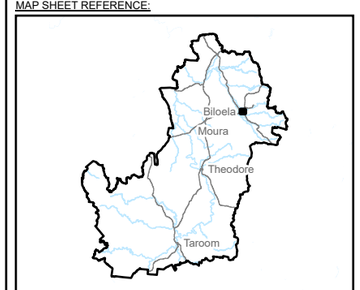
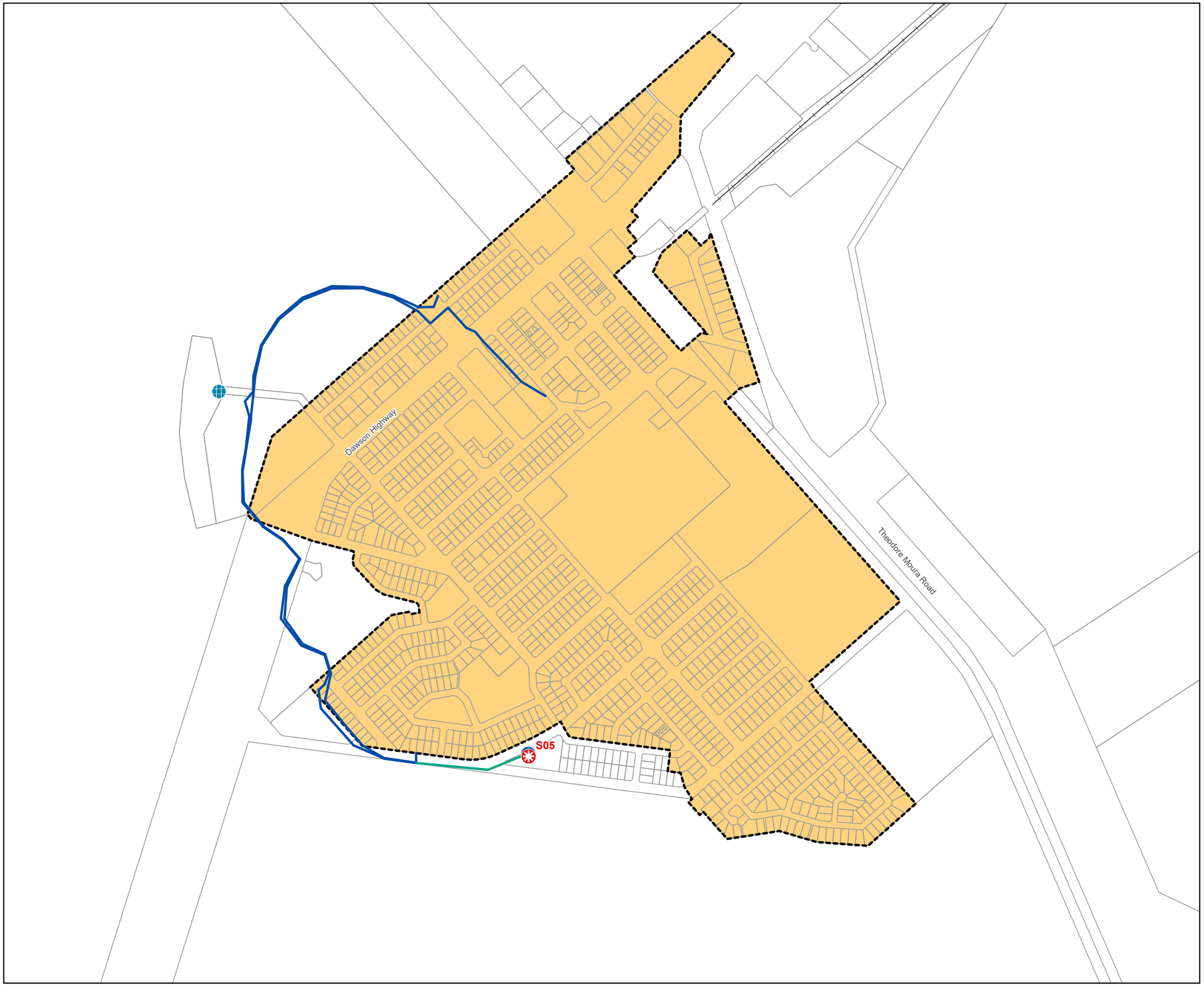


Plans for Trunk Infrastructure
Sewerage Map - 3.1



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Moura

LEGEND

Service catchment
- Service catchment boundary
- Moura

Existing trunk infrastructure
- Pump station
- Sewerage treatment plant
- Gravity main
- Rising main

Future trunk infrastructure
- Future sewerage project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- Railway line

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Gazettal date: day month year

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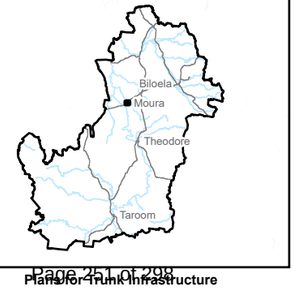
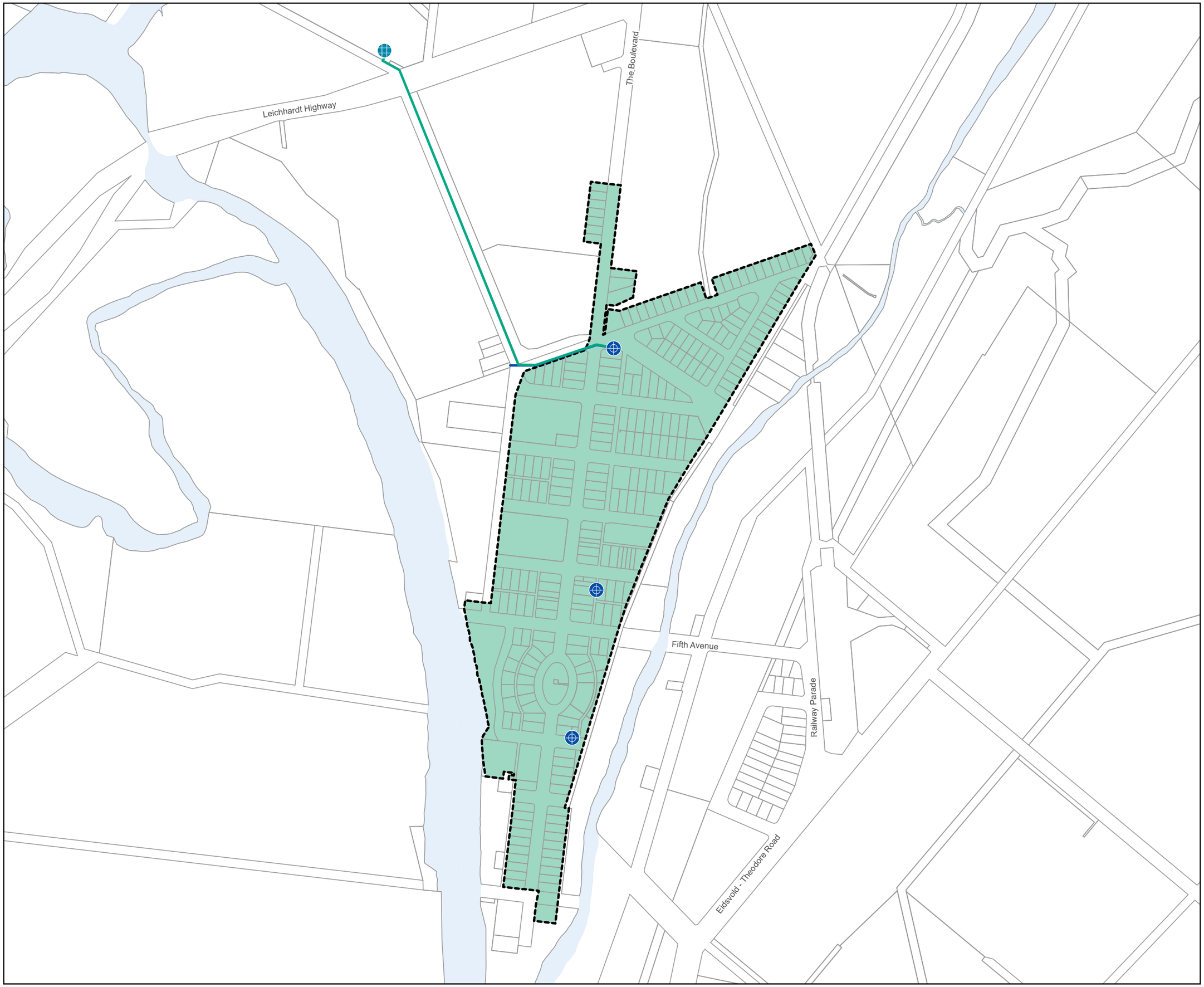
Scale: 1:10,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Plans for Trunk Infrastructure
Sewerage Map - 3.2



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Theodore

LEGEND

Service catchment
- Service catchment boundary
- Theodore

Existing trunk infrastructure
- Pump station
- Sewerage treatment plant
- Gravity main
- Rising main

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.05 0.1 0.2 Km

Scale: 1:8,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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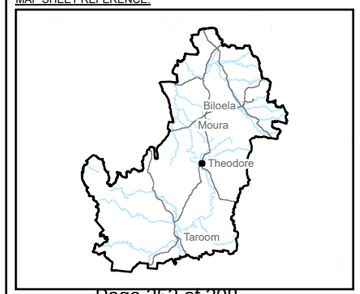
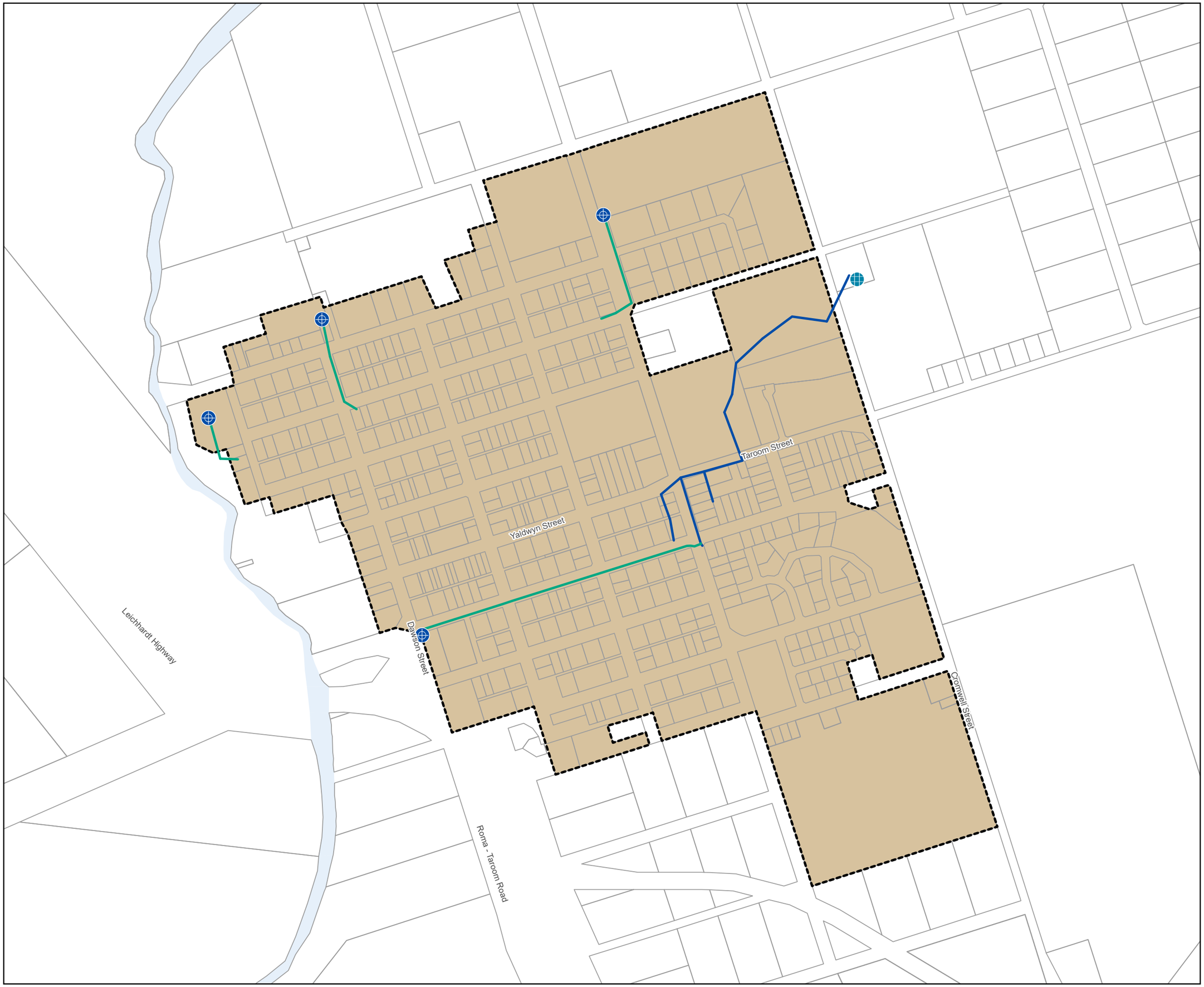




Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Taroom

LEGEND

Service catchment
- Service catchment boundary
- Taroom

Existing trunk infrastructure
- Pump station
- Sewerage treatment plant
- Gravity main
- Rising main

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

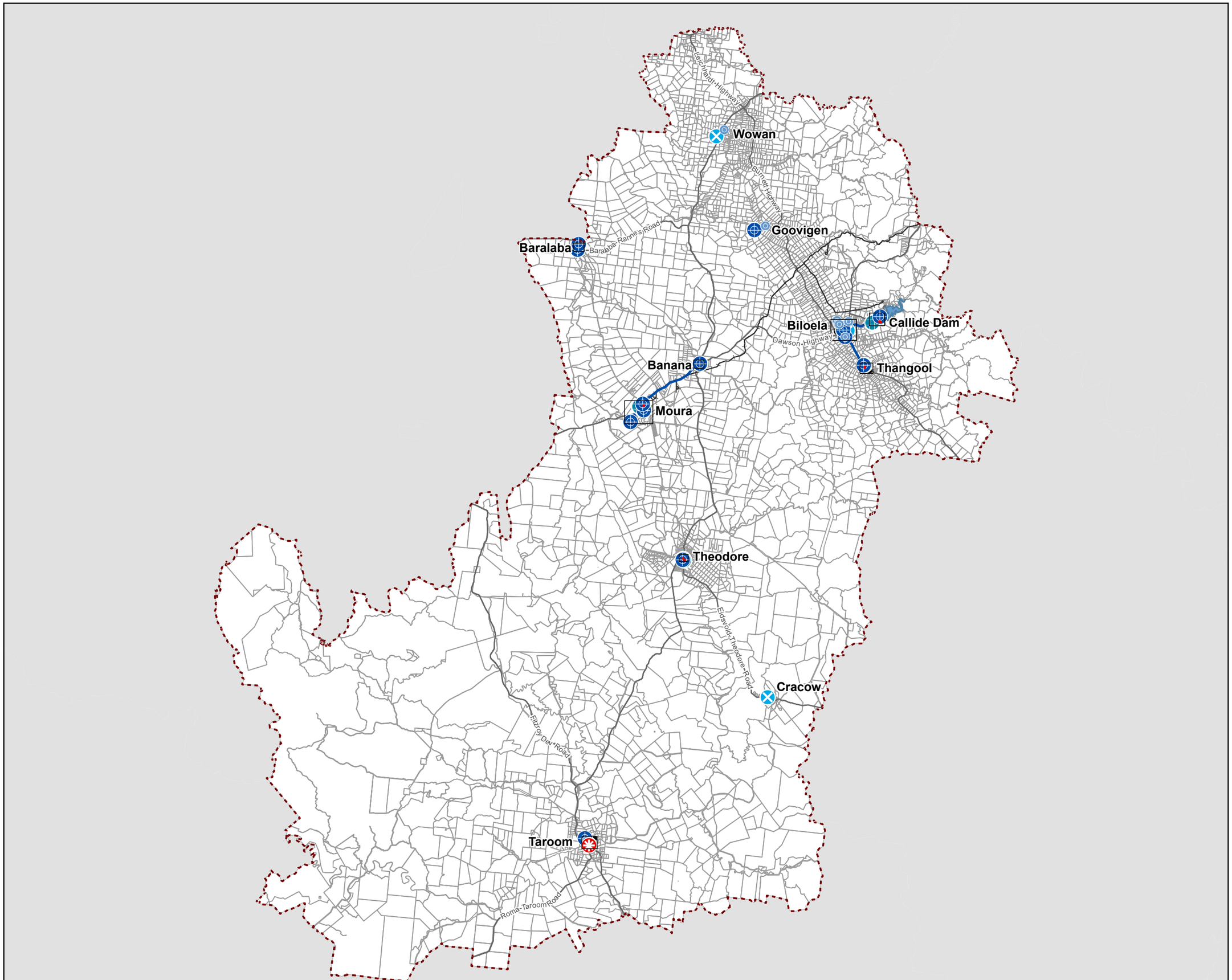
0 0.05 0.1 0.2 Km

Scale: 1:8,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Plans for Trunk Infrastructure
Sewerage Map - 3.4



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Banana Shire

LEGEND

Service catchment
- Service catchment boundary
- Baralaba
- Biloela (including Callide Dam and Thangool)
- Moura (including Banana)
- Taroom
- Theodore

Existing trunk infrastructure
- Pump station
- Reservior
- Water treatment plant
- Bore
- Water main
- Callide Dam

Future trunk infrastructure
- Future water supply project
- Future water supply project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road
- Railway line

DRAFT MAP - INTERNAL USE ONLY

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Gazettal date: day month year

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Scale: 1:950,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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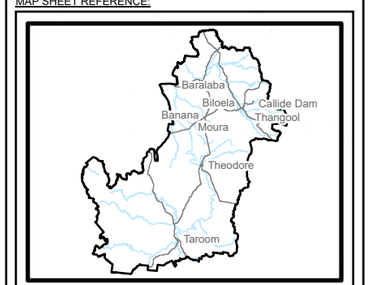

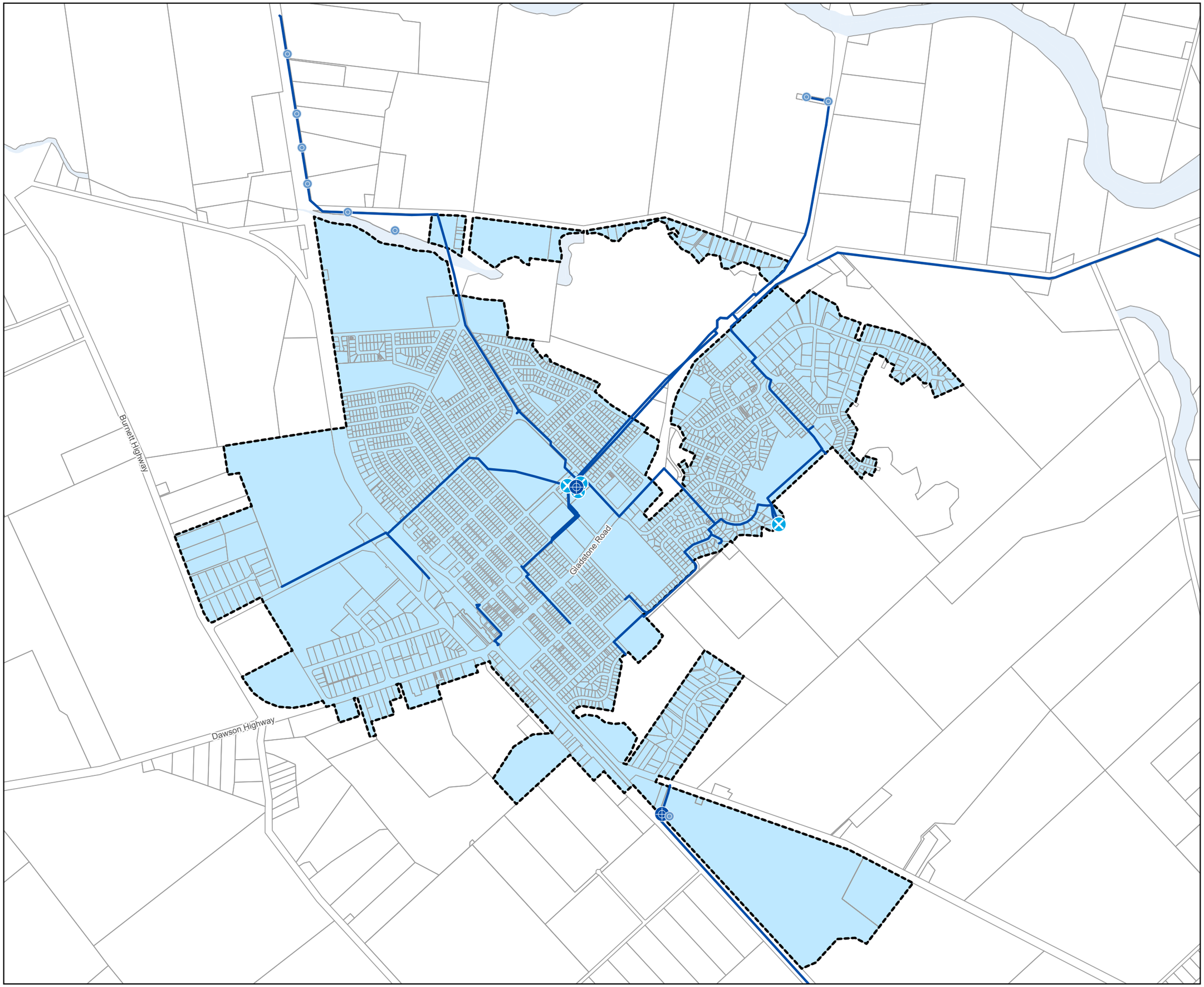

Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Biloela

LEGEND

Service catchment
- Service catchment boundary
- Biloela (including Callide Dam and Thangool)

