water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X313, Pretoria, 0001, Sedibeng Building, 185 Francis Baard Street, Pretoria,
Tel: (012) 336-7500 Fax: (012) 323-4472 / (012) 326-2715

DRAFT WATER USE LICENCE APPLICATION SUMMARY

NAME OF APPLICANT:

Garden Route Gateway Plaza (Pty) Ltd

Compiled by:

Sonia Jordaan and James Dabrowski
(Confluent Environmental)

Signature: 

Date: 4 May 2023

1. Applicant Details

Name of applicant: Garden Route Gateway Plaza
Postal address: PO Box 1429, George, 6529
Cell phone number: +27 83 625 0919
E-mail address: oilcon@mweb.co.za

2. Person Submitting Application

Dr J.M Dabrowski (Ph.D., Pr.Sci.Nat. Water Resources)

Registration Number: 114084
Date of registration: November 2015

3. Background and Purpose

The proposed Garden Route Gateway Plaza development entails the construction of a mixed-use development on Portions 278 and 282 of Kraaibosch Farm No 195 (Figure 1), which are located on the eastern side of the N2 highway as it leads into the town of George. The proposed development will entail the construction of the following:

- Block A: Nursery: 300m²
- Block B (Ground floor): Tourist Centre (Mixed use): 2,000m²
- Block C: Outdoor function area: 300m²
- Block D (Ground floor): Club House: 1,350m²
- Block E: Chapel: 250m²
- Block F: General storage: 150m²
- Block G: Stables: 1,000m²
- Block H: Storage: 150m²

Based on the project layout and the proposed plans, the following water uses have been identified:

- **Section 21 c & i**: Construction of a mixed-use development (within 500 m of a wetland);
- **Section 21 e**: Irrigation of pastures using wastewater from a sewage package plant (within 500 m of a wetland); and
- **Section 21 g**: Temporary storage of wastewater as part of a sewage package plant (within 500 m of a wetland).

