

5 February 2026

The Director Technical Services
West Coast District Municipality (WCDM)
P.O. Box 242
Moorreesburg
7310

Attention: Mr Michiel Visser

Dear Sir,

**PROPOSED RESIDENTIAL DEVELOPMENT ON PORTIONS 17 & 20 OF FARM 23, PATERNOSTER:
IMPACT ON THE WCDM WATER SUPPLY SYSTEM**

The request by Mr Louren du Plooy of Vaalplaas DevCo to comment on the capacity of the WCDM bulk water supply system to serve the proposed development on portions 17 & 20 of Farm 23 in Paternoster, within the Saldanha Bay Municipal (SBM) area, refers.

1. EXTENT OF DEVELOPMENT

The total annual average daily demand (AADD) required for the development is calculated as 37,6 kL/d.

The location of the proposed development in SBM is shown in Figure 1 attached.

This document should, inter alia, be read in conjunction with the following reports:

- Bulk Water Master Plan (performed by GLS for the West Coast District Municipality), dated June 2023.
- Risk of Supply Analysis of the West Coast District Municipality's Withoogte and Swartland Bulk Water Supply Systems, dated March 2025.

The master plan indicated that the proposed development area on portions 17 & 20 of Farm 23 in Paternoster should be supplied with water from the Paternoster reservoirs, which are supplied from the Vredenburg bulk water system. The Vredenburg water system is supplied with bulk water from the Besaansklip system, operated by WCDM.

The latest bulk water meter data available for this investigation was data obtained from WCDM for the financial year ending June 2025. The AADD recorded at the WCDM meters supplying water to the Vredenburg reservoirs (meter no. WC33/1) was approximately 6 347 kL/d for the financial year ending June 2025. The increase in water demand due to the proposed development will be in accordance with that allowed for in the water master plan.

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2. WATER SYSTEM

2.1. Distribution system

The development falls within SBM's Paternoster reservoir water distribution zone. The Paternoster reservoirs are supplied with water from the Vredenburg reservoirs (old 4 500 kL Van Enkhuizen reservoir and new 8 000 kL Vredenburg reservoir) in Vredenburg.

The Vredenburg reservoirs are supplied with water from meter no. WC33/1 on the WCDM's system but can also be supplied via meter no. I1. Meter no. WC33/1 is connected to a 500 mm Ø WCDM pipeline supplied from the Besaansklip reservoir and supplies water to the SBM's Vredenburg-Besaansklip pump station (PS). From the Vredenburg-Besaansklip PS water is pumped directly to the Van Enkhuizen reservoir through a 400 mm Ø bulk pipeline.

Meter no. I1 is connected to the 900 mm Ø WCDM pipeline between the Besaansklip and Vergeleë reservoirs. From meter I1 water is supplied through a 300 mm Ø SBM bulk pipeline to the Vredenburg-Langeenheid PS in Vredenburg, from where water is pumped to the Van Enkhuizen reservoir. The connection through meter no. I1 is currently only used as a back-up option.

The impact of the proposed development on the existing infrastructure of SBM is discussed in a separate report, addressed to SBM.

2.2. Reservoir capacity

The Besaansklip reservoir (located between Saldanha and Vredenburg) supplies bulk water to the Vergeleë reservoirs (located between St Helena Bay and Vredenburg), and the two reservoir sites are operated as one system within the bigger Withoogte system. The current combined storage capacity of the two reservoir sites is 95 hours of the AADD of the reservoir supply areas and is therefore sufficient in the medium term.

It should however be noted that it is proposed in the Saldanha Bay bulk water master plan that the 2 older 4,5 ML reservoirs at the Vergeleë reservoir site are decommissioned (they are in a bad state of repair and require upgrading) and replaced with a new 20,0 ML reservoir (replace existing 2 x 4,5 ML reservoirs storage volume plus an additional 11,0 ML reservoir storage volume).

The impact of the proposed development on the supply capacity of the Besaansklip & Vergeleë reservoir zone is relatively small in relation to the storage volume of 108,0 ML for the Besaansklip & Vergeleë reservoirs.

2.3. Bulk supply

The Besaansklip reservoir is supplied with bulk water from the Withoogte Water Treatment Plant (WTP) through a 1 200 mm Ø bulk pipeline. The 1 200 mm Ø feeder main to the Besaansklip reservoir is not significantly impacted by the development.

2.4. Water treatment capacity

The existing Withoogte WTP has a current treatment capacity of 72,0 ML/d.

The recorded AADD treated at the Withoogte WTP during the 2024/25 financial year was 44 808 kL/d.

Monthly flow measurements of bulk water treated at the Withoogte WTP from July 2003 to June 2025 indicates that the peak monthly demand for the Withoogte WTP is on average 1,19 times the AADD and experienced in the month of February.