Existing trunk infrastructure
- Pump station
- Reservior
- Bore
- Water main

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

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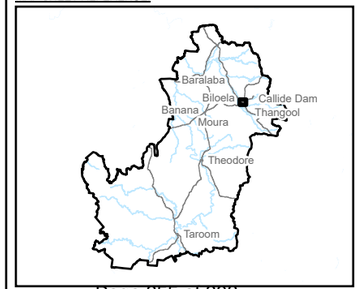
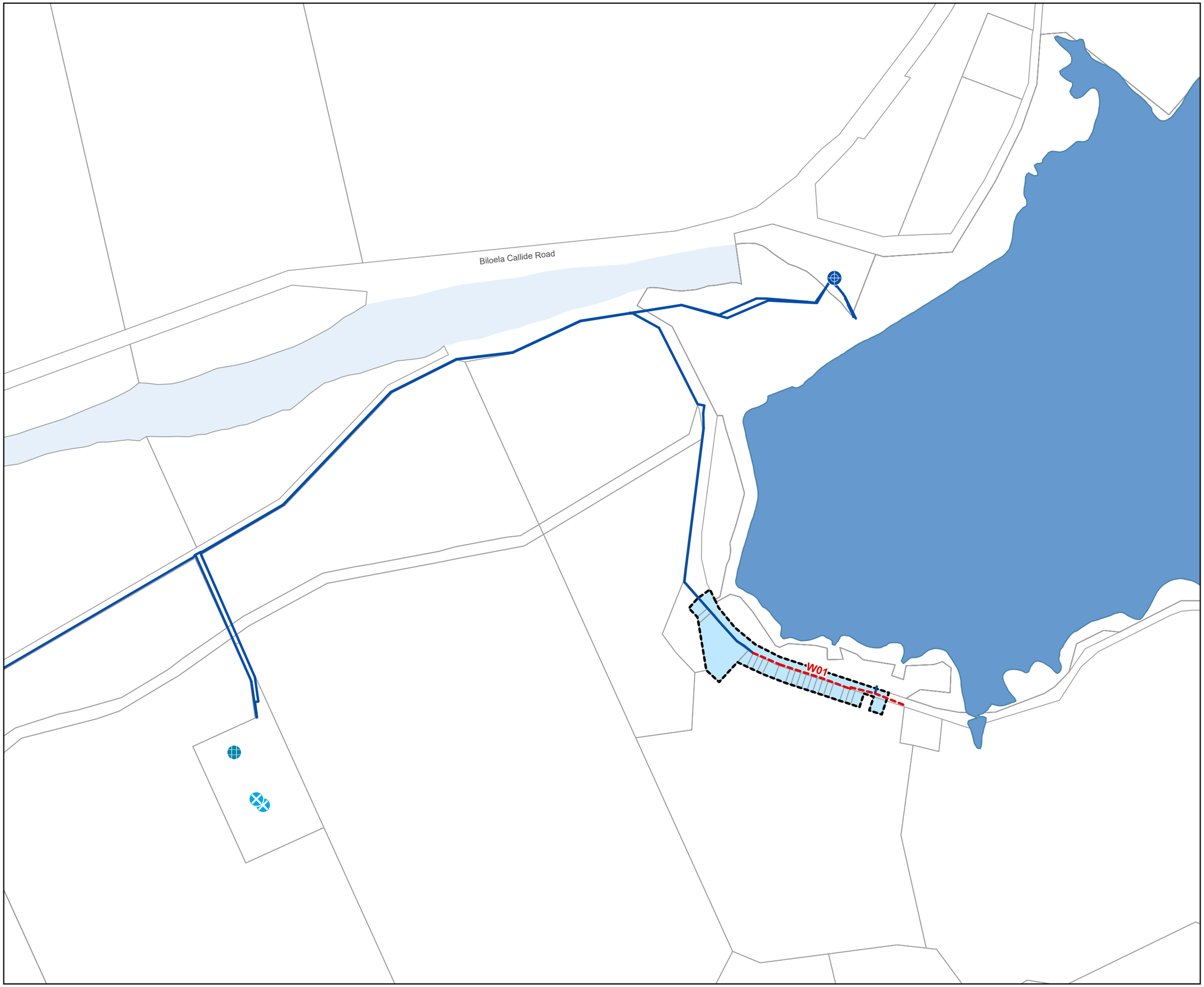
Scale: 1:20,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Plans for Trunk Infrastructure
Water Supply Map - 4.1



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Callide Dam

LEGEND

Service catchment

- Service catchment boundary
- Biloela (including Callide Dam and Thangool)

Existing trunk infrastructure

- Pump station
- Reservior
- Water treatment plant
- Water main
- Callide Dam
- Future water supply project

Other map layers

- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

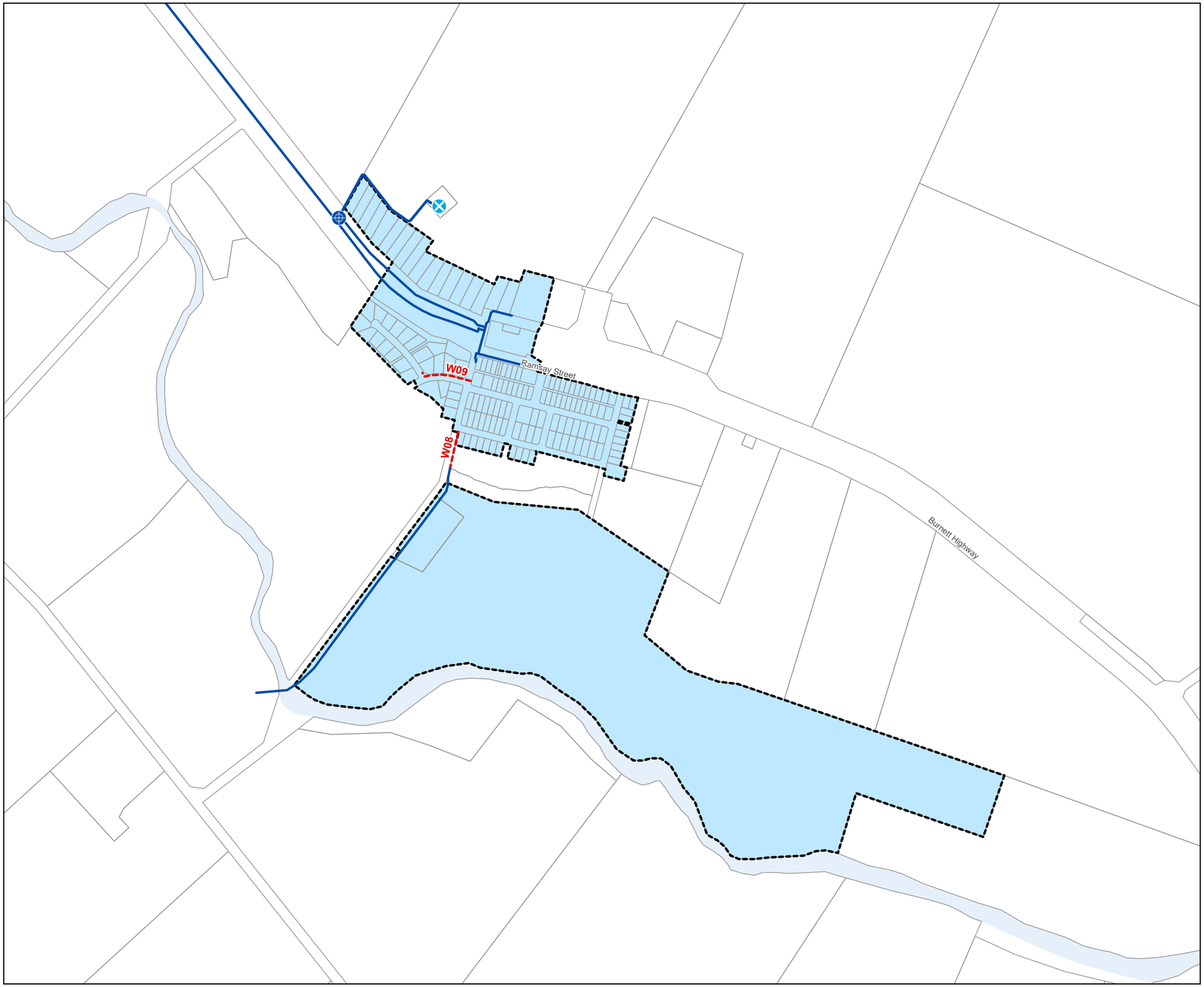
0 0.1 0.2 0.4 Km

Scale: 1:12,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Plans for Trunk Infrastructure
Water Supply Map - 4.2



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Thangool

LEGEND

Service catchment
- Service catchment boundary
- Biloela (including Callide Dam and Thangool)

Existing trunk infrastructure
- Pump station
- Reservior
- Water main
- Future water supply project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

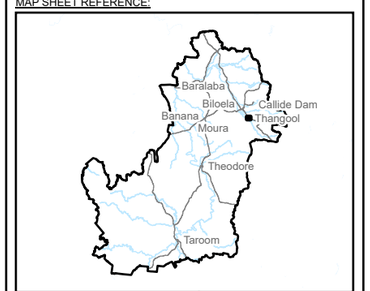
Gazettal date: day month year

0 0.07 0.15 0.3 Km

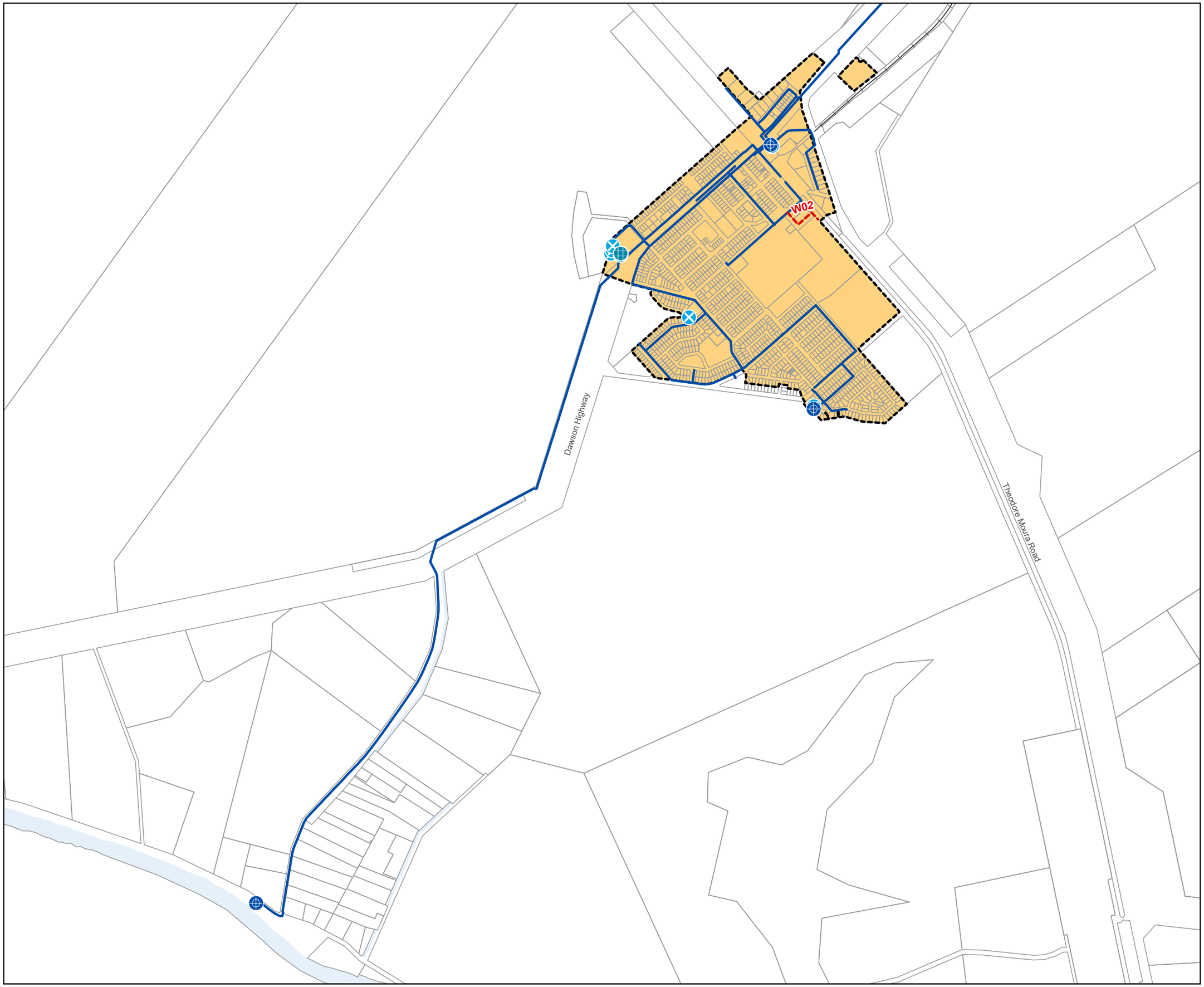
Scale: 1:10,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Plans for Trunk Infrastructure
Water Supply Map - 4.3



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Moura

LEGEND

Service catchment
- Service catchment boundary
- Moura (including Banana)

Existing trunk infrastructure
- Pump station
- Reservior
- Water treatment plant
- Water main
- Future water supply project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- Railway line

DRAFT MAP - INTERNAL USE ONLY

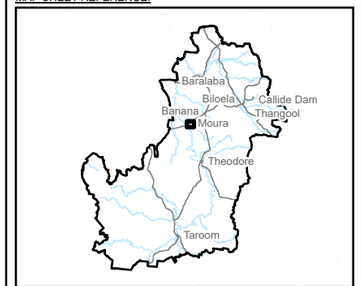
Gazettal date: day month year

0 0.17 0.35 0.7 Km

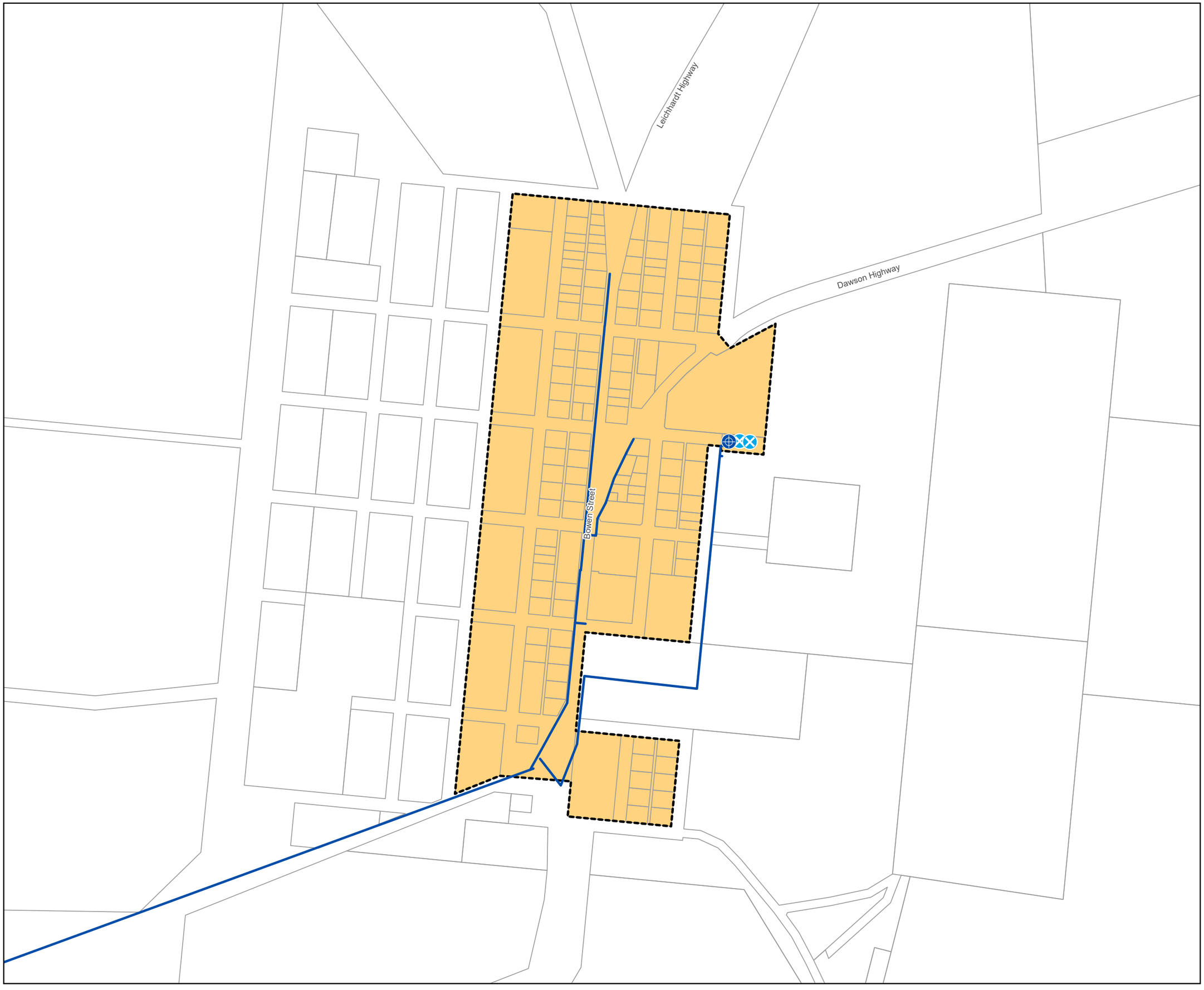
Scale: 1:22,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Planning Trunk Infrastructure
Water Supply Map - 4.4



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Banana

LEGEND

Service catchment
- Service catchment boundary
- Moura (including Banana)

Existing trunk infrastructure
- Pump station
- Reservior
- Water main

Other map layers
- Cadastre boundary
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.05 0.1 0.2 Km

