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208 & 325 Wyatt Rd, Kagaru

Sewerage and Water Supply

Infrastructure Master plan

To: Richard Fulcher (Litoba Holdings)

From: Dan Collins (Colliers Engineering and Design)

Project Name: 208 & 325 Wyatt Rd, Kagaru

Date: 11/08/2023

Our Reference: 22-0289-IMP-WWWS_0

1. Introduction

Colliers Engineering & Design Pty Ltd have been engaged by Litoba Holdings Pty Ltd for the purposes of preparing a Sewerage and Water Supply Infrastructure Master Plan in support of a Priority Development Area (PDA) Development Application to:

- A. Support a context plan application: and
- B. Support a future reconfiguration of lot application.

Over land located at 208 & 325 Wyatt Road, Kagaru described as Lot 27 on S311174, Lot 12 on S31468 and Lot 11 on SP310604 and as shown below.



FIGURE 1: SITE LOCATION

1.1. Context Plan

The context plan (11560 P14 Rev E – CON01, dated 11/08/2023 prepared by Saunders Havill Group) that is proposed over the site can be found in **Attachment A**. This comprises:

- Fill locations for compensatory earthworks and various ARI flood levels;
- Proposed Wyatt Road Re-alignment including proposed signalized intersections;
- Development uses including parks and conservation corridors; and
- Potential school site location

1.2. Requirements of the Infrastructure Management Plan

This Infrastructure Management Plan will be assessed against:

- The provisions of the PDA Development Scheme in force at the date of Approval;
- The applicable EDQ Guideline(s) in effect at the date of the Approval; and
- Any further requirements set out in a condition of the Approval

An endorsed infrastructure master plan may be replaced by submitting for compliance assessment a new infrastructure master plan for endorsement, which is subsequently endorsed.

Where a context plan area strategy is inconsistent with an endorsed infrastructure master plan the amendment to the infrastructure master plan may be limited to address the inconsistency.

1.3. Definitions

Developer	means the owner and developer of a parcel of land within the Approved Land at the relevant time.
IFF	means the Infrastructure Funding Framework (July 2021) of the EDQ.
IFFCOA	means the Infrastructure Funding Framework, Crediting and Offset Arrangements (November 2018) of the EDQ.
ICOP	means the Infrastructure Charging and Offset Plan Greater Flagstone Urban Development Area (June 2020) of the EDQ.
LCC	means Logan City Council.
IMP	means Infrastructure Master Plan.
EDQ	means the Minister for Economic Development Queensland established under the <i>Economic Development Act 2012</i> , which supersedes the Urban Land Development Authority and repeals the <i>Urban Land Development Authority Act 2007 (Qld)</i> .
PDA Development Scheme	means the Greater Flagstone Urban Development Area Development Scheme (October 2011).
PDA Guidelines	means the EDQ guidelines in effect at the time of the Approval (with due regard given to EDQ guidelines subsequently adopted).
QUDM	means Queensland Urban Drainage Manual
Subject Land	means the parcel of land described as Lot 27 on S311174, Lot 12 on S31468 and Lot 11 on SP310604
Supporting Documents	means the documents contained in the attachments.

1.4. Standards

- Prior to 1 July 2013, water and sewer network planning was undertaken in accordance with Logan City Council Desired Standards of Service. Network planning to support Reconfiguration of a Lot (RoL) applications will generally align to the SEQ Water Supply and Sewer Design & Construction Code (SEQ WS&S D&C Code). Note: the application of the SEQ WS&S D&C Code is expected to result in a minor decrease in infrastructure sizing for trunk networks works.
- All future planning and design will be undertaken in accordance with the SEQ Water Supply and Sewer Design & Construction Code (SEQ WS&S D&C Code).

- Detailed sewer design will be generally in compliance with Gravity Sewerage Code of Australia South East Queensland Service Providers Edition Version 2.1 and associated SEQ Code amendments.
- WSA 04-2022 Sewage Pump Station Code and associated SEQ Code amendments.
- Detailed water supply design will be generally in compliance with Water Supply Code of Australia South East Queensland Service Providers Edition Version 1.3 and associated SEQ Code amendments.
- All relevant Australian Standards and best practice design methods

1.5. Innovation and Flexibility

Infrastructure for the sewer and water supply networks will be implemented on a staged basis to align infrastructure roll out with development growth. This provides flexibility to respond to changes in demands and leaves open opportunities for the adoption of best practices and innovation in the future. The staged approach outlined above recognises the current economic constraints whilst providing the maximum flexibility to modify proposals as technology and commercial opportunities arise through the life of the development.