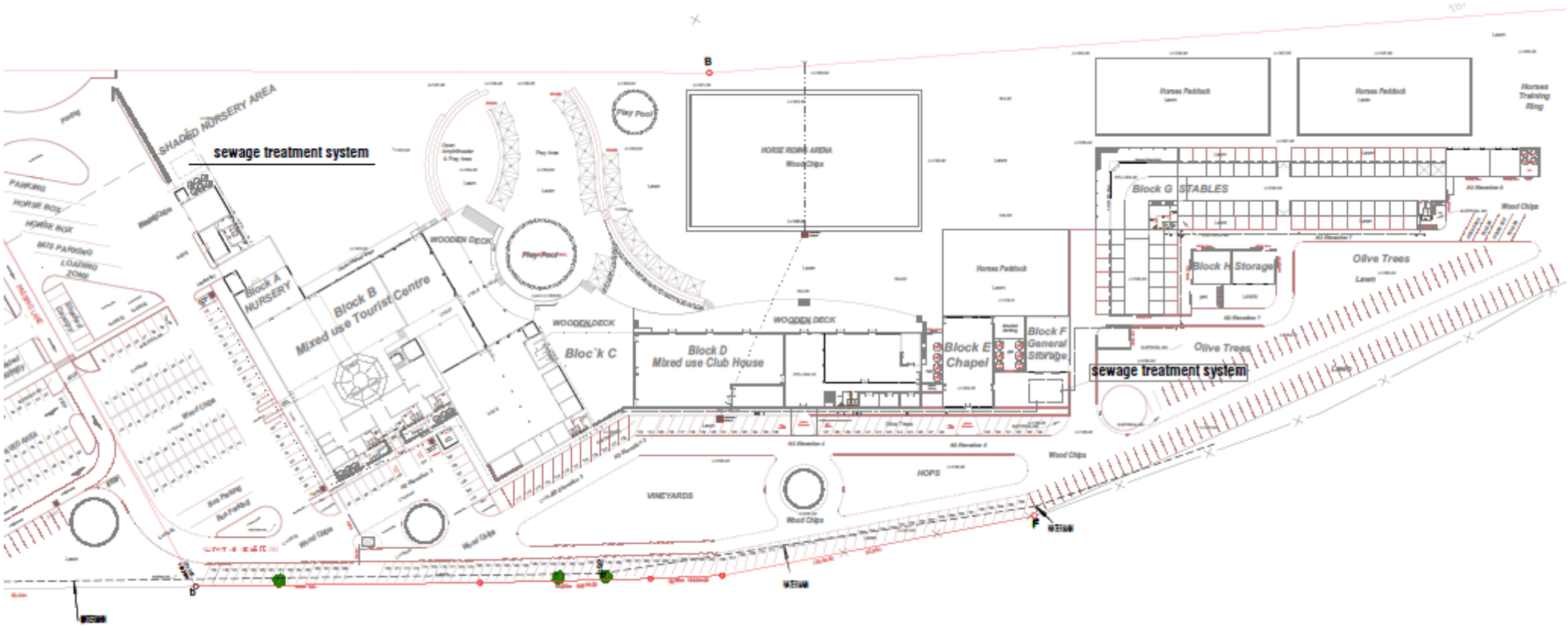

Figure 1: Site Development Plan (SDP) for the proposed Garden Route Gateway Plaza

4. Location of Water Uses

The project in respect of which this water use license application is submitted is located in the Western Cape Province, on the outskirts of the town of George. The water uses will take place on Portion 400 of the Farm Kraaibosch 195, which forms part of the K30C quaternary catchment within the Breede Olifants Water Management Area (WMA) (Figure 2). The property is located immediately to the north of N2 highway connecting George to Wilderness. No watercourses are mapped to occur within the property boundaries (Figure 3). The development does, however, fall within 500 m of a channelled valley-bottom wetland located to the north of the property. The development does therefore fall within the regulated area of a watercourse.