Scale: 1:8,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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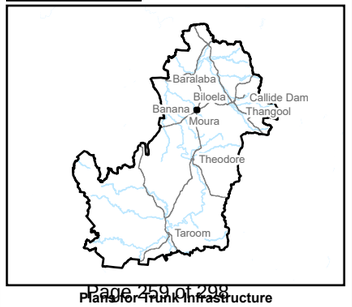
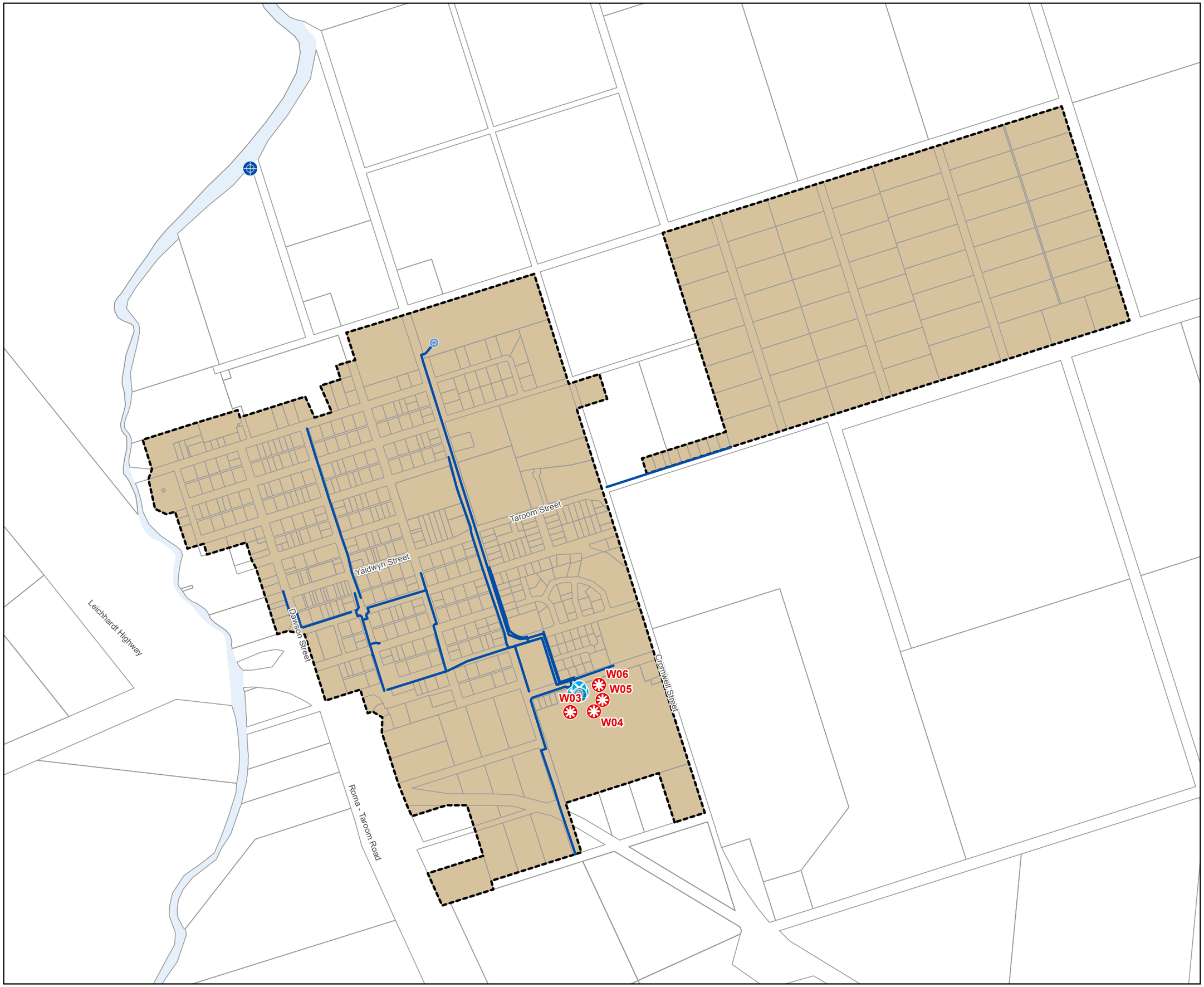


Plans for Trunk Infrastructure
Water Supply Map - 4.5



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Taroom

LEGEND

Service catchment
- Service catchment boundary
- Taroom

Existing trunk infrastructure
- Pump station
- Reservior
- Water treatment plant
- Bore
- Water main

Future trunk infrastructure
- Future water supply project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

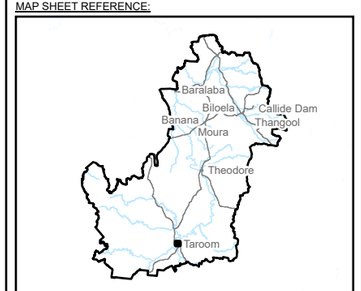
Gazettal date: day month year

0 0.1 0.2 0.4 Km

Scale: 1:12,000 @ A3

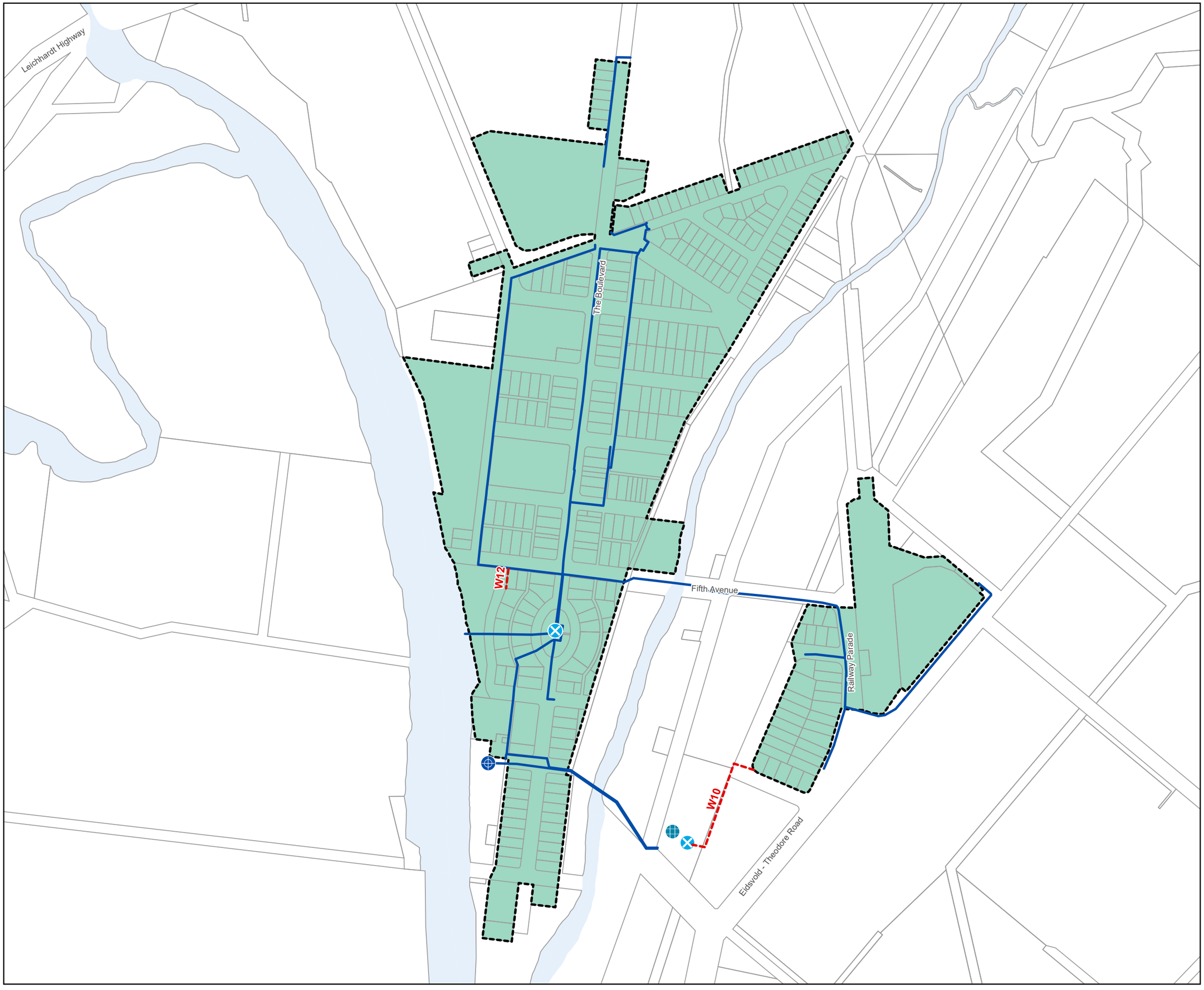
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Plans for Trunk Infrastructure
Water Supply Map - 4.6

Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Theodore



LEGEND

Service catchment

- Service catchment boundary
- Theodore

Existing trunk infrastructure

- Pump station
- Reservior
- Water treatment plant
- Water main
- Future water supply project

Other map layers

- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.05 0.1 0.2 Km

Scale: 1:7,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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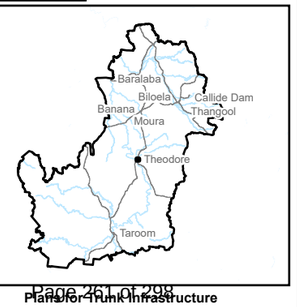
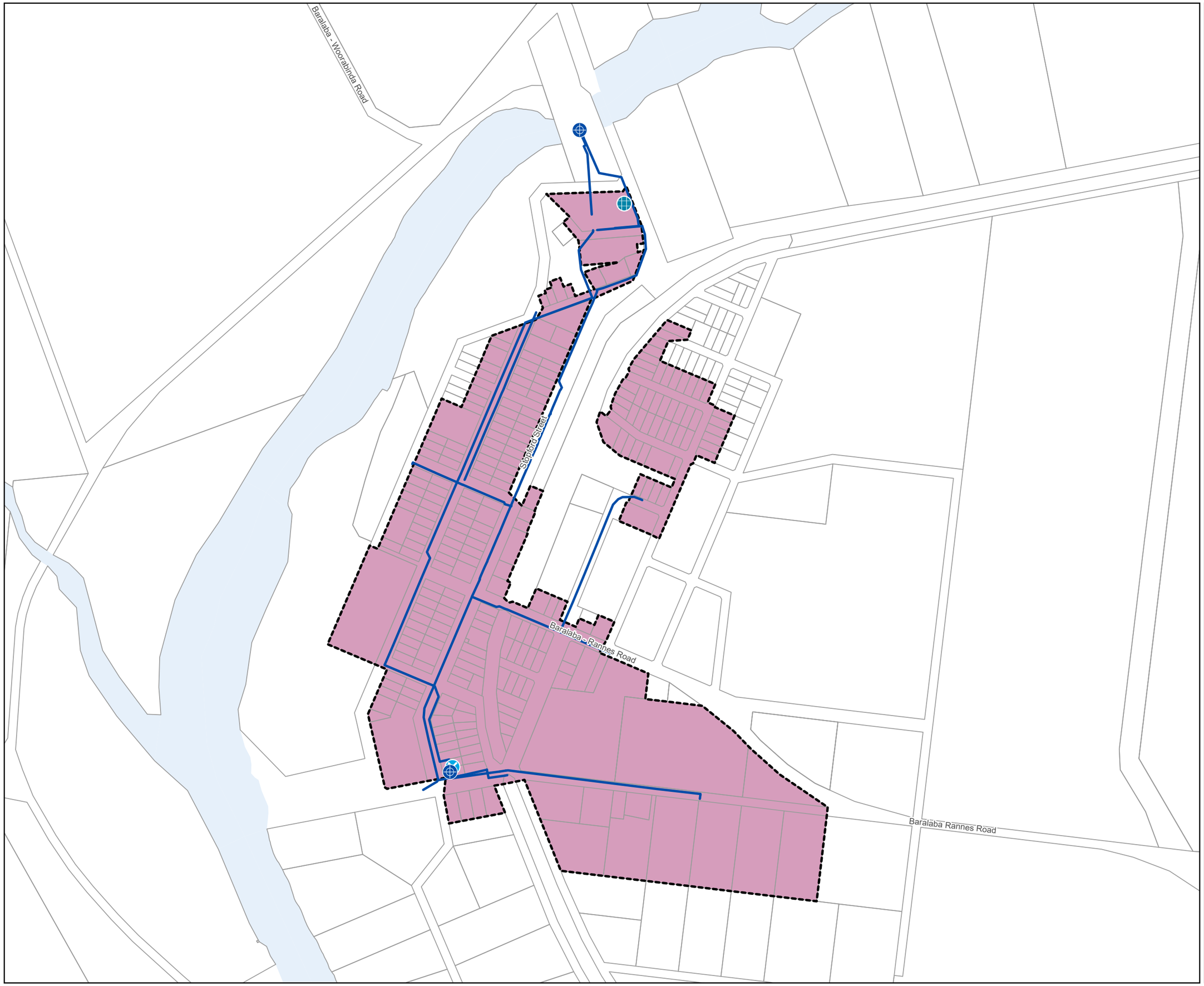


Plans for Trunk Infrastructure
Water Supply Map - 4.7



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Baralaba

LEGEND

Service catchment
- Service catchment boundary
- Baralaba

Existing trunk infrastructure
- Pump station
- Reservior
- Water treatment plant
- Water main

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

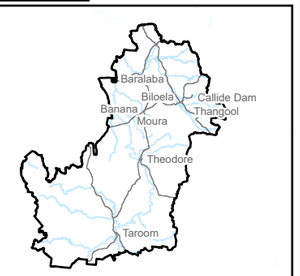
Gazettal date: day month year

0 0.05 0.1 0.2
Km

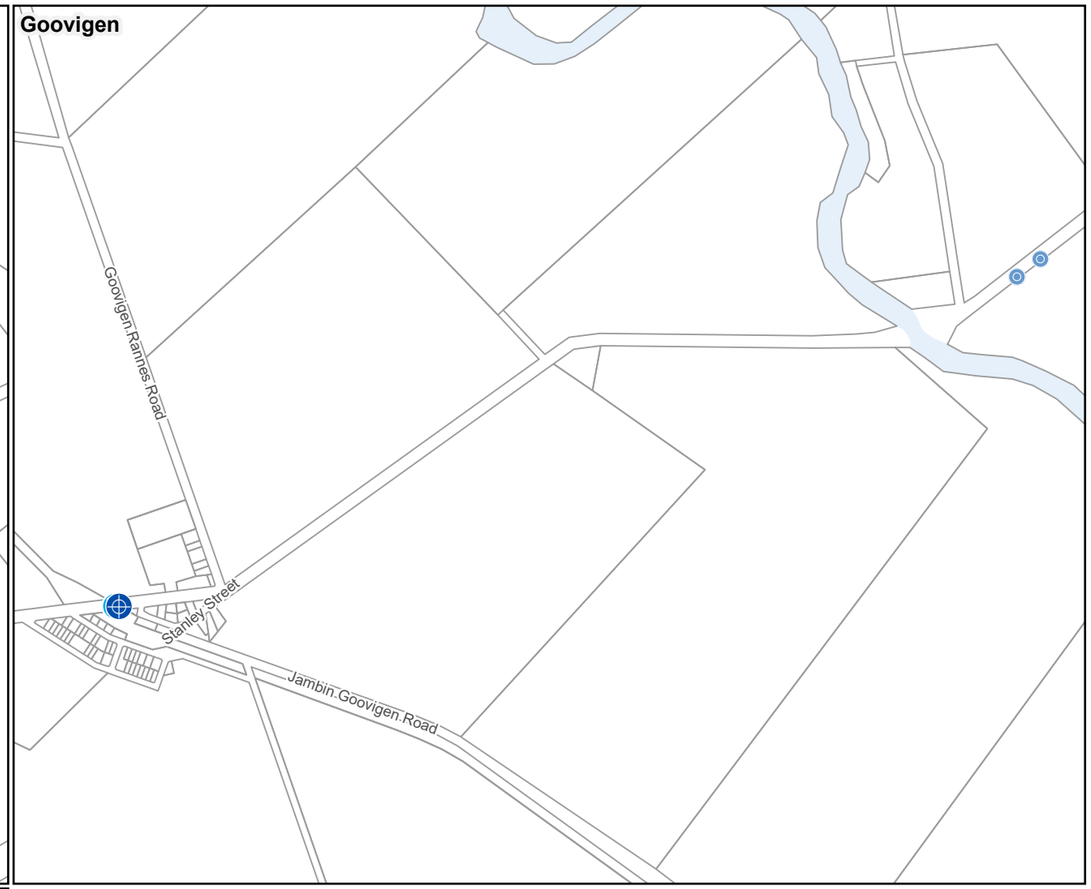
Scale: 1:8,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Planning Trunk Infrastructure
Water Supply Map - 4.8



Banana Local Government Infrastructure Plan 2025 Plans for Trunk Infrastructure Cracow, Goovigen and Wowan

LEGEND

Existing trunk infrastructure

- Pump station
- Reservior
- Bore

Other map layers

- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

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Gazettal date: day month year

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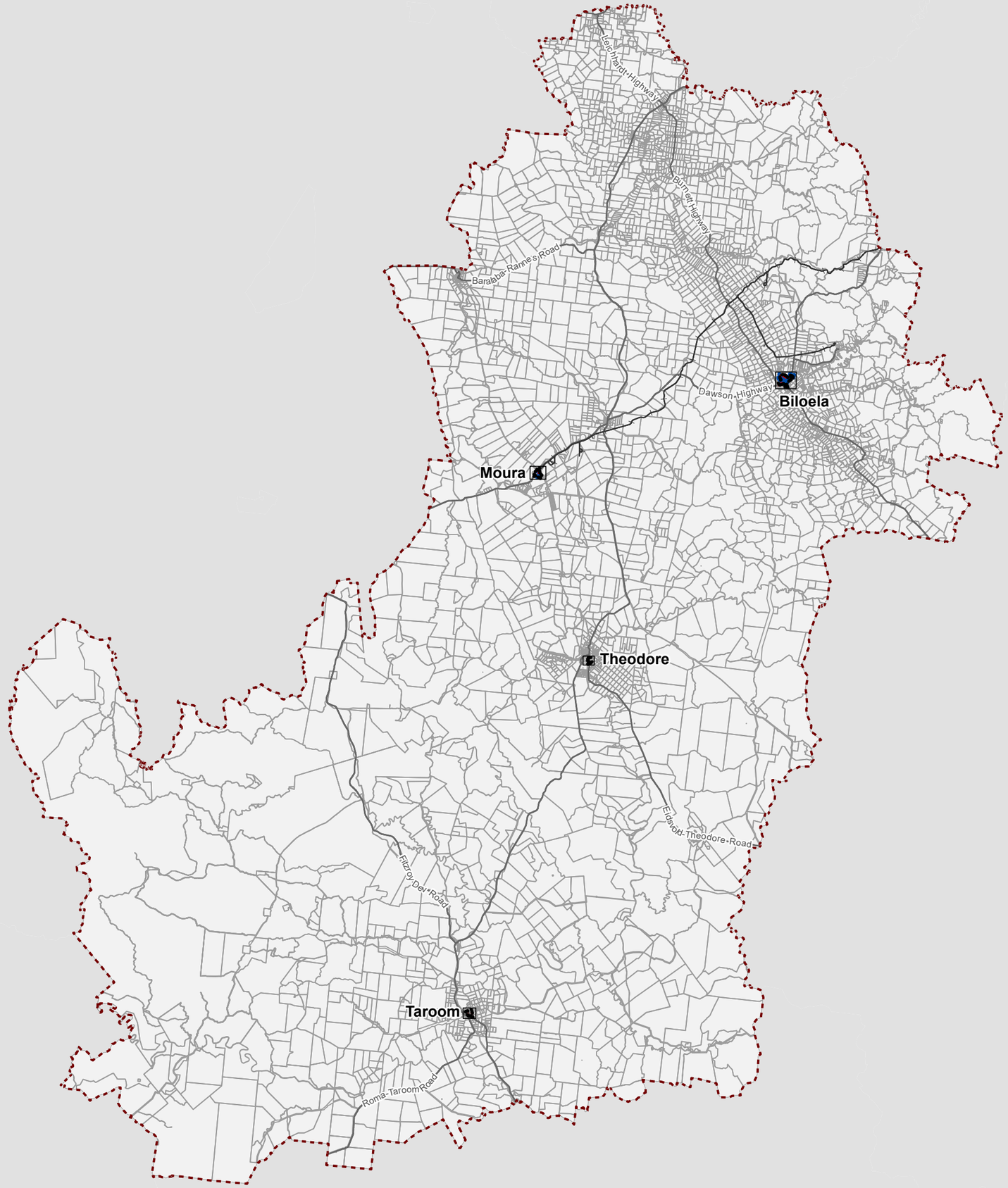
Scale: 1:20,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Plans for Trunk Infrastructure
Water Supply Map - 4.9