Whilst proposals are based on a conventional approach to providing wastewater and water supply solutions, the EDQ initiative to identify more cost-effective, sustainable and innovative servicing strategies for consideration in Flagstone is strongly supported.

2. Population and Equivalent Persons Model

2.1. Population Model

As elements of the water supply and sewerage network service dependent catchments adjacent to the Subject Land, the population model for Flagstone PDA is based on proposed development densities outlined for the Subject Land – Context Area Plan 11560 P14 Rev E – CON01.

2.2. Equivalent Persons Model

The assumed population densities are generally based on the Logan Council Planning Scheme Policy planned density requirements. These are reproduced below in Table 1.

TABLE 1 - ADOPTED POPULATION DENSITIES

Development Type	Unit	Occupancy Rate	Reference / Comments
Education	Pupil/School	600	Education Queensland
Education	EP/pupil & staff	0.5	Logan Planning Scheme Policy 7
Detached Dwelling(outside rural living area)	EP/dwelling	2.8	LCC Planning Assumptions
Attached Dwelling (other dwelling)	EP/dwelling	1.78	LCC Planning Assumptions
Commercial	EP/Ha of GFA	29.88	LWA: Priority Infrastructure Planning
Community	EP/Ha of GFA	42.32	LWA: Priority Infrastructure Planning
Health	EP/Ha of GFA	92.47	LWA: Priority Infrastructure Planning
Retail	EP/Ha of GFA	84.64	LWA: Priority Infrastructure Planning

Assessment of the PDA residential populations was undertaken in accordance with the Summary of Logan City Council Planning Assumptions and Priority Infrastructure Area (Logan City Council, August 2010).

Based on the densities outlined in the proposed Context Plan, the EP population for the Subject Land has been calculated as 6,150 EP.

3. Sewerage

The PDA had previously been analysed in terms of water supply and sewerage infrastructure for the preparation of the LCC Priority Infrastructure Plan (PIP) by the Logan Water Alliance (LWA). Subsequent detailed planning was undertaken by LWA to confirm the results of the PIP, presented in the Planning & Investigation Report 2019 Water Master Planning Task Number: PI-214, which is an appendix to the Draft DCOP Infrastructure Planning Background Report dated February 2022. Where possible the planning undertaken by the LWA was adopted and, where necessary, modified to accommodate the proposed development of the Subject Land.

LCC's current strategic planning for sewerage in the subject area considers long, medium and short-term servicing and identifies infrastructure. The latest Council strategy was adopted in 2016 as the basis for further planning and design.

The first stage of the Cedar Grove WWTP was commissioned in July 2020 catering for 20,000EP (including catchments previously serviced by the Flagstone WWTP), with the second stage to cater for 40,000 EP. Ultimately the Cedar Grove WWTP will be upgraded over 5 stages to a capacity of 196,700 EP.