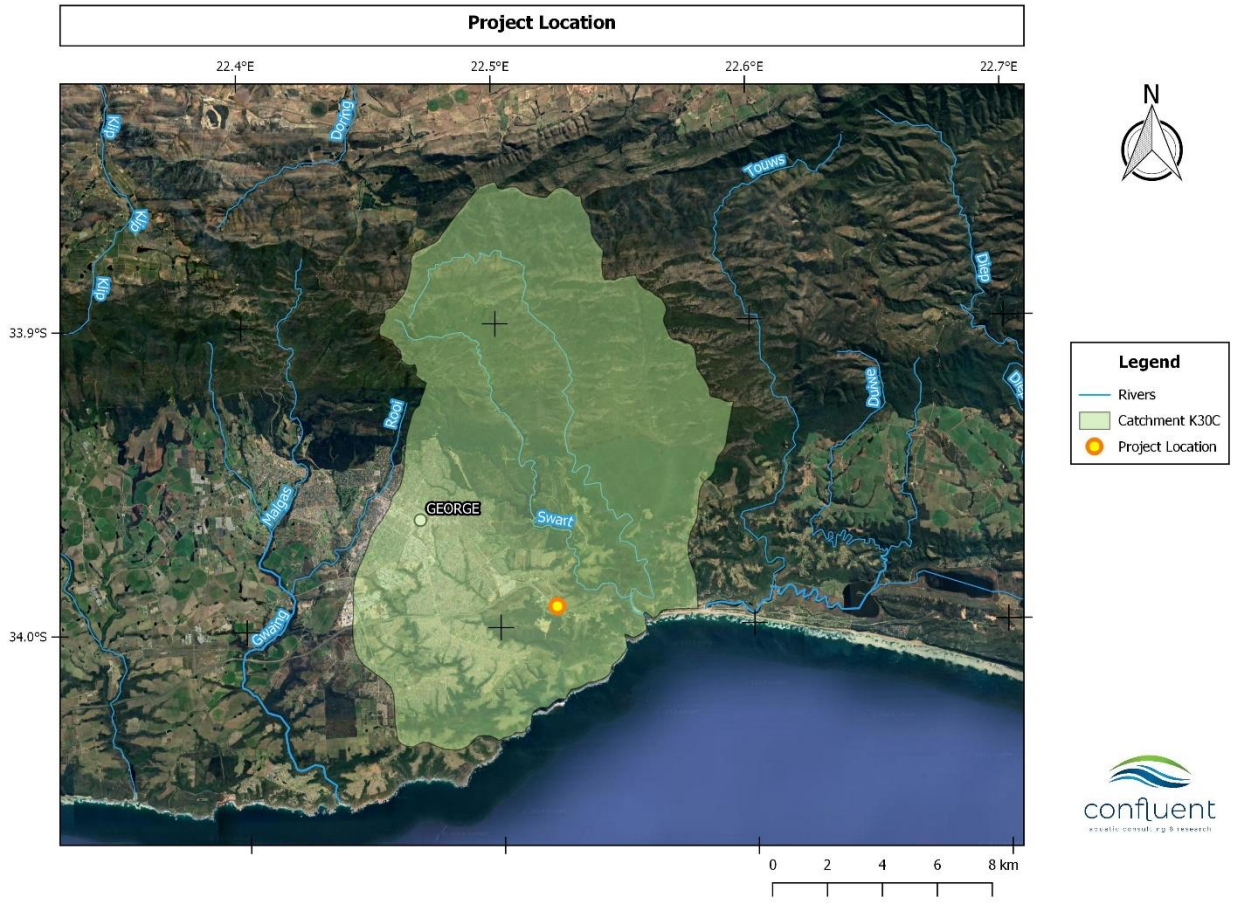

Figure 2: Project location in quaternary catchment K30C

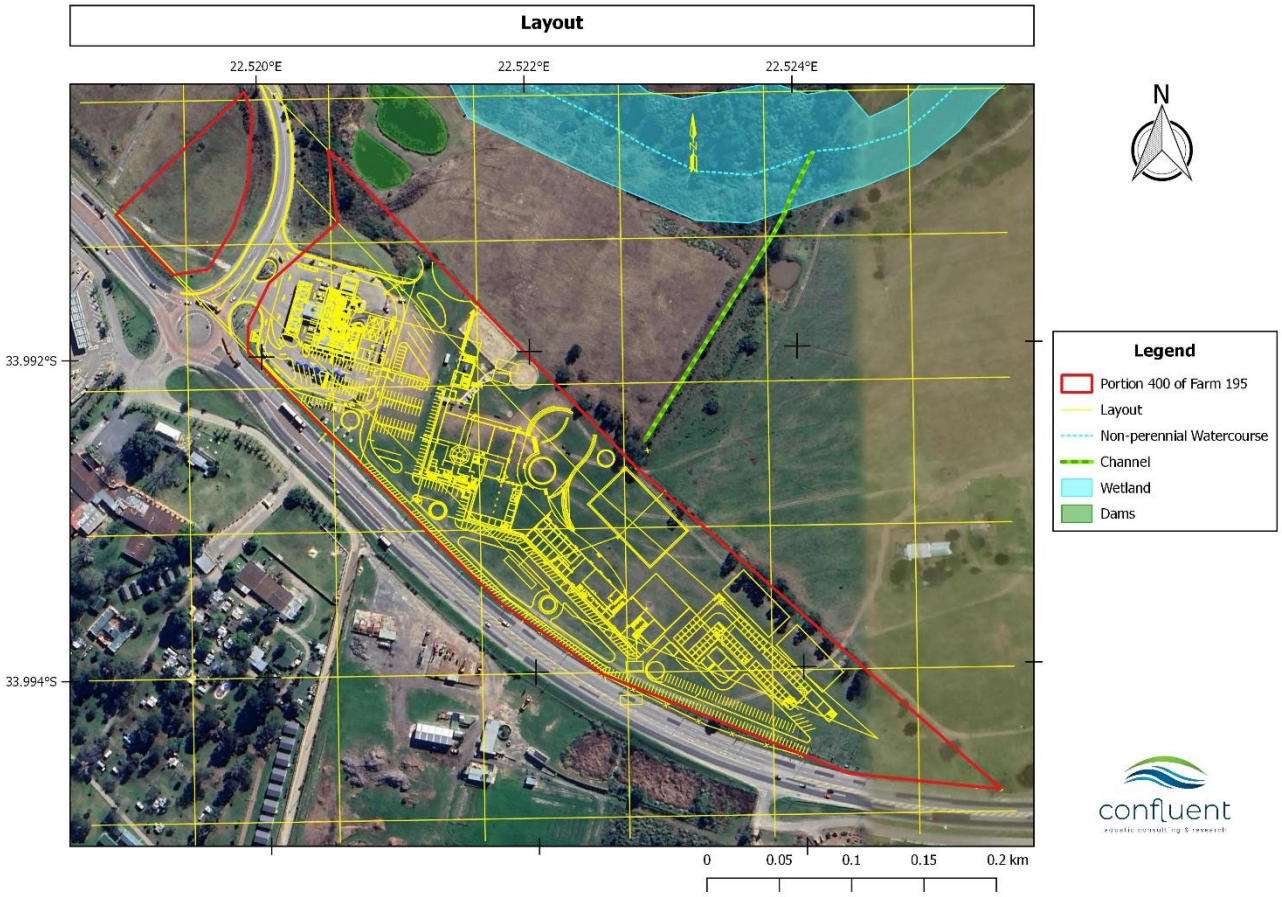

Figure 3: Proximity of project layout to nearby watercourses

Table 1: Property Details

Property description	Title Deed number	Owner
Portion 400 of Farm 195 Kraaibosch	T000049073/2003	Garden Route Gateway Plaza (Pty) Ltd

5. Administrative Documents and Technical Reports Submitted by Applicants

Administrative Documents

The following administrative documents will be submitted in support of this application:

- Letter of Appointment
- Title Deed of properties
- Tax invoice of Breede-Gourtiz administration fee
- Applicant's company registration certificate
- Applicant's contact details
- Applicants' B-BBEE compliance certificate

Reports and Other Technical Documents

Table 2: Technical Report

Technical documents	Compiled by	Date compiled
Aquatic Biodiversity Verification Assessment	Debbie Fordham, Sharples Environmental Services	June 2021
Engineering Services Report	Mr. G Pepler, Hessequa Consulting Engineers	March 2022

6. Project Description

All watercourses within 500 m of the property were identified, delineated, investigated infield, and screened in accordance to their risk of being impacted upon. No aquatic habitat was identified within the boundaries of the proposed site (Figure 3). Surface runoff from the site moves down slope toward the north-eastern boundary, where it accumulates in a shallow straight earthen channel, that is situated within a natural area of drainage. The channel directs surface runoff from the hillslope towards a wetland located approximately 180 m to the north of the site. The straight channel, which acts like a drain, was confirmed by Fordham (2021) to be the result of forestry activities modifying the natural form of a drainage line. Historically, the drainage line would have contained a non-perennial stream channel, with its source mid-length down the hillslope, supporting a narrow riparian zone. However, the land was cleared, and the channel was straightened due to forestry activities.

The channelled valley bottom wetland joins the Swart River to the east. While this wetland falls outside of the footprint of the development, the development does occur within 500 m of the wetland and therefore falls within the regulated area of the watercourse as defined in Section 21 c and i of the National Water Act (see Figure 1).

No municipal wastewater system is available to accommodate the wastewater generated from the proposed development. Sewage from the development will therefore gravitate to a proposed new BIOROCK/ECOROCK Sewage Package Plant (or similar). The plant will be installed in phases as required and will be able to treat up to 30 m^3 (or 30 000 liters) of waste per day.