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Banana Shire

LEGEND

Service catchment
- Service catchment boundary
- Biloela
- Moura
- Taroom
- Theodore
- Rural

Existing trunk infrastructure
- Stormwater pipe

Future trunk infrastructure
- Future stormwater project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road
- Railway line

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 5 10 20
Km

Scale: 1:950,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
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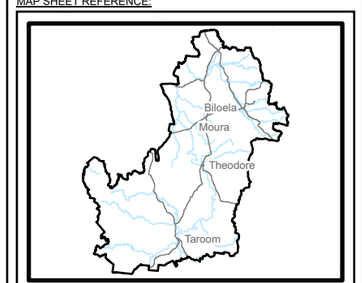

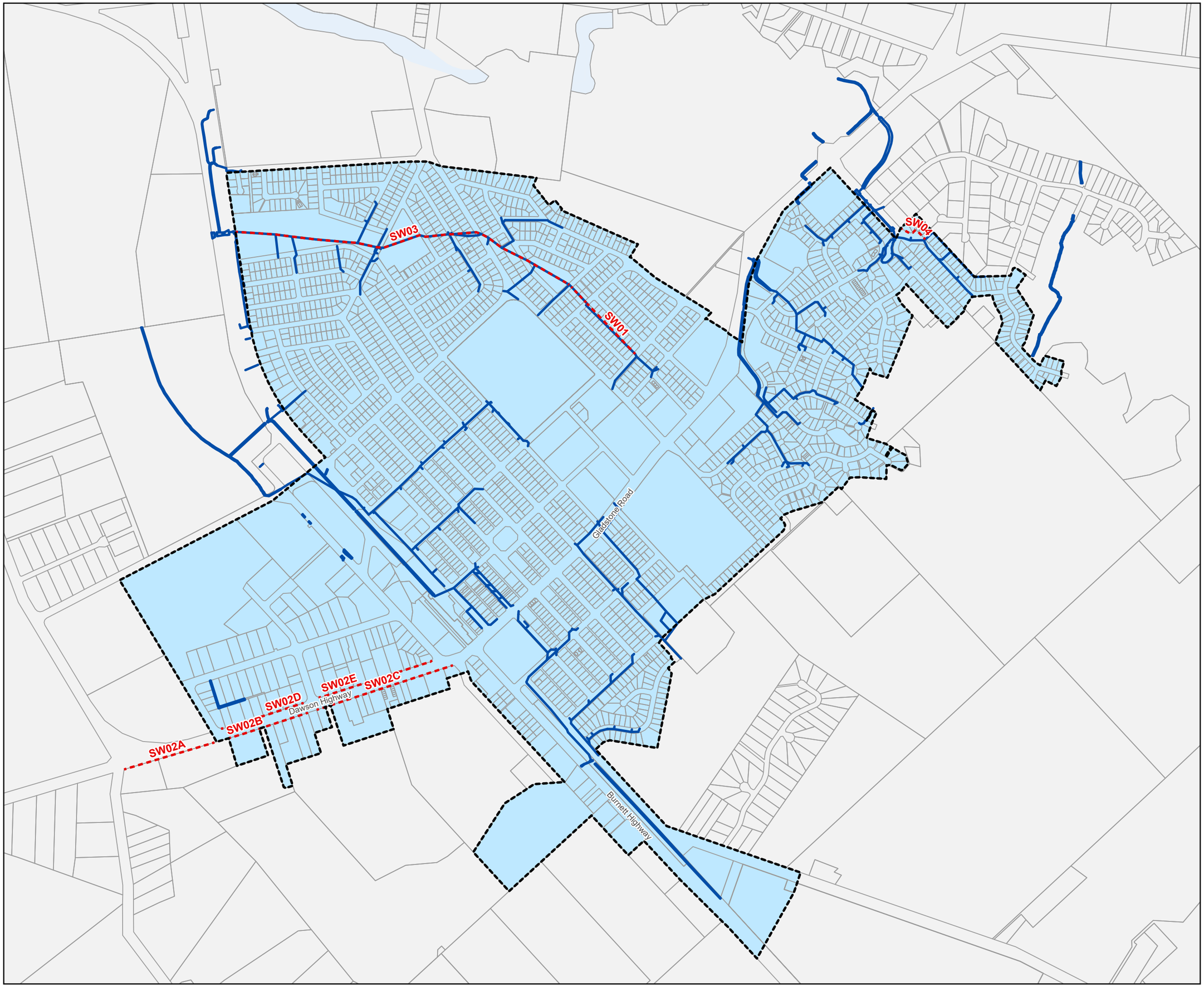

Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Biloela

LEGEND

Service catchment
- Service catchment boundary
- Biloela
- Rural

Existing trunk infrastructure
- Stormwater pipe

Future trunk infrastructure
- Future stormwater project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

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Gazettal date: day month year

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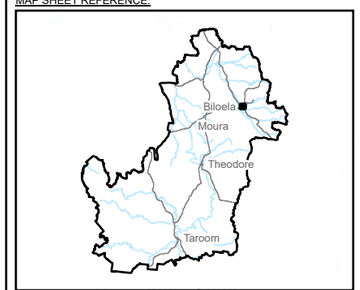
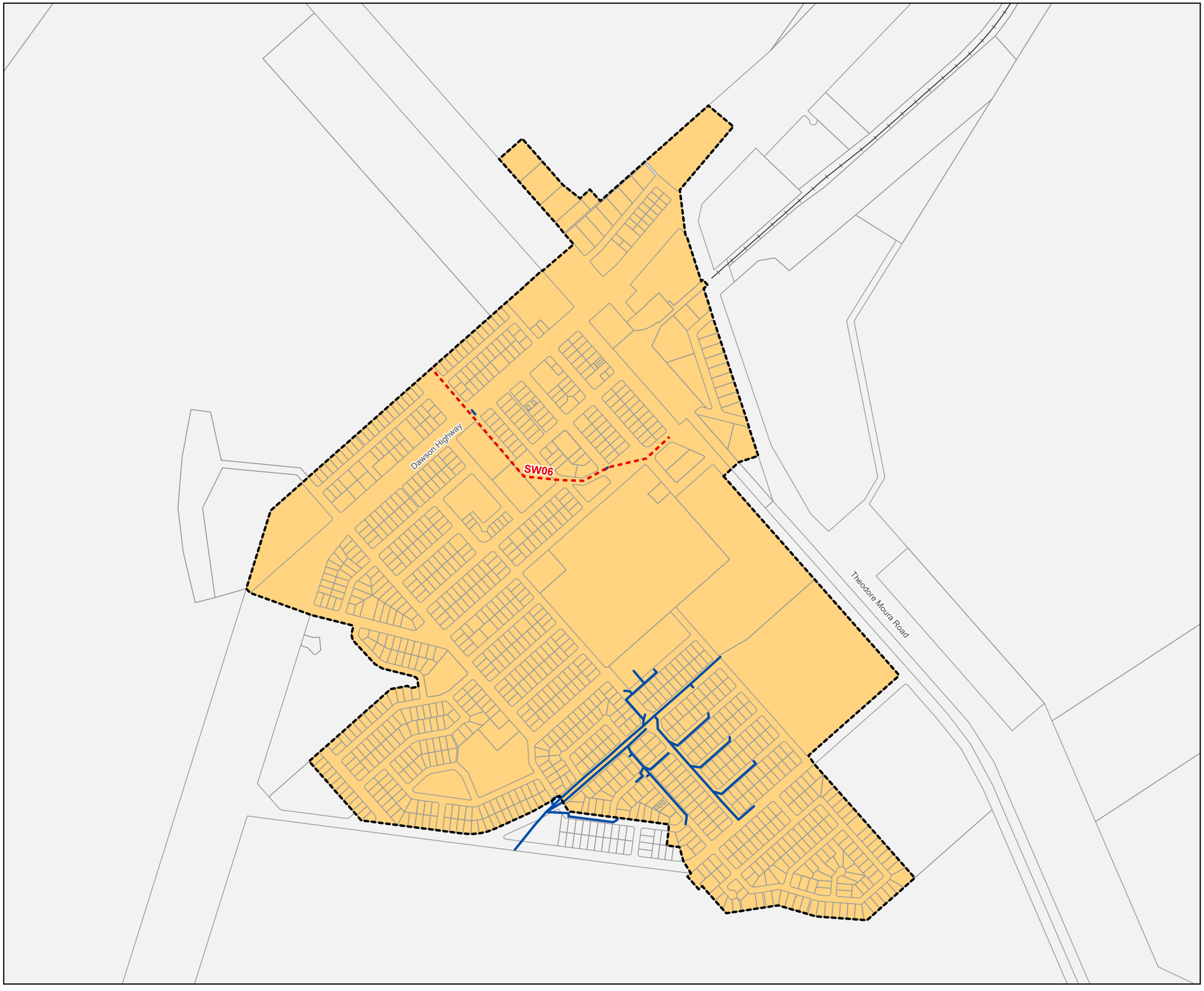


Plans for Trunk Infrastructure
Stormwater Map - 5.1



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Moura

LEGEND

Service catchment
- Service catchment boundary
- Moura
- Rural

Existing trunk infrastructure
- Stormwater pipe

Future trunk infrastructure
- Future stormwater project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- Railway line

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

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Scale: 1:10,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Plans for Trunk Infrastructure
Stormwater Map - 5.2

Leichhardt Highway

The Boulevard

Fifth Avenue

Railway Parade

Eidsvold - Theodore Road

Banana Local Government Infrastructure Plan 2025 Plans for Trunk Infrastructure Theodore

LEGEND

Service catchment

- Service catchment boundary
- Theodore
- Rural

Other map layers

- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.05 0.1 0.2 Km

Scale: 1:7,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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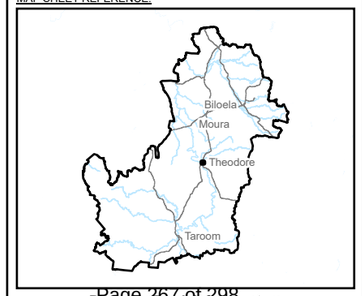

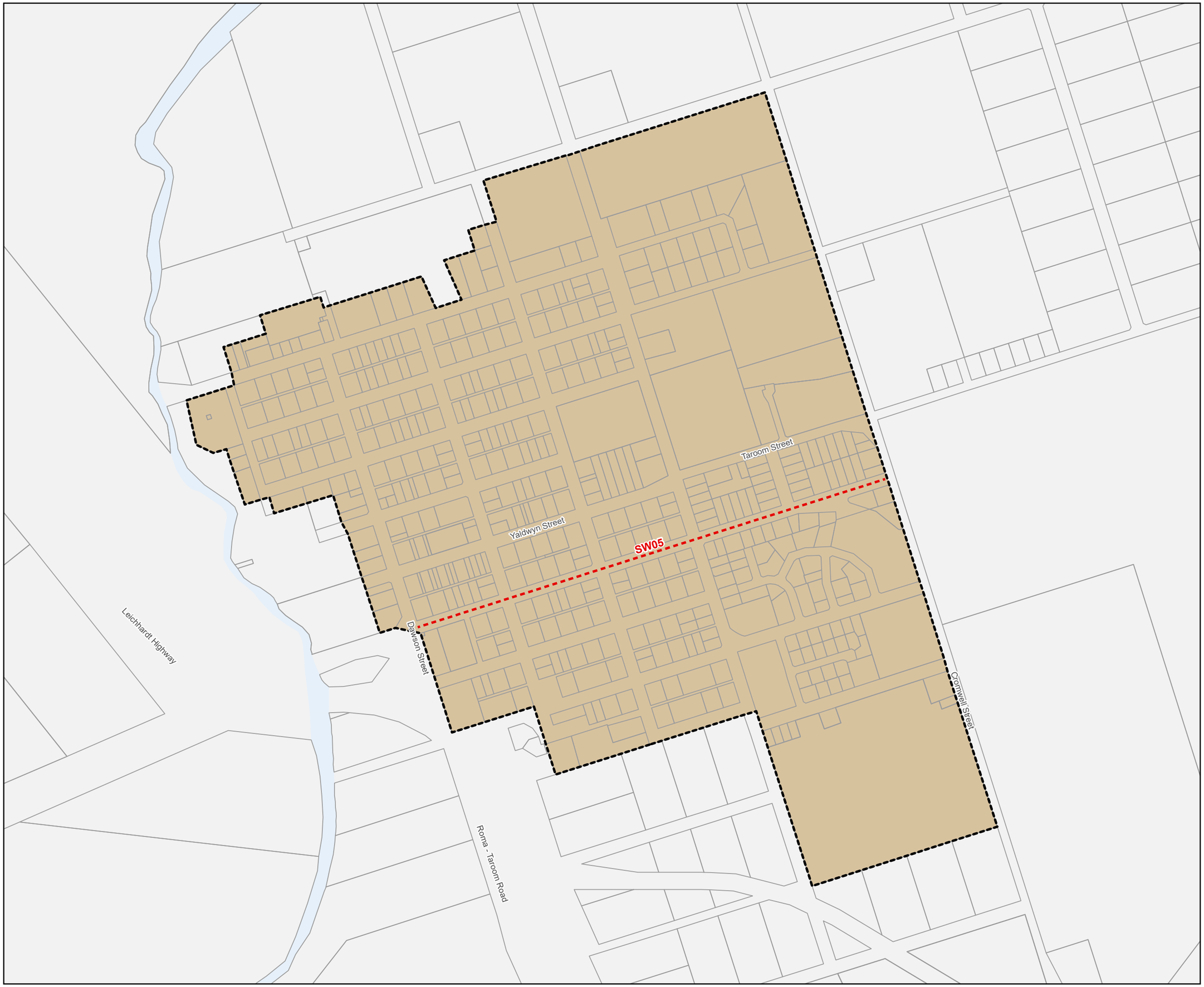

Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Taroom

LEGEND

Service catchment
- Service catchment boundary
- Taroom
- Rural

Future trunk infrastructure
- Future stormwater project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.05 0.1 0.2 Km

Scale: 1:8,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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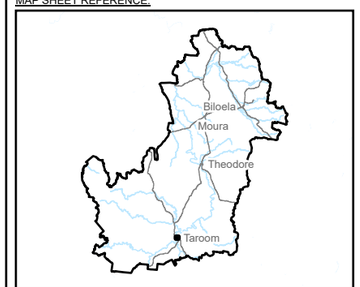
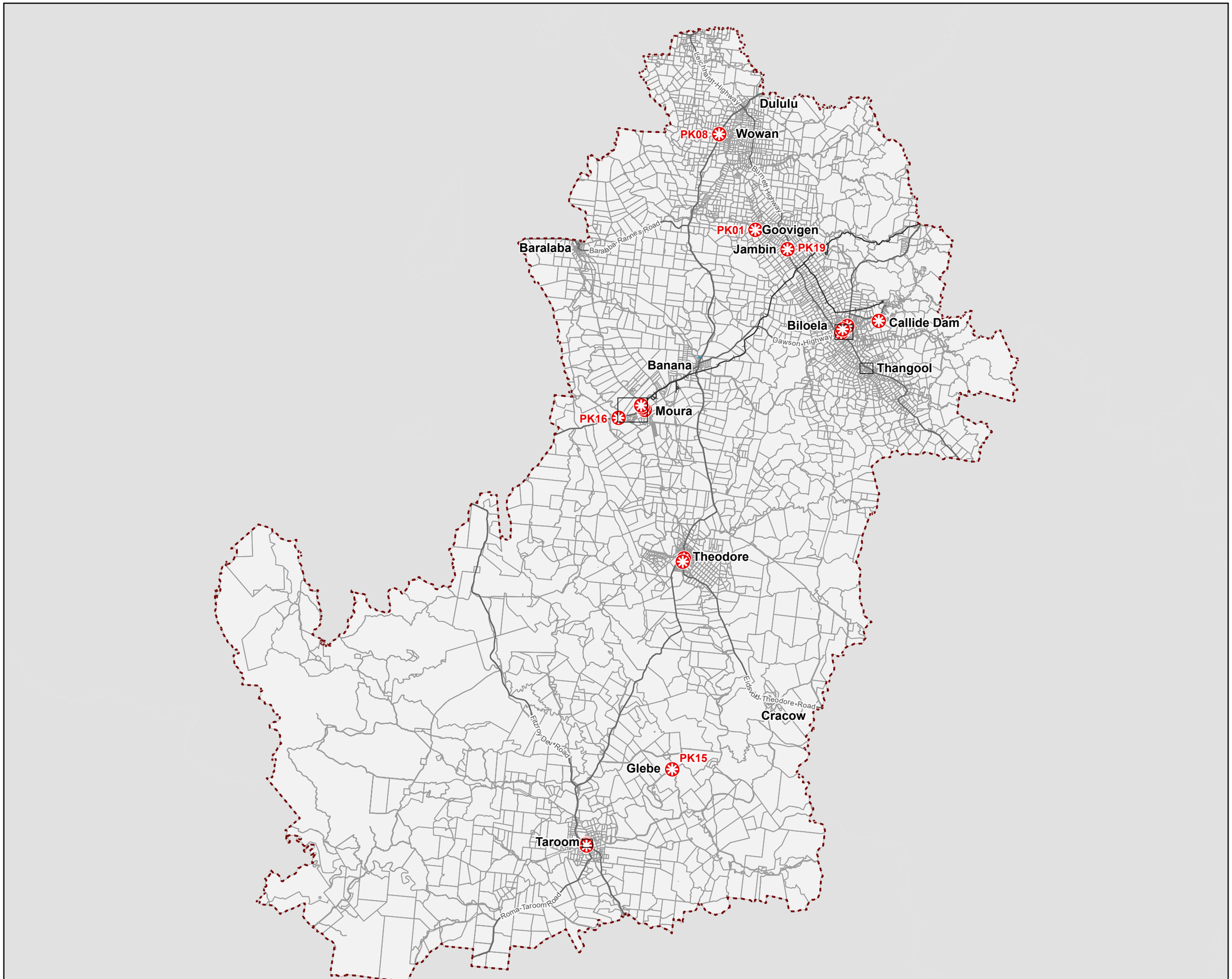


Plans for Trunk Infrastructure
Stormwater Map - 5.4



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Banana Shire

LEGEND

Service catchment
- Service catchment boundary
- Biloela
- Moura
- Taroom
- Theodore
- Rural

Existing trunk infrastructure
- LGA wide recreation park
- District recreation park
- Local recreation park
- LGA wide sporting park
- District sporting park
- Land for community facilities

Future trunk infrastructure
- Future park project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- State controlled road
- Railway line