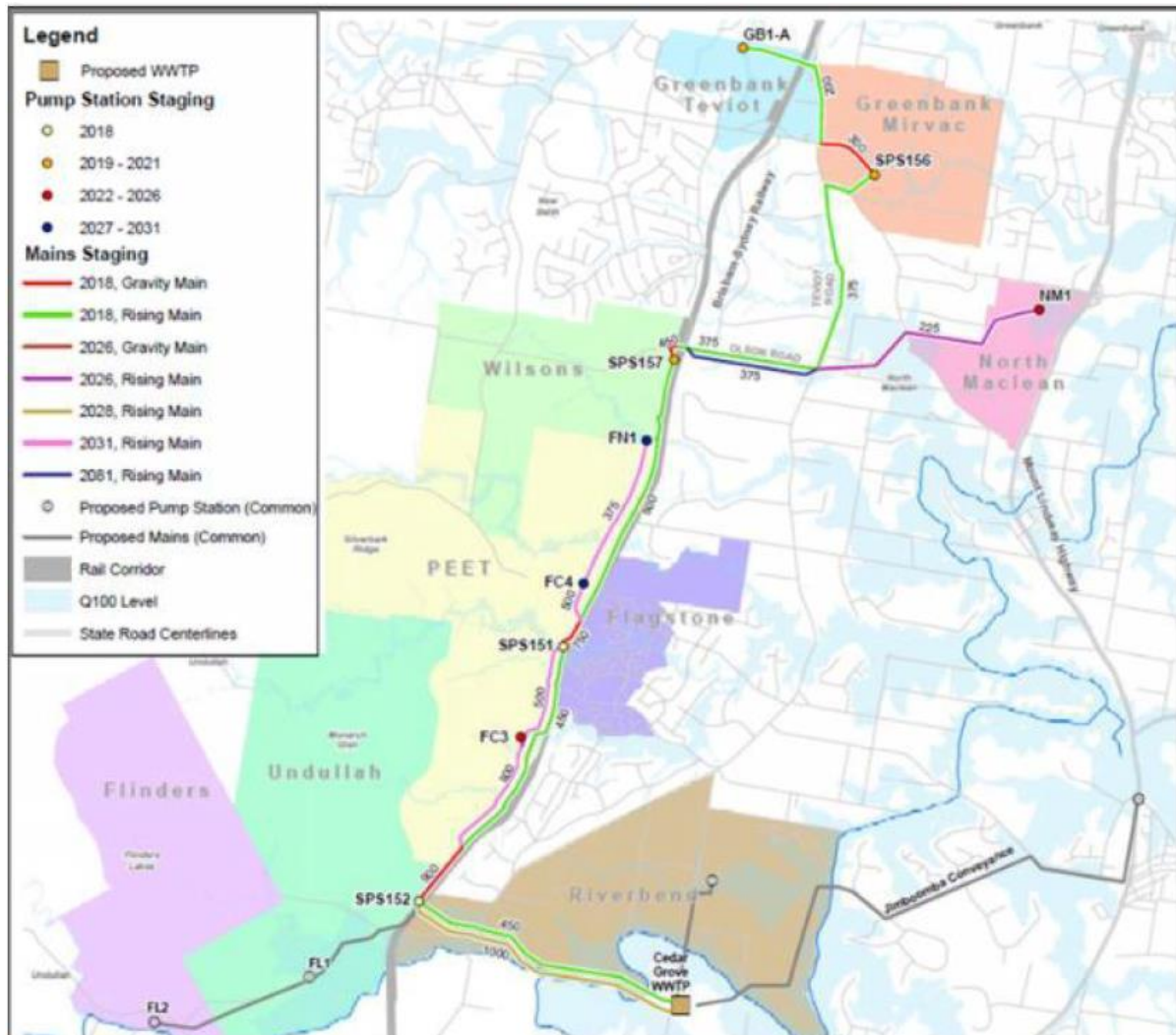


FIGURE 2: CORRIDOR OPTION 3 – SEWER (SOURCE: GREATER FLAGSTONE IPBR JULY 2022)

3.1. Interim service strategy

The ultimate sewer servicing strategy for the Subject Land involves connection to a sub-regional sewer pump station to be delivered by LWA. If timing does not permit connection to this infrastructure, an interim solution, such as a tankering agreement, may need to be developed to service the Subject Land until such time as the ultimate arrangement is finalised.

3.2. Ultimate service strategy

Ultimately, sewer for the Subject Site will be serviced by a sub-regional sewer pump station FL1 central to the two sites, as outlined in Figure 2.

Trunk gravity sewer mains are proposed to convey sewage from the proposed development to the proposed sewage pump station in line with the planned municipal sewer infrastructure outlined in the DCOP. Further details on the alignment and depth of the trunk sewer mains will be provided with the RAL applications, through which the depths will be minimised as much as possible but will generally align with the proposed trunk mains noted in the DCOP which are outlined in Figure 3.