The treated water will be suitable for irrigation on the surrounding grass/paddock areas where public access will be restricted. Only the grassed horse paddock areas (see Figure 1) will be irrigated with wastewater and public access to these areas will be controlled / restricted. The total area of grassed paddocks is approximately 1 hectare. The maximum concentrations of wastewater parameters in the treated effluent are expected to be below the General Limit as prescribed in the Section 21 (e) and (f) General Authorisation:

1. pH @37deg = 5.5-9.5
2. Electrical conductivity (EC) @ 25deg < 150mS/m
3. Faecal coliforms (FC) < 1000/100ml
4. Suspended solids < 25mg/l
5. Chloride as free chlorine < 0.25mg/l
6. Fluoride < 1.0mg/l
7. Soap, Oil and Grease < 2.5mg/l
8. Chemical oxygen demand after algae removal < 75mg/l
9. Faecal coliforms < 1000/100ml
10. Ammonia (as Nitrogen) < 6mg/l
11. Nitrate (as Nitrogen) < 15mg/l
12. Ortho-phosphate (as Phosphorus) < 10mg/l

7. Methods Statement (only for c and i activity)

The aquatic biodiversity assessment (Fordham, 2021) confirmed that development of the property will not impact upon any aquatic habitat on site or the Strategic Water Source Area. There are no watercourses on the site and no watercourses will be directly affected by the construction of the development. Assuming the implementation of the stormwater management plan outlined below, no concentrated stormwater runoff will be discharged from the development, and there will be no impacts to receiving watercourses.

8. Stormwater Management Plan

Construction Phase

Stormwater runoff will be managed carefully during construction utilising the following techniques:

- Silt Fencing
- Temporary cut-off channels and berms
- Erosion protection by means of silt-fencing, reno mattress, geofabrics etc.

Operational Phase

Storm water infrastructure will be constructed in accordance with the standard requirements and specifications as agreed with the George Municipality. The operational stormwater system forms an integral part of the site development plan and will comprise of two legs, namely the minor system, and an emergency system (this proposed development is not affected by any floodline and no major storm water system is therefore envisaged).

The minor storm water control system will be affected through a Sustainable Drainage System (SuDS) (i.e. wetlands, balancing ponds, drainage areas and open diversion channels will be implemented where practical). This will completely eliminate the need for any stormwater infrastructure (i.e. paved areas, kerbs, channels, inlets, gulleys, pipes, manholes, outlets etc) and all additional stormwater 'produced' (i.e. from roofed areas) will be either retained (tanks/ponds) or absorbed (permeable surfaces) as illustrated on the development plan. The proposed drainage system will, in addition to the ecological and aesthetical purposes, function as filters that will obviate pollution from / onto surrounding areas. The existing topography and water features will be utilized and minimal earthworks and disturbance of natural areas is anticipated.

The emergency system recognizes failure of the minor system by storms greater than provided for in the minor system or in the event of malfunction of the minor system by providing continuous overland flow routes to minimize flooding of developed areas.

The following measures are proposed to mitigate the impact of post development storm water runoff from the proposed development:

a) Installation of 24 x 5,000 kℓ and 10 x 10,000 kℓ water tanks scattered through-out the development site collecting rain-water from the different roofs.

b) Open Spaces will be utilised as recreation areas as well as stormwater detention areas where the concentration of stormwater runoff will be minimised through the application of landscaping techniques (i.e. by creating grass lined swales, undulations and depressions).

c) Post development runoffs will be attenuated by constructing stilling basins and energy dissipaters at outlet structures.

9. Rehabilitation Plan

No aquatic habitat was identified within the boundaries of the proposed site and no watercourses will be directly affected by the development. No rehabilitation measures are therefore required.