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 5 10 20 Km

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Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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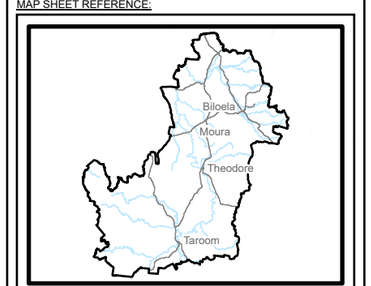
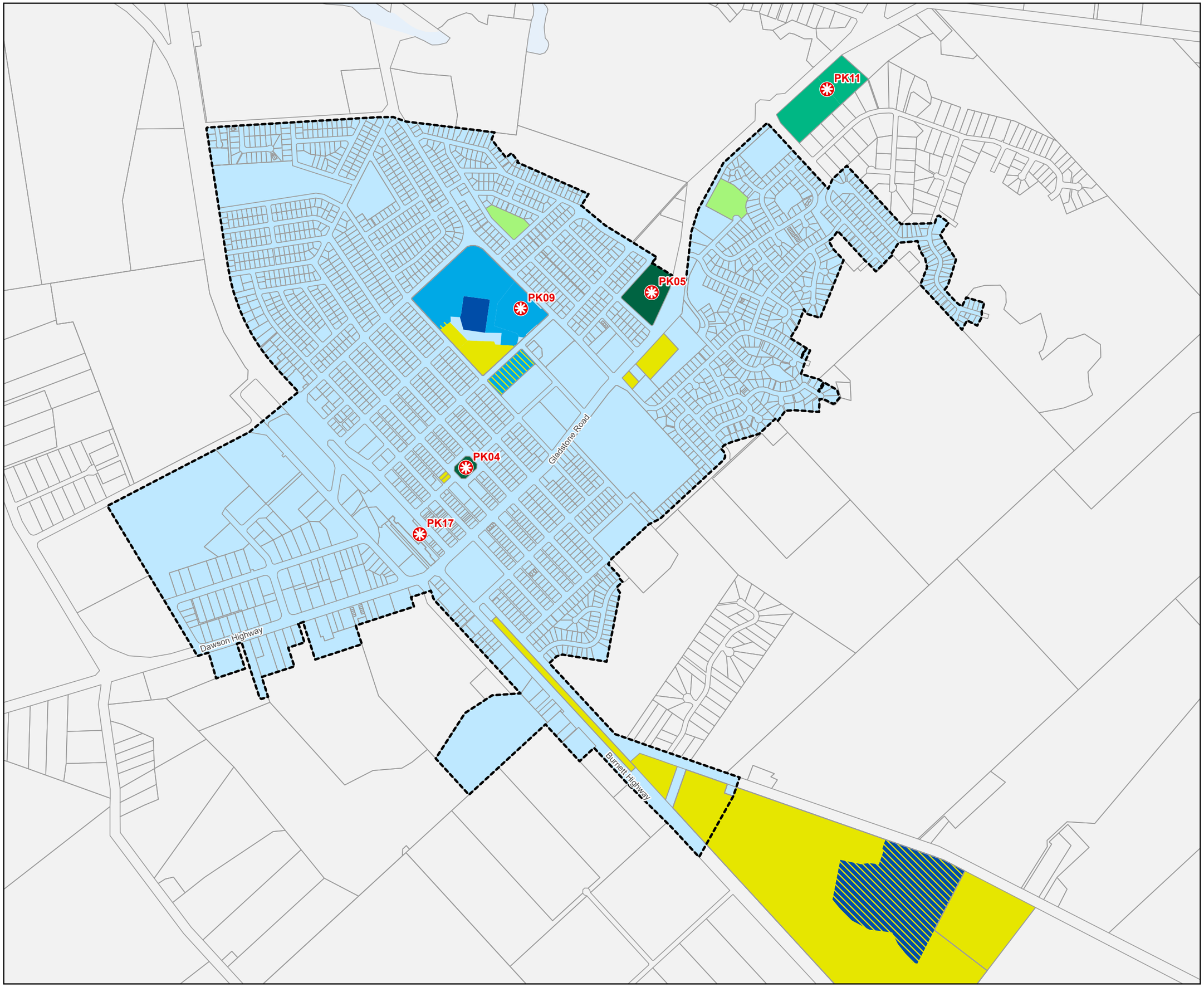


Plans for Trunk Infrastructure
Parks and Land for Community Facilities Map - 6.0



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Biloela

LEGEND

Service catchment
- Service catchment boundary
- Biloela
- Rural

Existing trunk infrastructure
- LGA wide recreation park
- District recreation park
- Local recreation park
- LGA wide sporting park
- District sporting park
- Land for community facilities

Future trunk infrastructure
- Future park project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

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Gazettal date: day month year

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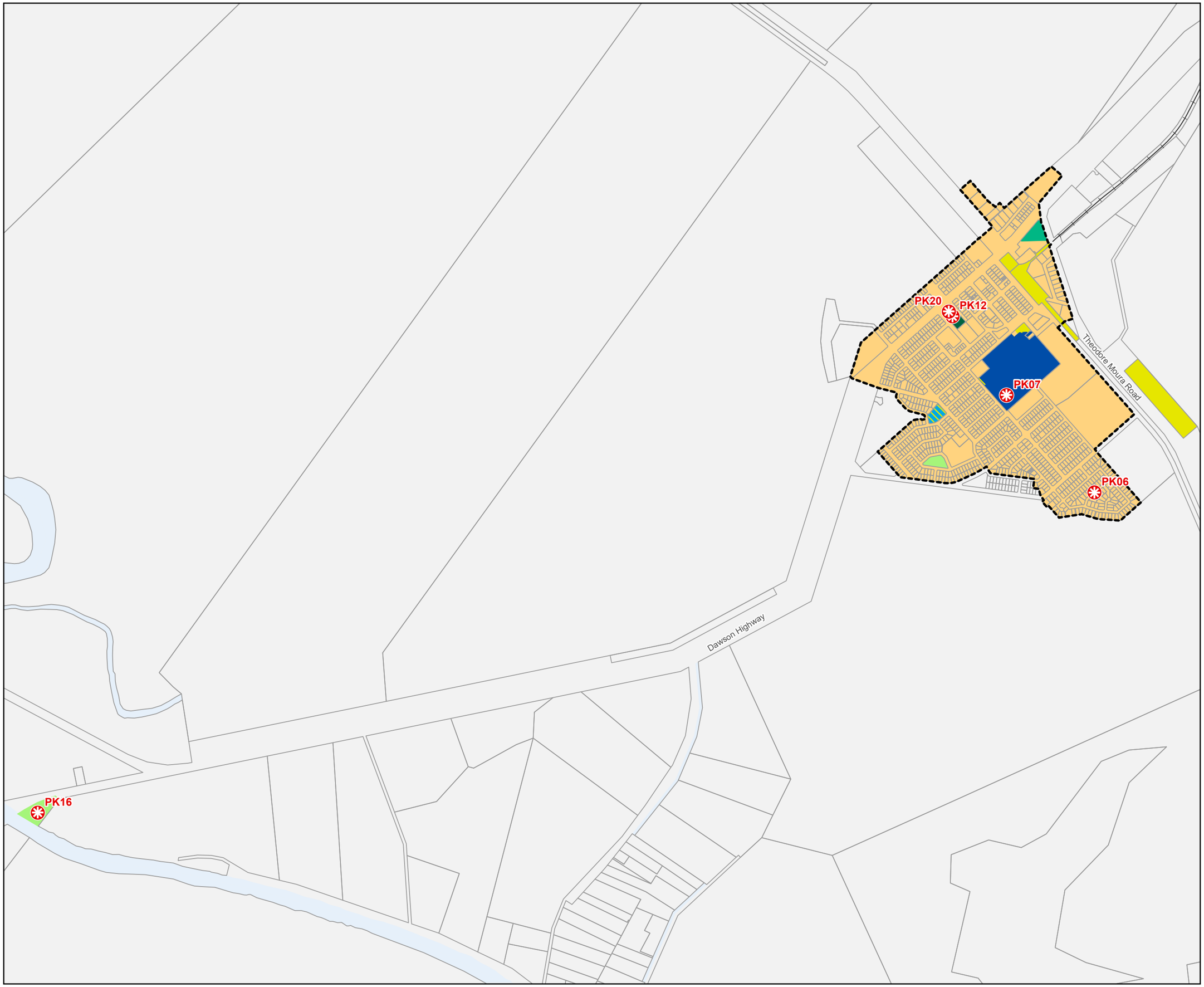
Scale: 1:14,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Plans for Trunk Infrastructure
Parks and Land for Community Facilities Map - 6.1



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Moura

LEGEND

Service catchment
- Service catchment boundary
- Moura
- Rural

Existing trunk infrastructure
- LGA wide recreation park
- District recreation park
- Local recreation park
- LGA wide sporting park
- District sporting park
- Land for community facilities

Future trunk infrastructure
- Future park project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary
- Railway line

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.2 0.4 0.8 Km

Scale: 1:23,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:

Plans for Trunk Infrastructure
Parks and Land for Community Facilities Map - 6.2

Leichhardt Highway

The Boulevard

Fifth Avenue

Railway Parade

Eidsvold - Theodore Road

Eidsvold Theodore Road

PK10

PK03

PK21

Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Theodore

LEGEND

Service catchment
- Service catchment boundary
- Theodore
- Rural

Existing trunk infrastructure
- District recreation park
- Local recreation park
- District sporting park
- Land for community facilities

Future trunk infrastructure
- Future park project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.05 0.1 0.2 Km

Scale: 1:8,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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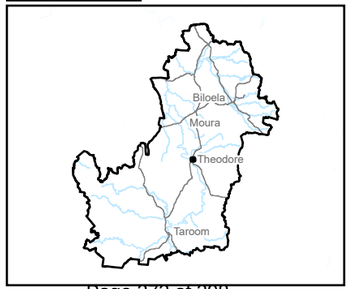
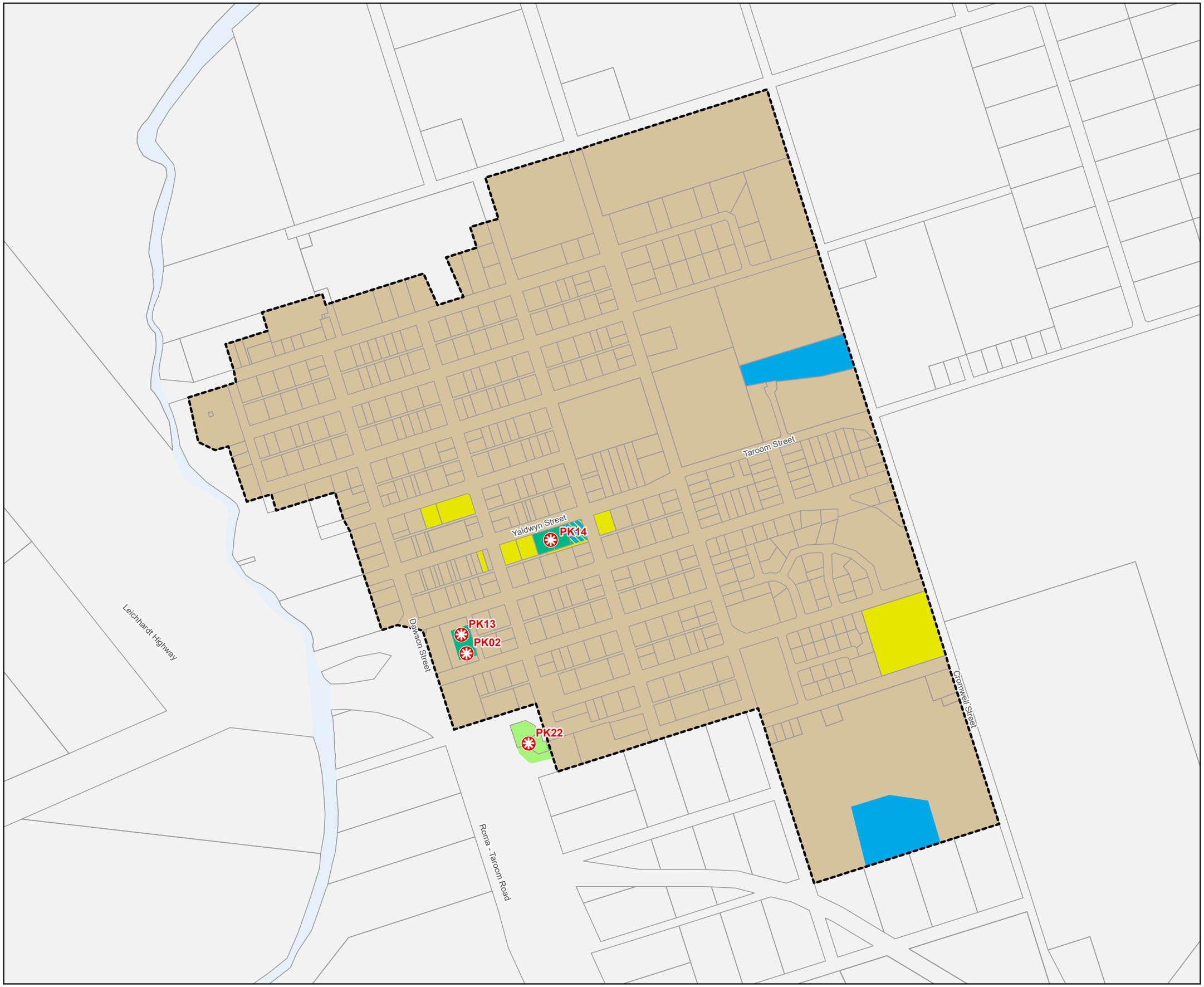


Plans for Trunk Infrastructure
Parks and Land for Community Facilities Map - 6.3



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Taroom

LEGEND

Service catchment
- Service catchment boundary
- Taroom
- Rural

Existing trunk infrastructure
- District recreation park
- Local recreation park
- District sporting park
- Land for community facilities

Future trunk infrastructure
- Future park project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

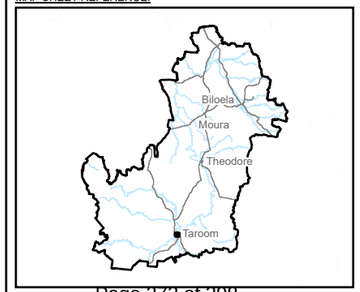
Gazettal date: day month year

0 0.05 0.1 0.2 Km

Scale: 1:8,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

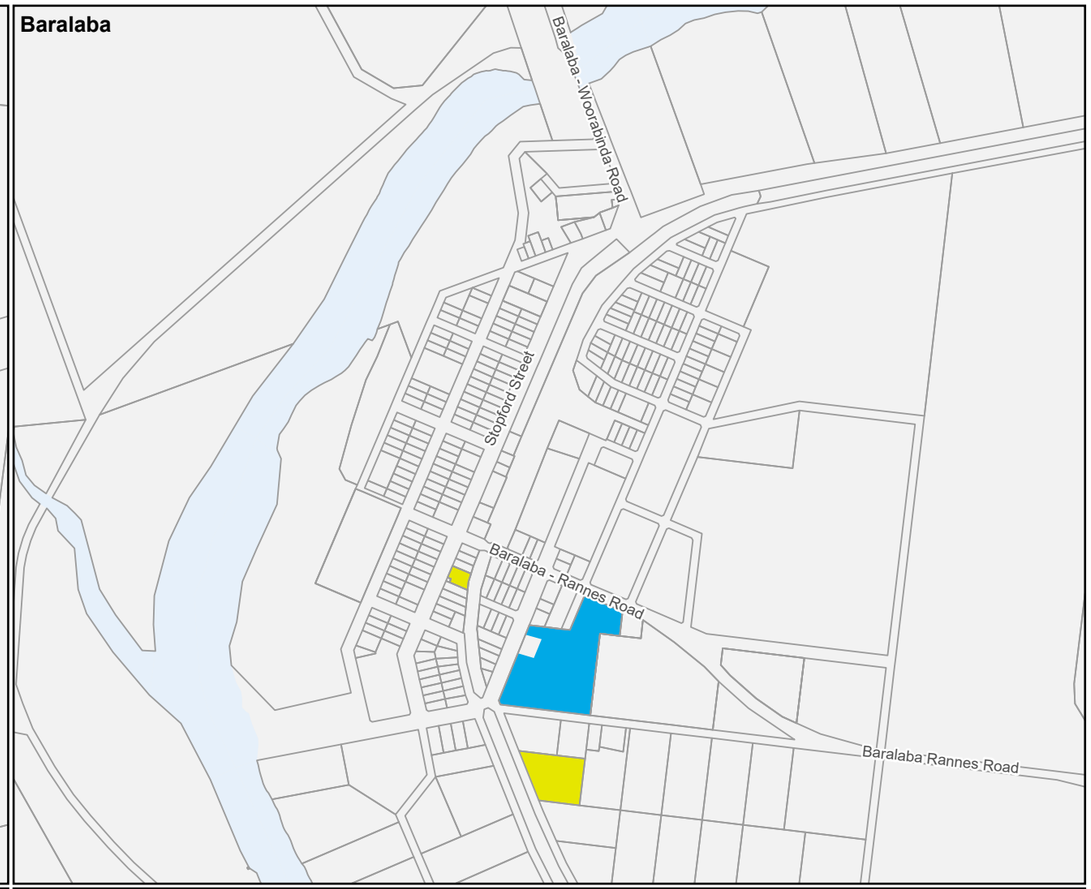
MAP SHEET REFERENCE:



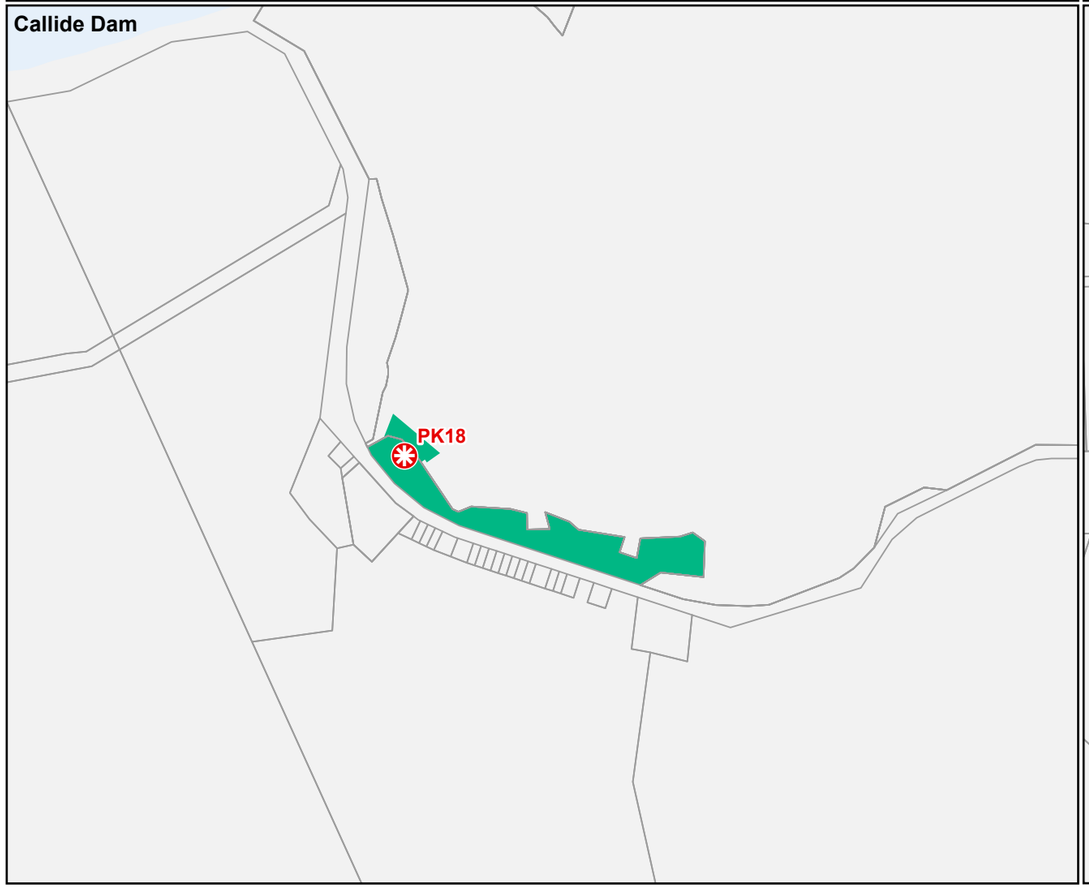
Planned Trunk Infrastructure
Parks and Land for Community Facilities Map - 6.4