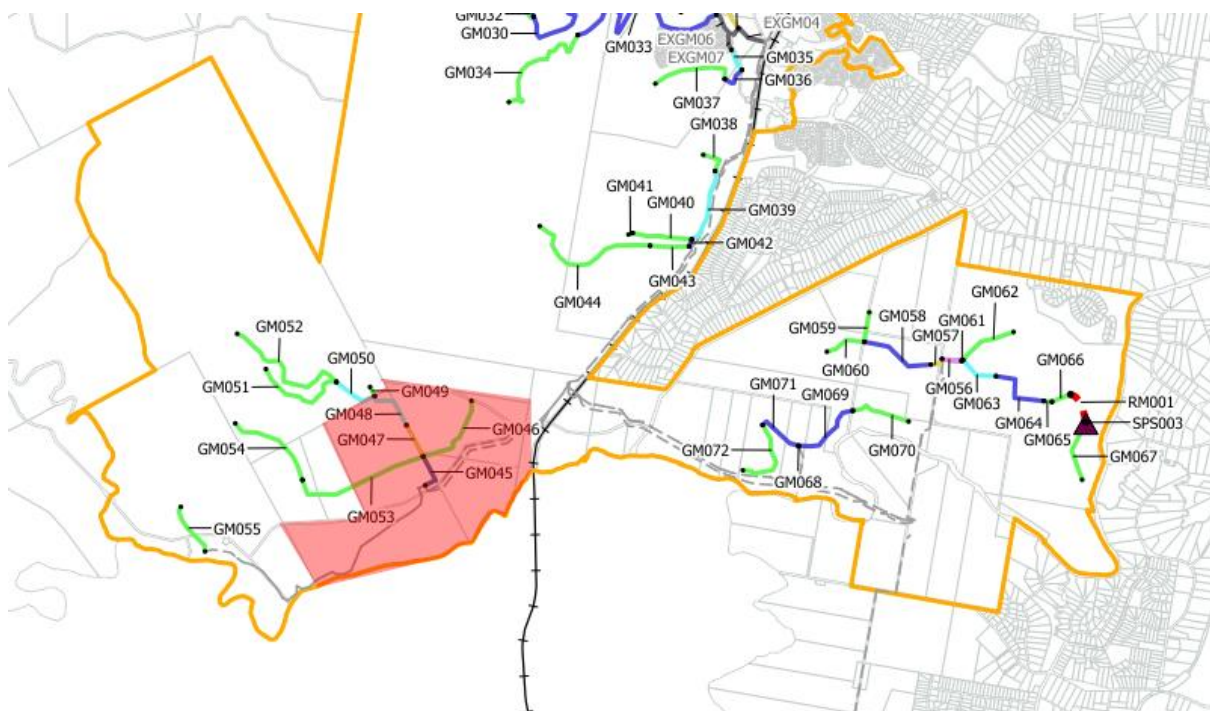


FIGURE 3: DCOP TRUNK SEWER MAPPING

Planning regarding the ultimate service strategy remains the subject of further planning and design.

For the purposes of assessment, it is assumed that the ultimate servicing strategy will be in line with the adopted LCC strategy (Logan South Wastewater Servicing Strategy Cardno May 2016) which is sewerage from the Subject Land will be delivered to the regional treatment plant at Cedar Grove.

4. Water Supply

4.1. Trunk water supply network

In preparing the Water Supply Servicing Strategy, a review of the previous planning undertaken by the LWA was completed. The assessment considered the following reports:

1. Greater Flagstone Priority Development Area Infrastructure Planning Background Report February 2022; and
2. Logan Water Infrastructure Alliance Planning & Investigation Report 2019 Water Master Planning Task Number: PI-214.