10. Water Uses Applied For

Table 2: Water Uses

Water use(s) activities	Purpose	Capacity/ Volume (m^3, tonnes and/or m^3/annum)/ dimension	Property Description	Co-ordinates
Section 21 c & i				
Construction of Development within 500 m of a wetland	Construction of development within 500 m of wetland	5.2 ha	Portion 400 of Farm 195 Kraaibosch	22.522 -33.992
Section 21(g)				
Disposal and storage of sewage into a Biorock Sewage Package Plant 1 (within 500 m of a wetland)	Treatment of sewage	30 m^3/day	Portion 400 of Farm 195 Kraaibosch	22.522 -33.993
Disposal and storage of sewage into a Biorock Sewage Package Plant 2 (within 500 m of a wetland)	Treatment of sewage	30 m^3/day	Portion 400 of Farm 195 Kraaibosch	22.522 -33.992
Section 21 (e)				
Irrigation of paddocks using treated wastewater (within 500 m of a wetland)	Irrigation of paddocks	30 m^3/day	Portion 400 of Farm 195 Kraaibosch	22.523 -33.993

11. Impacts and Mitigation Measures

The potential impacts and mitigation measures that are expected from the proposed activities are presented in Table 3**.**

Table 3: Summary of impacts and mitigation measures

Water Use activity	Possible causes of impacts to the water resources	Possible Impacts to the water resource and other water users	Mitigation Measures
Section 21 (c)	• Generation of increased stormwater runoff due to an increase in the area of hardened surfaces	• Erosion and sedimentation of water resources	• Implementation of appropriate stormwater management and sediment control measures to prevent erosion of the site during the construction phase • Implementation of stormwater management plan ensuring the use of SuDs during operational phase
Section 21 (e)	• Irrigation of paddocks using treated wastewater.	• Contamination of water resources with *E. coli* and nutrients	• The water will be treated to meet the General Limits for discharge of wastewater • Effluent water quality must be monitored on a monthly basis to ensure compliance with the General Limit • Irrigated area is small (approx. 1 ha) and is located more than 150 m away from the nearest wetland • Irrigation volumes are no more than 30 m^3/day.
Section 21 (g)	• Leaks or spills of	• Contamination of water resources with *E. coli* and nutrients	• Package plant is located more than 150 m away from the nearest wetland • Package plant and associated sewage reticulation network must be inspected and maintained on a regular basis according to a prescribed schedule.

Water Use activity	Possible causes of impacts to the water resources	Possible Impacts to the water resource and other water users	Mitigation Measures
			• Two phased implementation will ensure sufficient treatment capacity
Section 21 (i)	• Generation of increased stormwater runoff due to an increase in the area of hardened surfaces	• Erosion and sedimentation of water resources	• Implementation of appropriate stormwater management and sediment control measures to prevent erosion of the site during the construction phase • Implementation of stormwater management plan ensuring the use of SuDs during operational phase

12. 9. Water Demand and Water supply

Water demand

In accordance with the design standards of the *Guidelines for the Provision of Engineering Services and Amenities in Residential Township Development* the total water demand will be as follows:

Block A (Nursery):	300m² @ 400 ℓ/100m²/d = 1,2 kℓ/d
Block B (Tourist Centre):	2,000m² @ 400 ℓ/100m²/d = 8,0 kℓ/d
Block C (Outdoor function area):	300m² @ 400 ℓ/100m²/d = 1,2 kℓ/d
Block D (Club house):	100 people @ 250 ℓ/p/d = 12,5 kℓ/d
Block E (Chapel):	250m² @ 400 ℓ/100m²/d = 1,0 kℓ/d
Block F (General store):	150m² @ 400 ℓ/100m²/d = 0,6 kℓ/d
Block G (Stables):	1,000m² @ 400 ℓ/100m²/d = 4,0 kℓ/d
Block H (Storage):	150m² @ 400 ℓ/100m²/d = 0,6 kℓ/d
Total	**37,59 kℓ/d**

Water supply

Water, for the proposed development, will be available from the existing water reticulation. George Municipality confirms that the development area will be serviced from the Kraaibosch water tower.

The required storage volume, for the development, is as follows:

Storage Volume : 2 x 41,6 m^3 plus 108m^3 = 191 m^3

13. Public Participation

A 60-day public participation for the WULA will commence 8 June 2023 to 6 August 2023.