Banana

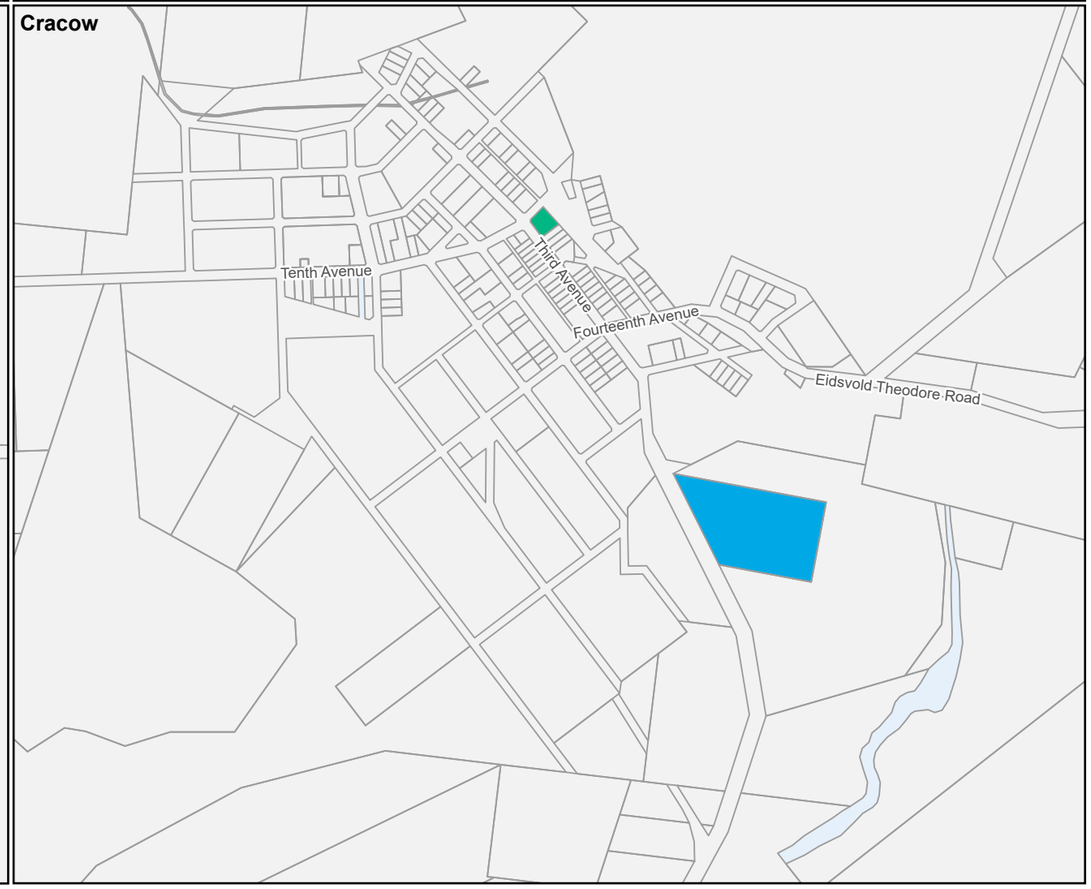
Baralaba



Callide Dam



Cracow



Banana Local Government Infrastructure Plan 2025 Plans for Trunk Infrastructure Banana, Baralaba, Callide Dam and Cracow

LEGEND

Service catchment
- Rural

Existing trunk infrastructure
- District recreation park
- District sporting park
- Land for community facilities

Future trunk infrastructure
- Future park project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Gazettal date: day month year

0 0.13 0.25 0.5
Km

Scale: 1:15,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

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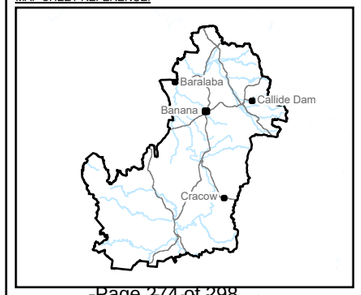
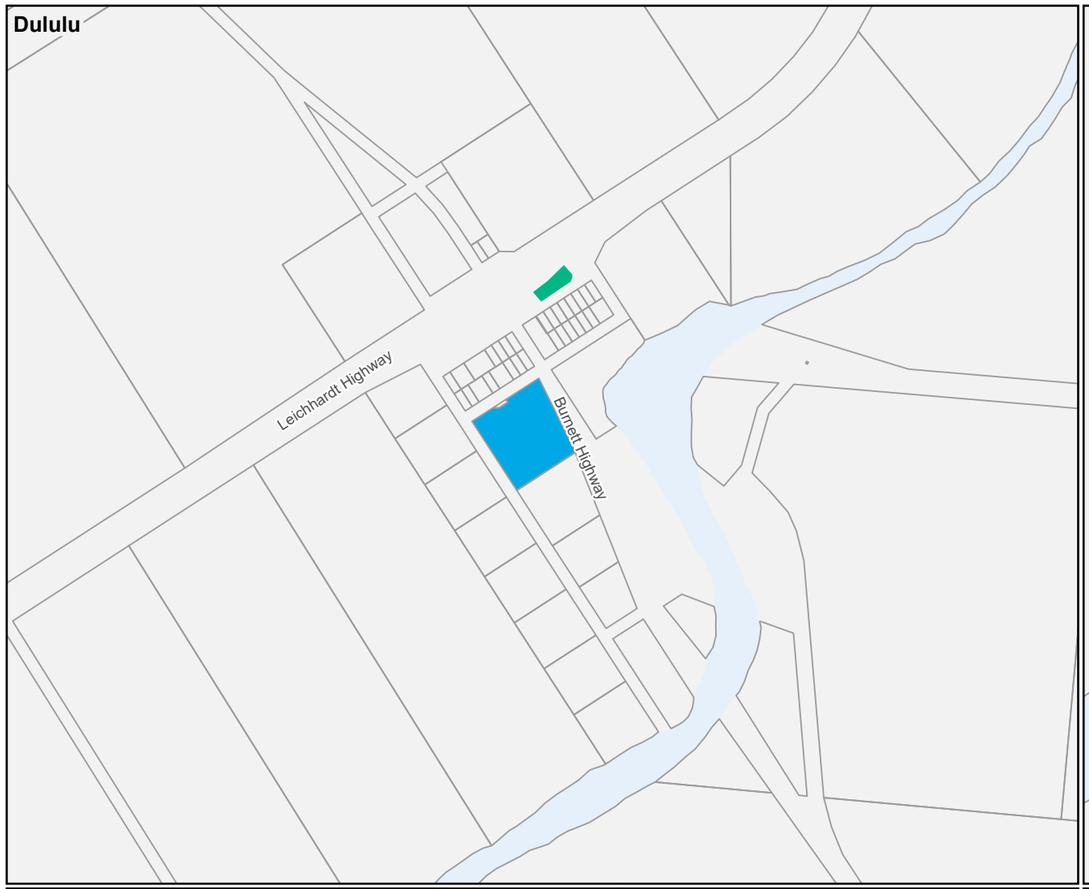


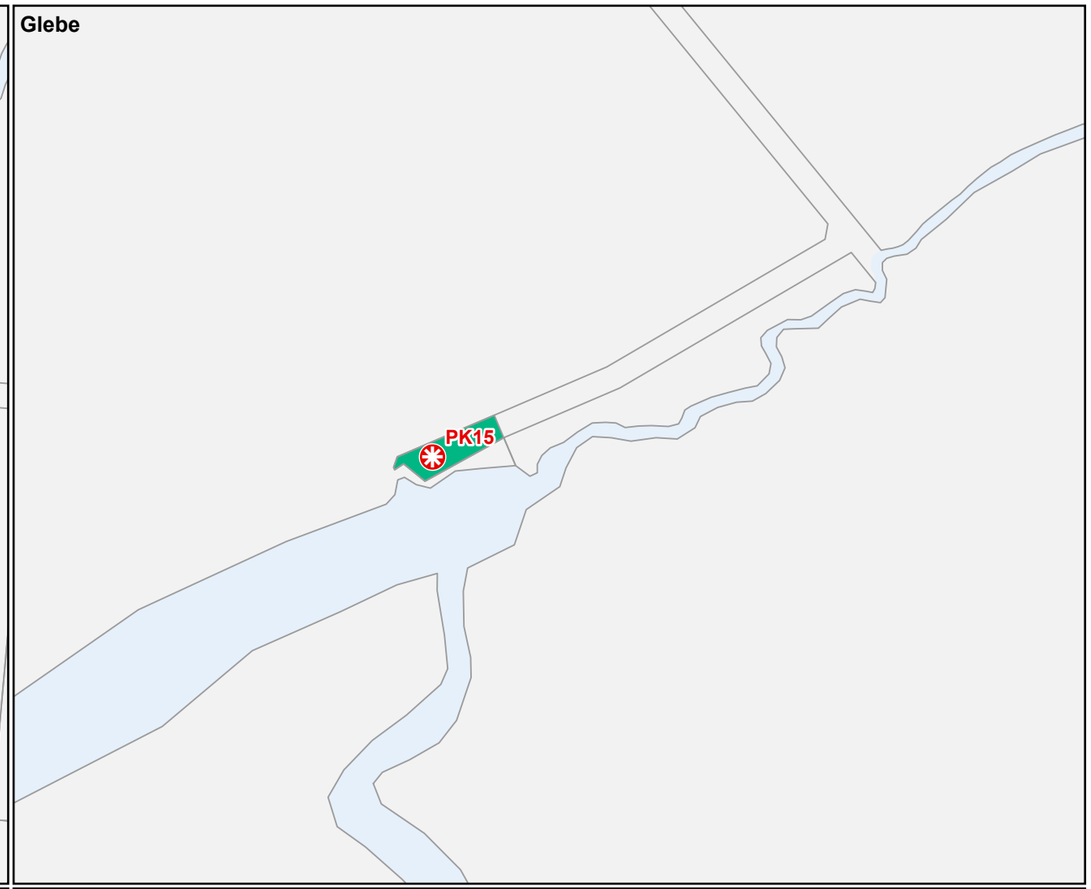
Plans for Trunk Infrastructure
Parks and Land for Community Facilities Map - 6.5

Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Dululu, Glebe, Goovigen and Jambin

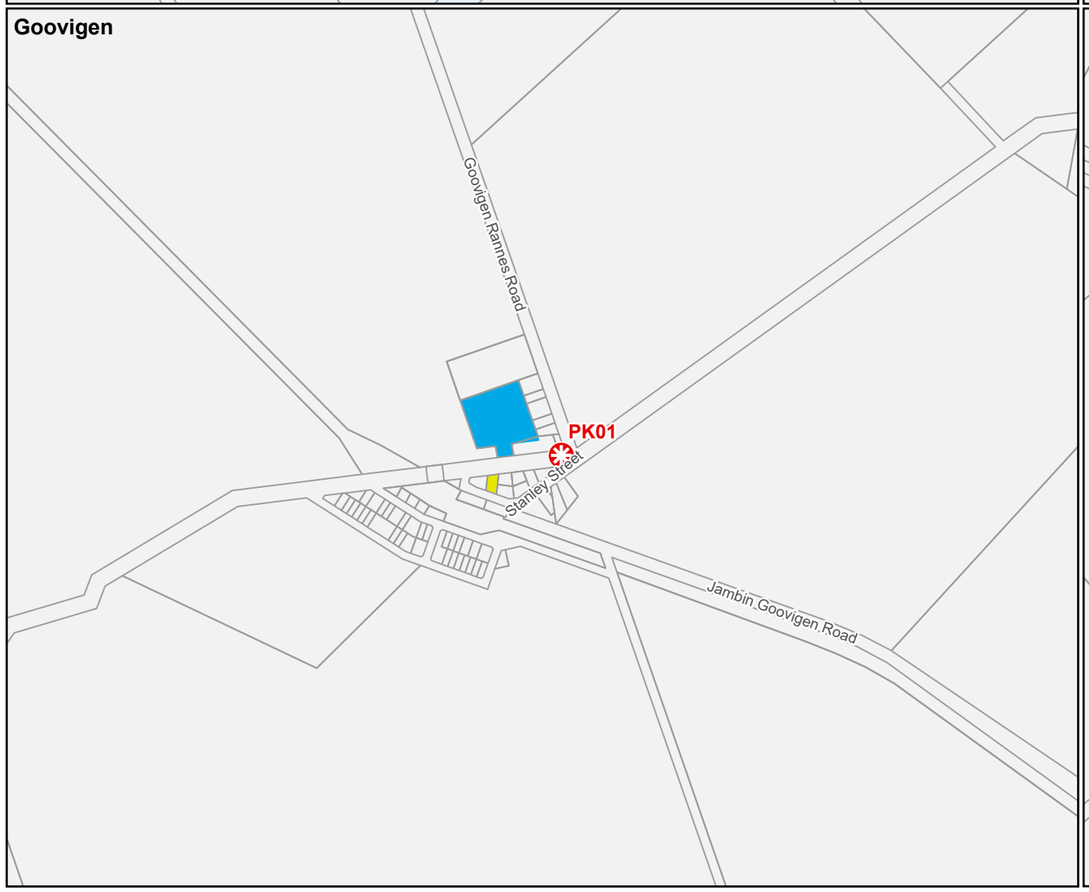
Dululu



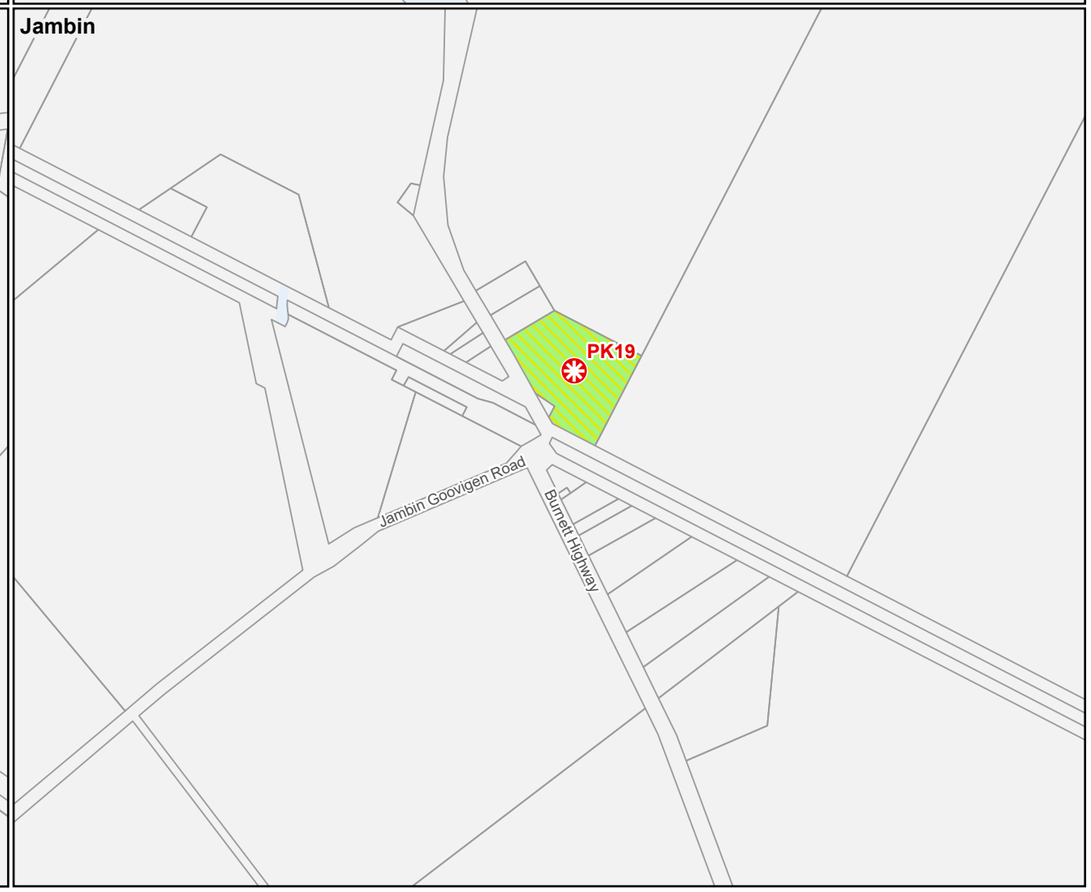
Glebe



Goovigen



Jambin



LEGEND

Service catchment
- Rural

Existing trunk infrastructure
- District recreation park
- Local recreation park
- District sporting park
- Land for community facilities

Future trunk infrastructure
- Future park project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

Disclaimer:
While every care is taken to ensure the accuracy of this product, neither the Banana Shire Council nor the State of Queensland makes any representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the product being inaccurate or incomplete in any way or for any reason.

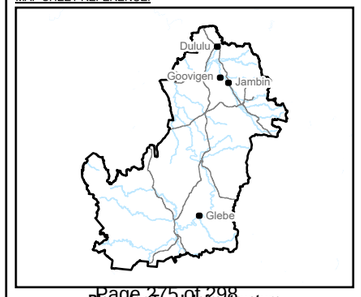
Gazettal date: day month year

0 0.13 0.25 0.5 Km

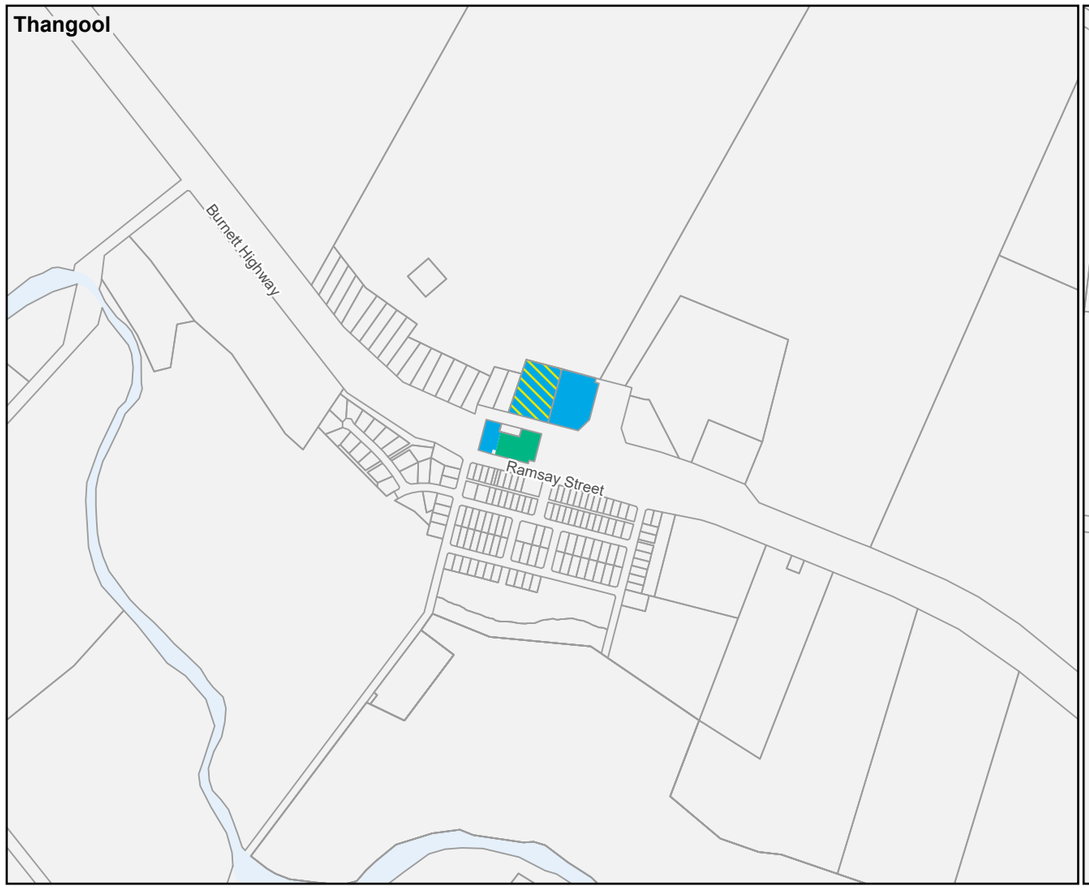
Scale: 1:15,000 @ A3

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
Grid: Map Grid of Australia, Zone 56

MAP SHEET REFERENCE:



Plans for Trunk Infrastructure
Parks and Land for Community Facilities Map - 6.6



Banana Local Government Infrastructure Plan 2025
Plans for Trunk Infrastructure
Thangool and Wowan

LEGEND

Service catchment
- Rural

Existing trunk infrastructure
- District recreation park
- District sporting park
- Land for community facilities

Future trunk infrastructure
- Future park project

Other map layers
- Cadastre boundary
- Cadastre waterway parcel
- LGA boundary

DRAFT MAP - INTERNAL USE ONLY

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Gazettal date: day month year

0 0.13 0.25 0.5 Km

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 2020
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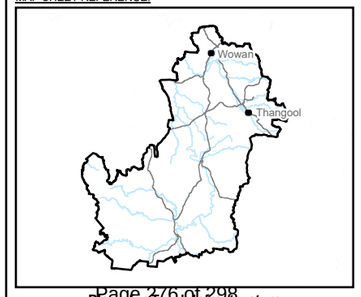

Plans for Trunk Infrastructure
Parks and Land for Community Facilities Map - 6.7

13.0 Executive Services

13.1.1 ACTION REPORT ON PREVIOUS COUNCIL RESOLUTIONS – EXECUTIVE SERVICES

Date: 18 August 2025
Author: Chief Executive Officer - Thomas Upton
File No:
Letter No:
Attachment: Resolutions Action Report
Minute No: OM006509

Director Corporate and Community Services declared a Prescribed Conflict of Interest in this agenda item as he is an Executive Committee Member of the CQShines Foundation.

Resolution:

That Council note and receive the attached Resolutions Action Report for Executive Services.