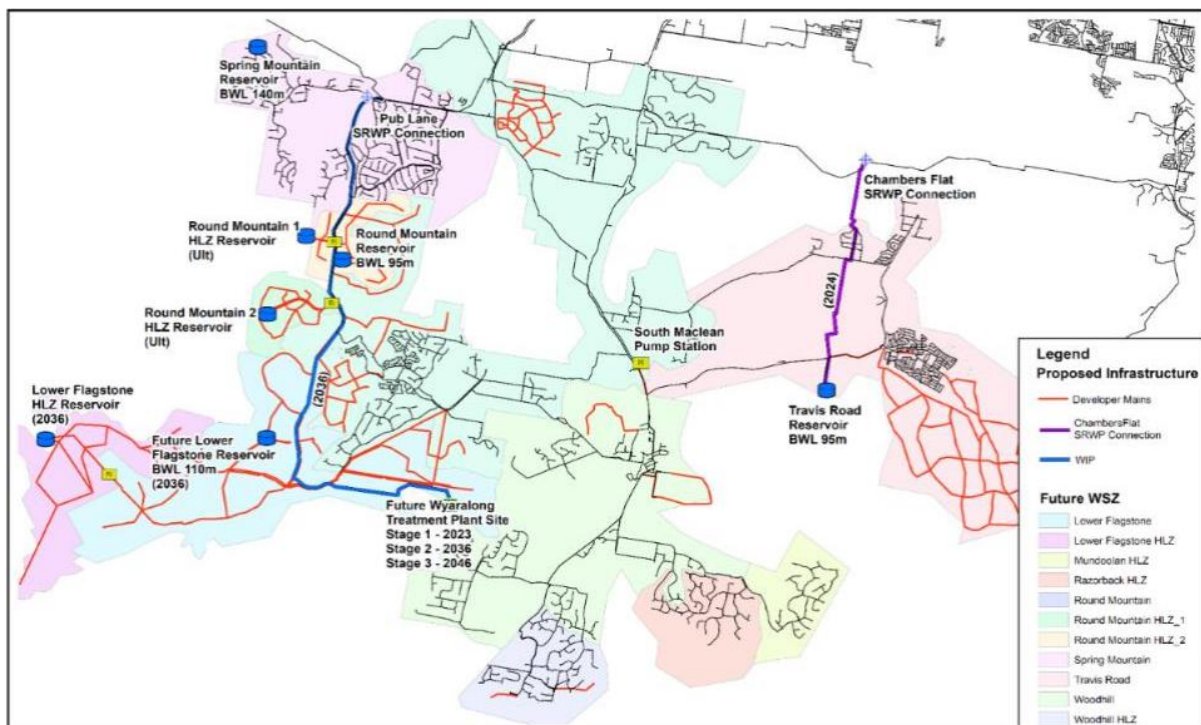


FIGURE 4: PROPOSED ULTIMATE WATER SUPPLY STRATEGY FOR LOGAN SOUTH (SOURCE: GREATER FLAGSTONE IPBR JULY 2022)

LWA planning has indicated that the duplication of some mains proposed to service the Subject Land will be required to service the Greater Flagstone region from the Round Mountain Water Supply Zone.

4.3. Reservoirs

Current network planning considers a future Lower Flagstone Reservoir to be delivered as sub-regional infrastructure to service the Lower Flagstone water supply zone by 2036. Further network analysis will be undertaken at ROL phase to determine the capacity to service this development ahead of the delivery of the sub-regional reservoir.

5. Disclaimer

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This report has been compiled at the level of detail specified in the report and no responsibility is accepted for interpretations made at more detailed levels than so indicated.

Attachments

Attachment A Concept plan of subdivision

Attachments

Attachment A Concept plan of subdivision

11560 P14 Rec E – CON 01

CONTEXT PLAN

NOT TO BE USED FOR ENGINEERING DESIGN
OR CONSTRUCTION

NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

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PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES OBTAINED FROM DCDB

LEGEND

- Context Plan Area
- Major Contour (1.0m interval)
- Flood Level - RL 35.2
- ARI 20 - RL 32.6 AHD
- ARI 5 - RL 29.8 AHD
- DFE Flood Extents
- Fill Locations (compensatory earthworks)
- Urban Residential (min 15 dw/ha)
- Medium Density Residential (20-50 dw/ha)
- Centre (retail showroom)
- District Recreation Park - 10ha
- Major Linear Park
- Local Linear Park
- Environmental Park
- Neighbourhood Recreation Park
- Neighbourhood Recreation Park (400m Walking Catchment)
- Wyatt Road Realignment - 33m Urban Arterial
- 22m Neighbourhood Collector Road
- Signalised Intersection
- Potential School Site

RP DESCRIPTION: Lot 11 on SP310604 & Lot 27 on S311174

SCALE A1 1:5000 @A3 1:10000 - LENGTHS ARE IN METRES