Moved: Cr Jensen Seconded: Cr Bailey Carried

Report

This report is to advise Council of the outstanding matters currently being dealt with by the organisation.

Considerations

1. **Corporate Plan**
   N/A

2. **Policy and Legal Implications**
   Policy and legal implications will be addressed through each matter.

3. **Financial and Resource Implications**
   Budget impacts will be addressed in resolving each matter.

4. **Risk Assessment**
   N/A

Council Resolutions Action Report
Executive Services

Meeting Date	Minute No.	Resolution/ Action Required	Comments	Closed/ Open
26/03/25	OM006341	That Council approves an annual contribution of $21,725.00 for the operation of the Queensland Beef Roads Committee for the year ended 30 June 2026 subject to the balance of members not indicating support for the higher contribution of $31,417.00 in which case the higher contribution is approved.	Council is awaiting invoice from the Queensland Beef Roads Committee.	OPEN
23/04/25	OM006371	That Council resolves to make a $5,000.00 donation to CQShines Hospital Foundation in the 2024/2025 financial year.	Council contribution to be arranged by Manger Community Services.	OPEN
23/04/25	OM006372	That Council approve assistance of $30,000 to the Willawa Rural Fire Brigade to facilitate the construction of a new shed at the Moura Airport.	Council contribution to be paid after 30 June 2025.Correspondence sent to Willawa Rural Fire Brigade on 30 April 2024 (ID1958488).	OPEN
25/06/25	OM006451	That Council reschedule the August 2025 Ordinary Meeting to 9:00am Thursday 28th August 2025 to allow the Mayor, Deputy Mayor and Chief Executive Officer to attend the CQROC Parliament Advocacy Day and Board Meeting in Brisbane.	Meeting date on Council website has been updated. Date change will be advertised on CQ Today online publication in mid-July.	CLOSED
25/06/25	OM006454	That Council resolve: 1. That the Banana Shire Council Audit Committee be increased from a membership of three to five comprising of two Councillors and three independent members. 2. That the amended Banana Shire Council Audit Committee Charter Policy be adopted. 3. Council call for expressions of interest from members of the community with appropriate business, financial management and risk management skills to become members of the Banana Shire Council Audit Committee. 4. Council approves meeting fees for independent members of the Committee of: • Chairperson - $600 per meeting; • Independent Members - $400 per meeting.	Governance to QA policy and complete expression of interest process.	OPEN

23/07/25	OM006484	That Council resolve to endorse the proposed motions for submission to the 2025 Local Government Association of Queensland Annual Conference.	LGAQ Motions lodged 24 July 2025	CLOSED
23/07/25	OM006485	That Council approve an amendment to the amounts currently listed in Council's Fees and Charges regarding the Right to Information applications (RTA) to align to the increase set by the Office of the Information Commissioner. The updated fee for the RTA: Application fee: $57.65 Processing charges: 1. If the agency or Minister spends less than 5 hours – nil. 2. If the agency or Minister sends more than 5 hours processing the application - $8.95 per 15 minutes or part of 15 minutes.	Fees and Charges have been updated accordingly.	CLOSED
23/07/25	OM006487	That Council adopt the Public Interest Disclosure Procedure.	Governance to QA Procedure.	CLOSED
23/07/25	OM006488	That Council adopt the Investigations Councillor Conduct Policy.	Governance to QA Procedure.	CLOSED
23/07/25	OM006489	That Council resolve that a submission be drafted for the Water Plan (Great Artesian Basin and Other Regional Aquifers) 2017 consultation.	Submission lodged 18.08.25 – Refer document 1980785.	CLOSED

13.1.2 REGISTER OF CONTACT WITH A LOBBYIST – AS AT 30 JUNE 2025

Date: 1 July 2025
Author: Chief Executive Officer - Tom Upton
File No:
Letter No:
Attachment: Register of Contact with Lobbyists
Minute No: OM006510

Resolution:

That Council receive the Register of Contact with a Lobbyist report as at 30 June 2025.

Moved: Cr Boyce Seconded: Cr Burling Carried

Report

Under the *Integrity Act 2009* Council must keep a register of contact with a lobbyist for Councillors & applicable Staff.

From time to time, the Integrity Commission requests a copy of this register for a particular month.

Also, Council is required to advise of any contact by Councillors or applicable staff with an unregistered lobbyist as soon as practicable.

This report has also been presented to Council Executive Management Team for their information and/or comment.

Banana Shire Council

Register of Contact with Lobbyists - **APRIL**

Name and Title of Principal Departmental Officer or Councillor		List all other Public Officials Present	Name of Registered Lobbyist (all lobbyists present)	Client of Lobbyist (including names of all present)	Method of Contact	Purpose of Contact	Issue (brief description –10 words)	Outcome of contact
CONTACT WITH LOBBYISTS **Staff** **Councillors**								
FERRIER Neville	1	Chris Welch Craig Tunley	AUKUS Forum Members, Michael Sharpe, Catherine Krimmer	NIL, Representing themselves	Virtual - multiple emails and in person	Consultation with AUKUS Forum	NIL	Arrangements for upcoming 2025 AUKUS Forum Events
NIL CONTACT ADVISED **Staff** **UPTON** Tom – CEO **WELCH** Chris – Director Council Services **PETETI**, Venkata – Director Corporate & Community services **PICKERING**, Michael – Acting Director Infrastructure Services **LIPSYS** Anthony – Manager Water Services **BARUA** Sajib - Senior Procure & Contract Advisor **RUDDER**, Peter – Manager Finance **TRAGARDH**, Peter - Acting Manager People & Performance **JOHNSON**, Ian – Manager Infrastructure Works **GARVEY**, Nathan – Manager Infrastructure Technology **WRIGHT**, Joe - Manager Community Services **HILL**, Heidi – Manager Governance **STEWART**, Michael – Manager Information Technology **FITZGIBBON**, Tarnya – Manager Development and Regulatory Services **DEDES,** Perry – Manager Waste & Environment **NICHOLS**, Annika - Acting Manager Human Resources **Councillors** **BURLING** Adam **JENSEN** Ashley **CASEY** Phillip **BAILEY** Kerrith **LEO** Brooke **BOYCE** Terri								
NO REPLY RECEIVED FROM **Staff** **Councillors**								

Banana Shire Council

Register of Contact with Lobbyists - **MAY**

Name and Title of Principal Departmental Officer or Councillor		List all other Public Officials Present	Name of Registered Lobbyist (all lobbyists present)	Client of Lobbyist (including names of all present)	Method of Contact	Purpose of Contact	Issue (brief description –10 words)	Outcome of contact
CONTACT WITH LOBBYISTS **Staff** **Councillors** **FERRIER** Neville	1	Chris Welch Craig Tunley	AUKUS Forum Members, Michael Sharpe, Catherine Krimmer	NIL, Representing themselves	Virtual - multiple emails and in person	Consultation with AUKUS Forum	NIL	Arrangements for upcoming 2025 AUKUS Forum Events
NIL CONTACT ADVISED **Staff** **UPTON** Tom – CEO **WELCH** Chris – Director Council Services **PETETI**, Venkata – Director Corporate & Community services **PICKERING**, Michael – Acting Director Infrastructure Services **LIPSYS** Anthony – Manager Water Services **BARUA** Sajib - Senior Procure & Contract Advisor **RUDDER**, Peter – Manager Finance **TRAGARDH**, Peter - Acting Manager People & Performance **JOHNSON**, Ian – Manager Infrastructure Works **GARVEY**, Nathan – Manager Infrastructure Technology **HILL**, Heidi – Manager Governance **STEWART**, Michael – Manager Information Technology **FITZGIBBON**, Tarnya – Manager Development and Regulatory Services **DEDES,** Perry – Manager Waste & Environment **NICHOLS**, Annika - Acting Manager Human Resources **Councillors** **BURLING** Adam **JENSEN** Ashley **CASEY** Phillip **BAILEY** Kerrith **LEO** Brooke **BOYCE** Terri **NO REPLY RECEIVED FROM** **Staff** **WRIGHT**, Joe - Manager Community Services								

Banana Shire Council

Register of Contact with Lobbyists - **JUNE**

Name and Title of Principal Departmental Officer or Councillor		List all other Public Officials Present	Name of Registered Lobbyist (all lobbyists present)	Client of Lobbyist (including names of all present)	Method of Contact	Purpose of Contact	Issue (brief description –10 words)	Outcome of contact
CONTACT WITH LOBBYISTS **Staff** **Councillors** **FERRIER** Neville								
	1	Chris Welch Craig Tunley	AUKUS Forum Members, Michael Sharpe, Catherine Krimmer	NIL, Representing themselves	Virtual - multiple emails	Consultation with AUKUS Forum	NIL	Arrangements for upcoming 2025 AUKUS Forum Events
	2	Nil	Consultant for EDF Renewables Australia	NIL, Representing themselves	Verbal - phone call	Consultation with EDF Renewables Australia	NIL	Liaison and discussions on Renewable Energy Projects
NIL CONTACT ADVISED **Staff** **UPTON** Tom – CEO **WELCH** Chris – Director Council Services **PETETI**, Venkata – Director Corporate & Community services **PICKERING**, Michael – Acting Director Infrastructure Services **LIPSYS** Anthony – Manager Water Services **BARUA** Sajib - Senior Procure & Contract Advisor **RUDDER**, Peter – Manager Finance **TRAGARDH**, Peter - Acting Manager People & Performance **JOHNSON**, Ian – Manager Infrastructure Works **GARVEY**, Nathan – Manager Infrastructure Technology **HILL**, Heidi – Manager Governance **STEWART**, Michael – Manager Information Technology **FITZGIBBON**, Tarnya – Manager Development and Regulatory Services **DEDES,** Perry – Manager Waste & Environment **NICHOLS**, Annika - Acting Manager Human Resources **Councillors** **BURLING** Adam **JENSEN** Ashley **CASEY** Phillip **BAILEY** Kerrith **LEO** Brooke **BOYCE** Terri								
NO REPLY RECEIVED FROM **Staff** **WRIGHT**, Joe - Manager Community Services **Councillors**								

13.1.3 CENTRAL QUEENSLAND REGIONAL ORGANISATION OF COUNCILS LTD CONTRIBUTION

Date: 11 July 2025
Author: Chief Executive Officer – Thomas Upton
File ID:
Letter ID:
Attachment: Draft CQROQ Budget Report for year ended 30 June 2026
Minute No: OM006511

Resolution:

That Council:

1. ***Receives the Central Queensland Regional Organisation of Councils Ltd Budget Report for the year ended 30 June 2026, and***

2. ***Approves the contribution to Central Queensland Regional Organisation of Councils Ltd for the financial year ended 30 June 2026 of $55,714.00 exclusive of GST.***

Moved: Cr Jensen Seconded: Cr Burling Carried

Report

The Central Queensland Regional Organisation of Councils Ltd (CQROC) was incorporated on 19 November 2020. The role of CQROC was to facilitate cooperation, collaboration and advocacy for the member Councils comprising:

- Rockhampton Reginal Council
- Gladstone Reginal Council
- Central Highlands Regional Council
- Livingstone Shire Council
- Banana Shire Council
- Woorabinda Shire Council

Attached to this report is a copy of CQROC's Board Report adopting the budget for the organisation for the year ended 30 June 2026 for information of Council.

CQROC has six funded projects currently being delivered:

1. Queensland Water Regional Action Plan (QWRAP) – working with member Councils on models to improve efficiency and capability in delivering water services to communities.
2. Waste Behaviour Change – focused on encouraging the need for recycling of waste across the region.
3. Grow Your Own – focused on locally developed skills to address workforce needs.
4. Regional Waste Coordinator – leading planning for future waste management across the region.
5. Regional Drought Funding – focused on leading drought resilience practices across the region.
6. Regional Jobs Program – focused on development of a Regional Jobs Plan.

The total income budgeted for the year is $1,804,975 including $1,208,029 in grant funding. Total expenditure for the year us budgeted at $1,841,275 resulting in a deficit of $36,300 for the year. Council contributions for the year total $564,946 of which Banana Shire contributes $55,714.

DATE: 7 July 2025

REPORT TO: Chair & Members

FROM: Evan Pardon - Secretary

SUBJECT: **ADOPTION OF 2025/26 BUDGET & MEMBERSHIP FEES**

RECOMMENDATION:

THAT the board adopts the 2025/26 Budget as attached.

BACKGROUND:

Directors endorsed the proposed 2025/26 membership fees at a meeting on 15 January 2025, viz:

RECOMMENDATION

THAT:

1. *The board accepts the proposed new membership contributions for 2025/26.*
2. *Members be notified accordingly and requested to include in their 2025/26 budgets.*

MOVED**: Cr Rachel Cruwys* ***SECONDED**: Cr Terri Boyce* ***CARRIED

Following the presentation of the proposed 2025/26 membership fees a deep dive was undertaken into the CQROC financials including all past and in progress projects by the Secretariat. This identified a range of anomalies between funding agreements with departments and service agreements (or lack thereof) with LG Services Group (Scott Mason).

The updated 2025/26 Budget and membership fees is attached in line with the following commentary:

- CQROC total revenue for 2025/26 $1.804M
- For the 2025/26 financial year, CQROC will receive $1.24M in project funding:

FUNDED PROJECTS	AMOUNT 25/26FY
LGAQ - QWRAP *incl BidPool app. 124 & 127	$346,770
Waste Behaviour Change - ends 30.06.2028	$110,000
Grow Your Own - completed 15.09.2025	$42,259
Regional Waste Coordinator - ends 30.06.2027	$241,000
Regional Drought Funding - ends 30.11.2025	$450,000
Regional Jobs Committee – ends 30.09.2025	$50,000

- The budget allows for project expenses which are ***ineligible*** under the Project Funding Agreements for both the Regional Waste Coordinator and the Behaviour Change Coordinator of approximately $96k (being LGSG management fee for RWC & LGSG management fee, vehicle, phone and sundries for BCC).
- Total Revenue for Projects $1,240,029 and total expenses to operate all 6 projects $1,386,275 – results in a cost to CQROC of $146,246.
- About $564K in membership revenue is required to operate the company, including the increased Executive Officer contract package, the allocation of Secretariat Support role and above project overs.
- Overall, the 2025/26 financial result is a balanced budget. This factors in a required deficit of $36,300 being Behaviour Change project expenses that will deplete from the funds already in our cash reserves, to utilise the cash contribution already made to the project.

- Review and formalisation of the LGSG Service Agreement to host the CQROC employees is currently in discussion with the Secretary and Scott Mason. Initial discussion has shown positive sign for change to improve efficiency and streamline processes.

ALIGNMENT TO STRATEGIC PLAN:

CQROC strategic plan is in progress with the plan in design.

CQROC Strategic Regional Assets
1. Utilities — water; waste; energy mix.
2. Connectivity — telecommunications; inland rail; roads.
3. Future Industry — advanced future industries; supporting defence.
4. Social Infrastructure — health services; population strategy; workforce; housing.

BUDGET IMPLICATIONS AND RESOURCE REQUIREMENTS

The 2025/26 proposed Budget and membership fees does present an increase in contribution from 2024 as well as proposal presented on 15 January 2025 as outlined in the previous commentary.

	2024 Fee	2025 Proposed	Increase
RRC	$ 137,175	$ 171,136	$ 33,961
GRC	$ 121,564	$ 153,135	$ 31,571
CHRC	$ 72,770	$ 89,295	$ 16,525
LSC	$ 67,204	$ 84,153	$ 16,949
BSC	$ 41,861	$ 55,714	$ 13,853
WSC	$ 10,524	$ 11,514	$ 990
			$ 113,848

Increased administration of general business operations, growth in State & Federal Advocacy programs, along management of 6 funding agreements totalling $1.24M for the 2025/26 financial year has resulted in an overall increase of $113k in member contributions.

CONCLUSION:

The 2025/26 budget and member contributions are presented for formal adoption.

Authored by: Evan Pardon and Amanda Ivers

Central Queensland Organisation of Councils
Draft Budget
for the year ended 30 June 2026

Budget 2025/26

Rollover Funds	$ 73,207.70	Inland Rail FUNDS
	$ 145,000.00	Behaviour Change Funds - $36k to be used each year of project
Total held	**$ 218,207.70**	

excl gst

	REVENUE	General Operations	LGAQ	DNRMMRRD	DESBYT	DES	TOTAL	Projects Outside of CQROC			
Revenue											
260	**Contributions from Members 25/26**										
	Rockhampton Regional Council	$ 171,136					$ 171,136				
	Gladstone Regional Council	$ 153,135					$ 153,135				
	Central Highlands Regional Council	$ 89,295					$ 89,295				
	Livingstone Shire Council	$ 84,153					$ 84,153				
	Banana Shire Council	$ 55,714					$ 55,714				
	Woorabinda Shire Council	$ 11,514					$ 11,514				
	Grants and Subsidies										
200	LGAQ - QWRAP *incl BidPools 124&127		$ 346,770				$ 346,770				
214	Waste Behaviour Change - ends 30.06.2028					$ 110,000	$ 110,000				
213	Grow Your Own - completed 15.09.2025				$ 42,259		$ 42,259				
212	Regional Waste Coordinator - ends 30.06.2027					$ 241,000	$ 241,000				
215	Regional Drought Funding - ends 30.11.2025			$ 450,000			$ 450,000				
211	Regional Jobs Committee				$ 50,000		$ 50,000				
	Interest Received						$ -				
	Other Income						$ -				
Total Revenue		**$ 564,946**	**$ 346,770**	**$ 450,000**	**$ 92,259**	**$ 351,000**	**$ 1,804,975**	$ -			

	2024 Fee	2025 Proposed	Increase
RRC	$ 137,175	$ 171,136	$ 33,961
GRC	$ 121,564	$ 153,135	$ 31,571
CHRC	$ 72,770	$ 89,295	$ 16,525
LSC	$ 67,204	$ 84,153	$ 16,949
BSC	$ 41,861	$ 55,714	$ 13,853
WSC	$ 10,524	$ 11,514	$ 990
			$ 113,848

Total change	% change
$ 33,960.95	25%
$ 31,570.61	26%
$ 16,524.67	23%
$ 16,948.67	25%
$ 13,852.97	33%
$ 990.13	9%

	Expenses							NOTES
	EO Consultancy Costs							
415	Executive Officer Service Agreement LGSG Salary $150k base	$ 201,000					$ 201,000	LG Services Agreement - Base Salary, Super and 20%Management fee only
	Executive Officer Travel	$ 20,000					$ 20,000	To be arranged and paid by CQROC
	Executive Officer Recruitement	$ 20,000					$ 20,000	Recruitment fee to LGSG
	Secretariat Support Service Agreement LGSG Salary $100k base	$ 133,800					$ 133,800	LG Services Agreement - Base Salary, Super and 20%Management fee only
	Secretariat Travel & Accom	$ 10,000					$ 10,000	To be arranged and paid by CQROC
	Project Roles							
430A	Regional Jobs Committee Salary $125K base				$ 50,000		$ 50,000	*Project variation extended to30 Sept 2025
430E	Grow Your Own - Service Agreement LGSG Salary $110K base				$ 36,000		$ 36,000	*Project ends 15 Sept 2025
430C	Behaviour Change Coord. - Salary $117K base LGSG Eligible exp	$ 5,000				$ 146,250	$ 151,250	*Salary and project expenses
430C	Behaviour Change Coord. - Ineligible exp	$ 48,680					$ 48,680	*LGSG Management fee not covered under funding agreement
430B	Regional Waste Coordinator - $135k base LGSG Eligible Exp					$ 241,050	$ 241,050	*Wages expense and project expenses covered under project funding agreement
430B	Regional Waste Coordinator - Ineligible Exp	$ 42,525					$ 42,525	*LGSG Management fee and allowances not covered under funding agreement
430F	Regional Drought Funding - ends 30.11.2025			$ 450,000			$ 450,000	
	Administrative Expenses							
400	Advocacy & Marketing	$ 15,000					$ 15,000	* includes advocating and collateral for state & Fed advocacy
420	Travel - Duty of Chair Only	$ 2,500					$ 2,500	* ROC Assembly etc
403	Audit Costs / Financial statements	$ 6,000					$ 6,000	
485	Subscriptions	$ 1,550					$ 1,550	* Xero & Survey Monkey
404	Bank Charges	$ 650					$ 650	
301	Communications & IT	$ 3,000					$ 3,000	*website, OCH
433	Insurance	$ 4,500					$ 4,500	
401	Meeting Expenses	$ 15,000					$ 15,000	* Brisbane and Canberra parliament House trip
461	Printing and collatoral	$ 1,000					$ 1,000	
	Project Costs						$ -	
414	Consultants Fees	$ 20,000	$ 366,770				$ 386,770	* $55k QWRAP consultation expense
429	Miscellaneous Costs	$ 1,000					$ 1,000	* office consumables minor
							$ -	
							$ -	
Total Expenses		**$ 551,205**	**$ 366,770**	**$ 450,000**	**$ 86,000**	**$ 387,300**	**$ 1,841,275**	
						DEFICIT/SURPLUS		
Net Surplus/(Deficiency)		**$ 13,741**	**($ 20,000)**	**$ -**	**$ 6,259**	**($ 36,300)**	**($ 36,300)**	*****annual shortfall in projects to be deducted from project held funds above**
Flat rate from Councils @ $5,000 each							**$ 30,000.00**	
Income Required from Councils (Average Formulation)							**$ 534,946.00**	
						Total Council Income Required	**$ 564,946.00**	**MATCH**

	Rockhampton	Gladstone	Central Highlands	Livingstone	Banana	Wooribinda	Total
	23/24	23/24	23/24	23/24	23/24	2021	
	+	+	+	+	+	+	
Operating Revenue	257,722,491	270,560,000	188,272,000	116,010,000	125,333,553	19,593,204	977,491,248
Percentage	26.4%	27.7%	19.3%	11.9%	12.8%	2.0%	100.0%
Population	84,517	65,500	28,973	41,906	14,513	1,019	236,428
Percentage	35.7%	27.7%	12.3%	17.7%	6.1%	0.4%	100.0%
Average Percentage	31.1%	27.7%	15.8%	14.8%	9.5%	1.2%	100.0%
Last years Average	31.40%	27.70%	16.10%	14.80%	8.80%	1.30%	

Council	Operating Revenue drawn from 2023/24 Annual Reports	Total	
Rockhampton Regional	Total of 242968005 + 4475215 +10279271	$	257,722,491.00
Gladstone Regional	Total of 227321000 + 2074000 +9048000 + 32117000	$	270,560,000.00
Central Highlands Regional	Total of 179830000 + 1058000 + 5907000 + 1477000	$	188,272,000.00
Livingstone Shire	Total of 108363000 + 5909000 + 1738000	$	116,010,000.00
Banana Shire	Total of 121549182 + 3784371	$	125,333,553.00
Woorabinda Aboriginal Shire	Total of 19593204	$	19,593,204.00
		$	**977,491,248.00**

	Revenue	Population	Average	$5,000 flat + Average		Last years	Difference	Change of
Rockhampton	141,042	191,230	166,136	171,136		$ 137,175	$ 33,960.95	25%
Gladstone	148,068	148,201	148,135	153,135		$ 121,564	$ 31,570.61	26%
Central Highlands	103,035	65,555	84,295	89,295		$ 72,770	$ 16,524.67	23%
Livingstone	63,488	94,817	79,153	84,153		$ 67,204	$ 16,948.67	25%
Banana	68,591	32,837	50,714	55,714		$ 41,861	$ 13,852.97	33%
Woorabinda	10,723	2,306	6,514	11,514		$ 10,524	$ 990.13	9%
				564,946	Income			
25/26 Budg Income Required	534,946	534,946	534,946		Budgeted Exp	$ 451,098	113,848	

Formula 1 - Revenue = Budget x Revenue %
Formula 2 - Population = Budget x Population%
Formula 3 - Average = Budget x Average%

13.1.4 ADOPT-A-POT STRATEGY FOR TOWN CENTRE BEAUTIFICATION

Date: 12 August 2025
Author: Chief Executive Officer – Thomas Upton
File ID:
Letter ID: 1975681, 1973412
Attachment:
Minute No: OM006512

Resolution:

That Council endorse the Callide Dawson Chamber of Commerce Adopt-a-Pot Program.

Moved: Cr Bailey Seconded: Cr Burling Carried

Report

Attached to this report is correspondence from the Callide Dawson Chamber of Commerce proposing the development of an Adopt-a-Pot Program for Biloela as a way to lift our street appearance.

The proposal is for the Chamber to approach local businesses to maintain pot plants placed in large planters in front of their businesses.

The program offers an important opportunity to engage local businesses and improve the presentation of the town.

It is recommended that Council proceed with this program with Council purchasing planters to ensure uniformity in the presentation.

Council should enter into a Memorandum of Understanding with the Callide Dawson Chamber of Commerce to ensure clarity of roles between the Chamber, Council and members as part of the project.

13.1.5 COUNCIL CHRISTMAS CLOSURES FOR 2025

Date: 2 August 2025
Author: Chief Executive Officer - Tom Upton
File No:
Letter No:
Attachment:
Minute No: OM006513

Resolution:

That the following Council service facilities close over the 2025 Christmas period as follows:

Service Facility: ***Administration Offices – Biloela and Taroom***
Close: ***3:00 pm Wednesday 24 December 2025***
Re-open: ***8:00 am Monday 5 January 2026***

Service Facility: ***Libraries, Moura Customer Service and Museum***
Close: ***3:00 pm Wednesday 24 December 2025***
Re-open: ***Monday 5 January 2026 (as per normal operating hours)***

Service Facility: ***Community Resource Centre***
Close: ***5.00 pm Friday 12 December 2025***
Re-open: ***9.00 am Monday 5 January 2026***

Service: ***Infrastructure Services – Outside Workforce***
Close: ***3.00 pm Wednesday 24 December 2025***
Return: ***6.00 am Monday 5 January 2026***

Moved: Cr Burling ***Seconded: Cr Boyce*** ***Carried***

Report

Offices

It is proposed that the Offices close over the Christmas period, which has been the practice for many years. The closure provides employees with the opportunity for a break from the busy routine of the year and to start fresh in the New Year, given the current resourcing and the limited opportunities for a break, this becomes and important cultural and retention issue. Employees are required to take the days as either annual leave, accrued rostered days off or time in lieu, except for new employees who have no annual leave or time in lieu who may take time off without pay.

Libraries

It is proposed that Libraries close at 3:00 pm on Wednesday, 24 December 2025 and reopen Monday 5 January 2026. Council has liaised with the Moura Coal & Country Historical Society, and they are supportive of closing in line with the Moura Library and Customer Service.

Community Resource Centre

It is proposed the CRC close to the public from Wednesday 24 December 2025 and reopen Monday, 5 January 2026. If approved, the CRC would ensure that the public, Customer Service and Councillors

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were notified of the closure via signage displayed throughout the CRC, Facebook and email distributed throughout the CRC network.

Waste

Baralaba, Wowan, Jambin, Thangool, Banana, Theodore, Cracow Waste Transfer Stations will be open all days and pickups will continue as scheduled. Monitoring of cameras will be done to see if extra truck runs are needed.

Thangool will be closely checked on cameras, but likely that the normal three times a week run may need to be increased to daily runs.

Biloela, Moura and Taroom will be closed on Christmas Day only. These sites will be open all other days.

Trap Gully will continue to operate normal hours except for public holidays. Waste staff will work in with Cleanaway so that their trucks can be emptied if needed on a public holiday.

Rural Services

This team works normal workdays between Christmas and New Year. Rural Services Coordinator will be available by phone all days in case of malfunctioning wash bays, wandering livestock etc.

Water Reticulation

At this stage it will be the on-call crew, with two staff, and one Team Leader or Supervisor once organised. Most staff will work up to the 24 December 2025 and return Friday 2 January 2026. The on-call crew will change work from the 24 December to the 31 December 2025 and then change over to a new crew.

Water Treatment

Council's Director Council Services recommends essential works only on public holidays and weekends (i.e. generally 3-4hrs same as what is done the rest of year). With skeleton staff effectively working full days on the non-public holidays during the closure (e.g. someone still needs to go out to Baralaba, Goovigen, Wowan etc which are not normally done on weekends).

Standpipes will remain open. Liquid Waste Accepted at STPs during working days only, otherwise by arrangement with call-out fee applicable.

Pound

The pound will be closed on 25 December 2025, 26 December 2025 and 1 January 2026. There will be reduced services between 24 December 2025 and 2 January 2026, other than for emergencies and dog attacks.

Infrastructure Services – Outside Workforce

The majority of Council's outside workforce is generally on holidays during the Christmas closure. Those staff will commence leave at 3.00pm Wednesday 24 December 2025 and return at 6.00am Monday 5 January 2026. The Depots provide skeleton staff to manage essential services and respond to any emergencies. Details of emergency callout contacts are available on Council's website and via the phone message services.

The public will be advised of the closures via the FOCUS magazine, Facebook and Council's website.

13.1.6 AMENDMENT TO RESOLUTION OM006480 23 JULY 2025 – BANANA ACCOMMODATION CAMP – WATER BY AGREEMENT

Date: 30 July 2025
Author: Chris Welch – Director Council Services
File ID:
Letter ID:
Attachment: Proposed Banana Camp Connection Point – 1972679
OM006480 23 July 2025 Ordinary Meeting
Minute No: OM006514

Recommendation:

That Council acknowledge the amendment of OM006480 to reflect the decrease in the size of the maximum nominal diameter of the approved meter from 800mm to 80mm as outlined in Condition A, Section 4 and

A. Grant approval for connection of water 'By Agreement' to Lot 45 on FN209 subject to the following conditions:-

1. The applicant is to enter into an infrastructure charges agreement with Council for payment of Water Supply Infrastructure charges for 240 Equivalent Persons (95 Equivalent Tenements) as approved for the land under MCU020-12/13 (total 240 accommodation units). The applicant shall meet all costs associated with preparation and establishment of the infrastructure agreement including any costs incurred by Council (such as Solicitors fees) with charges calculated as follows:-

a. Payment of $332,167.09 based on 240 accommodation units (as indexed from 2015 infrastructure charges resolution of $1,250 per accommodation unit – non-resident workforce accommodation - Area 3, Banana).

b. The actual amount of the infrastructure charges contribution is reviewed/indexed periodically by Council and the payment amount shall be the amount current at the time the contribution is actually paid.

c. Payment is required prior to provision of a metered water connection point by Council.

2. The applicant is to arrange for the transfer of 35ML of High Priority Water to the Banana Shire Council (Dawson River Zone N). Alternatively, Council will accept a transfer of 105ML of Medium Priority Water Allocation (Dawson River Zone N), or alternatively a financial contribution of $315,000 to be indexed annually in line with CPI. Transfer of the water allocation or payment of the financial contribution is required prior to Council installing the metered water connection.

3. The applicant accepts that water obtained from Council's town supply under this water by agreement arrangement is to be used for domestic (ie typical household type) use only. Water is not to be used for non-domestic use for example:- construction purposes, off-site use, watering stock, sale to third parties, etc.

4. ***The applicant is to make application for a metered water service connection and is to meet the cost of service installation at Barfield Road. Council is prepared to approve a meter of maximum nominal diameter 80mm.***

5. ***Water supply at the metered connection point is to be restricted to a maximum rate of 1.65 litres/per second, but may be less than this at any time. A restriction device is to be incorporated into the connection point and the cost is to be met by the applicant.***

6. ***Council will nominate the location of the metered water connection to the existing main in Barfield Road.***

7. ***The applicant accepts that that the water line after the meter is a private pipeline, and the applicant is responsible for pipeline design, installation, operation and maintenance costs. The applicant is required to obtain any approvals for undertaking works within the road reserve prior to commencing installation works.***

8. ***The method of operating and charging/billing (access charges and consumption charges) will be in accordance with Council's standard practices.***

9. ***The applicant is required to comply with any regulations and water restrictions applicable to the Banana Water Supply Area.***

10. ***This approval shall remain current for a period of two (2) years from the date the approval was granted, after such time the applicant will need to reapply.***

11. ***Council reserves the right to withdraw this approval for water by agreement if the conditions of approval are not complied with.***

12. ***The applicant and subsequent property owners are required to comply with the conditions of this approval; and***

B. Authorise the Chief Executive Officer to negotiate with the applicant an agreed amount for the infrastructure charges agreement referenced in Condition 1 and the alternative financial contribution in lieu of the water allocation transfer referenced in Condition 2.

Moved: Cr Burling Seconded: Cr Leo Carried

Report

At Council's Ordinary Meeting held on 23 July 2025, Council resolved to approve the Banana Accommodation Camp – Water by Agreement application. It has been identified that Condition A, Section 4 incorrectly referred to the size of the maximum nominal diameter of the approved meter.

This report is to formally correct the size of the maximum nominal diameter from 800mm to 80mm.

The amended report is below:

Introduction
This report is provided for Council's consideration of application for Water By Agreement to allow connection of town water supply to a property located at Lot 45 Barfield Road, Banana (Lot 45 on FN209) to the Banana town Water Supply. The property is located outside of the declared water supply area for Banana.

Background
The purpose of the Water Supply Area is to identify the particular area/s Council is prepared to supply water of desirable reliability, quantity, quality and cost for domestic purposes, firefighting purposes and municipal purposes.

The land is located outside of the Banana Water Supply Area and Council is not obliged to approve the application for connection to water, but may choose to approve connection of water 'By Agreement' with conditions. Under the "water by agreement' approval a metered water connection is provided at a main on the existing network and the applicant is responsible for extending and maintaining any pipeline to their property including responsibility for any leaks and timely repairs etc.

Banana has sufficient reservoir storage and booster pump station capacity at Banana to service this development. However, this development will consume significant capacity throughout the system thereby reducing capacity to service future development.
A previous application for water by agreement was considered by Council in 2016 (Meeting Minute OM003484 refers).

Report
The application seeks connection to town water supply 'by agreement'. It is understood the applicant wishes to provide town water supply to their 240-bed accommodation complex.

A review of the network model for the Moura/Banana water supply system indicates that the demand associated with supplying water to the property for the purpose of the 240-bed accommodation facility can be met from Council's system subject to conditions.

The additional water demand of the camp equates to 240 EP (Equivalent Persons) and is almost the same as the existing town demand of 256 EP (residential + commercial, etc). This is a significant additional load on the water system and consumes substantial capacity.

There is an existing main in Barfield Road approximately 800 m away from the property and this would be the connection point.

It should be noted that the Court Approval dated 28 November 2014 for MCU020-12/13 for the accommodation camp requires the applicant to provide an independent and stand-alone water supply to the development and prohibits connection to the Banana Shire water infrastructure. Any approval issued by Council would need to be contingent upon the applicant arranging for amendment of the Court Approval. The applicant may have commenced this process previously, but at the time of writing the status could not be confirmed from Council's records and conditions will be applied accordingly.

A water meter will need to be installed at a connection point on the existing reticulation main near Barfield Road and the applicant will need to install a pipe from the meter to the property (approx. 800m). Construction and future maintenance of the pipeline would be the responsibility of the applicant. If approved, the applicant would need to meet the cost of a metered 80mm connection from existing main in Barfield Road, and payment of infrastructure charges.

Water supply flow rate from Council's system will be restricted to a maximum of 1.65 l/s. The applicant will need to meet the cost of restricting the flow.

<u>Infrastructure Charges</u>
The land to be serviced is outside of the Priority Infrastructure Area (PIA).

Demand has been assessed as 240 EP (ie 240 bed accommodation). This 240 EP demand figure represents total demand and no additional separate loading has been applied for kitchen / catering / administration / office / landscaping / washdown, etc.

Demand associated with a typical residential dwelling/lot is typically accepted as 2.5EP/ET.

At 2.5EP/ET the 240EP attributed to this development equates to 96 ET (Equivalent Tenements). Infrastructure charges should be charged accordingly.

Water Allocation

For other similar developments outside of the water supply area seeking connection to town water supply (viz Moura Single Persons Accommodation, Moura Dawson View Residential Subdivision, Baralaba Coal Mine Accommodation, etc) Council has conditioned the relevant approval to require the applicant to permanently transfer High Priority Water Allocation to Council of an amount equivalent to the calculated annual average demand for the development.

A 35ML High Priority water allocation would be applicable to a 240-person accommodation camp (ie 0.096ML/day average daily demand x 365).

Recent advice from the Department Local Government, Water and Volunteers indicates that Under Chapter 3, Part 3 of the Fitzroy Basin Water Management Protocol (the Protocol), a change of priority group from medium to high is permitted if the location for the high priority is in Zone C or Zone B and the change falls within the minimum and maximum volumes for the zones. Noting, the conversion is 3 ML of medium priority to 1 ML high priority. However, this is dependent on the maximum and minimum allocation constraints in each zone set by the trading rules.

A check with Sunwater indicates that recent sale price of medium priority water in the Dawson River was $3000 per ML.

At a ratio of 3:1 for conversion of medium priority to high, a volume of 105ML of medium priority water allocation is required. In lieu of 35ML of high priority water allocation, Council may wish to accept 105ML of medium priority water allocation, or a financial contribution of $315,000 in lieu of the water allocation based on recent market rates.

Conclusion

The lot is located outside of the Banana Water Supply Area and Council is not obliged to approve the application for water by agreement, however Council may choose to approve the application subject to conditions. There is an existing water main located in Barfield Road approx. 800m away from the property. The system has the capacity to accommodate the additional connection.

Subject to satisfactory completion of Part A, Council would be prepared to grant approval for connection of water 'By Agreement' to Lot 45 on FN209 subject to the following conditions:-

1. The applicant is to enter into an infrastructure charges agreement with Council for payment of Water Supply Infrastructure charges for 240 Equivalent Persons (95 Equivalent Tenements) as approved for the land under MCU020-12/13 (total 240 accommodation units). The applicant shall meet all costs associated with preparation and establishment of the infrastructure agreement including any costs incurred by Council (such as Solicitors fees) with charges calculated as follows:-

    a. Payment of $332,167.09 based on 240 accommodation units (as indexed from 2015 infrastructure charges resolution of $1,250 per accommodation unit – non-resident workforce accommodation - Area 3, Banana).

b. The actual amount of the infrastructure charges contribution is reviewed/indexed periodically by Council and the payment amount shall be the amount current at the time of the contribution is actually paid.

c. Payment is required prior to provision of a metered water connection point by Council.

2. The applicant is to arrange for the transfer of 35ML of High Priority Water to the Banana Shire Council (Dawson River Zone N). Alternatively, Council will accept a transfer of 105ML of Medium Priority Water Allocation (Dawson River Zone N), or alternatively a financial contribution of $315,000 to be indexed annually in line with CPI. Transfer of the water allocation or payment of the financial contribution is required prior to Council installing the metered water connection.

3. The applicant accepts that water obtained from Council's town supply under this water by agreement arrangement is to be used for domestic (ie typical household type) use only. Water is not to be used for non-domestic use for example:- construction purposes, off-site use, watering stock, sale to third parties, etc.

4. The applicant is to make application for a metered water service connection and is to meet the cost-of-service installation at Barfield Road. Council is prepared to approve a meter of maximum nominal diameter 80mm.

5. Water supply at the metered connection point is to be restricted to a maximum rate of 1.65 litres/per second, but may be less than this at any time. A restriction device is to be incorporated into the connection point and the cost is to be met by the applicant.

6. Council will nominate the location of the metered water connection to the existing main in Barfield Road.

7. The applicant accepts that that the water line after the meter is a private pipeline, and the applicant is responsible for pipeline design, installation, operation and maintenance costs. The applicant is required to obtain any approvals for undertaking works within the road reserve prior to commencing installation works.

8. The method of operating and charging/billing (access charges and consumption charges) will be in accordance with Council's standard practices.

9. The applicant is required to comply with any regulations and water restrictions applicable to the Banana Water Supply Area.

10. This approval shall remain current for a period of two (2) years from the date the approval was granted, after such time the applicant will need to reapply.

11. Council reserves the right to withdraw this approval for water by agreement if the conditions of the approval are not complied with.

12. The applicant and subsequent property owners are required to comply with the conditions of this approval.

Cr Casey requested clarification on the fencing requirements for the War Memorial Artillery display at Thangool Memorial Park. Director Infrastructure Services to investigate requirements, consult with the Thangool community and advise outcome.

14.0 Close of Meeting

The meeting was closed at 10:14 am.

To be confirmed at the 24 September 2025 Ordinary Meeting.

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MAYOR **CHIEF EXECUTIVE OFFICER**