The recorded peak monthly demand for the Withoogte WTP during the 2024/25 financial year was 55,23 ML/d. With a calculated ratio of peak week demand to peak month demand of 1.158, the current theoretical peak week demand for the Withoogte WTP is calculated at 63,95 ML/d (88,8% of WTP capacity)

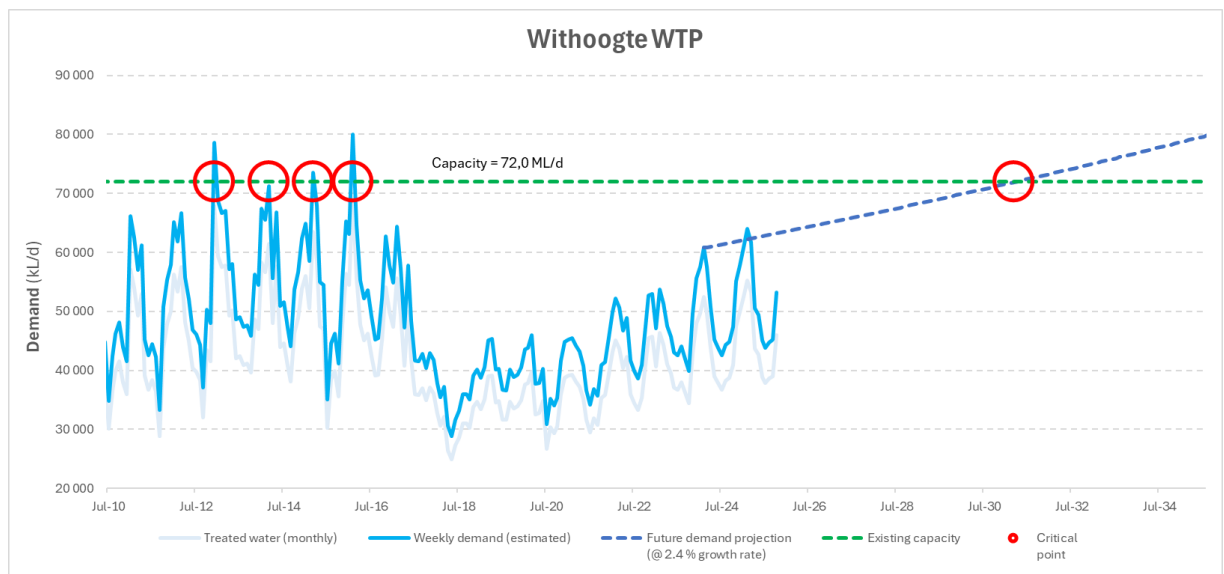
Allowance should however be made in the spare capacity of the WTP to also accommodate the potential water demand of all existing registered erven within SBM and Bergrivier Municipality (BM) (supplied with water from the Withoogte WTP) which are currently vacant. This scenario (where all vacant erven are developed) is called the “existing fully occupied” scenario.

The calculated theoretical fully occupied peak weekly demand for the Withoogte system is calculated as 73,86 ML/d, which is more than the capacity of the treatment plant. Peak demand to the system can, however, be augmented through the Langebaan Road and Hopefield aquifers, with a safe yield of 12,4 ML/d.

The development can therefore only be accommodated in the existing system if the capacity of the Withoogte WTP is increased, or alternatively if the deficit in treatment capacity is provided from an alternative source such as the existing groundwater sources.

The Withoogte WTP has reached capacity prior to the drought that has been experienced in the region between 2017 and 2019, as can be seen in Figure 2 below. Peak demand is however currently lower than the capacity of the plant.

Figure 2: Withoogte water treatment plant:



It is estimated that the capacity will be exceeded during the 2030/31 financial year (within the next 5 to 10 years). The peak week demand should however be verified by the WCDM.

2.5. Permitted water allocation

The WCDM Withoogte bulk water system (which supplies bulk water to the Swartland, Saldanha Bay and Bergrivier Municipalities) has a current permitted water allocation from the Berg River of 23 440 ML/a.

The recorded raw water abstraction during the 2024/25 financial year from the Berg River for the Withoogte system was 17 570 ML, which is less than the current allocation.



3. BULK CONTRIBUTIONS

The developer of the proposed development on portions 17 & 20 of Farm 23 in Paternoster may be liable for the payment of a Development Contribution (as calculated by the Saldanha Bay Municipality) as a contribution towards water infrastructure of the WCDM system as per Council Policy.

4. CONCLUSION

The impact of the proposed development on portions 17 & 20 of Farm 23 in Paternoster on the WCDM supply infrastructure is considered to be insignificant. No upgrading to the WCDM system upstream of the Vergeleë reservoirs is required as a direct result of the development.

Based on the potential water demand of existing erven in the Withoogte bulk water system that have development rights, the Withoogte WTP has insufficient spare capacity available to accommodate the proposed development. The development can therefore only be accommodated in the existing system if the capacity of the Withoogte WTP is increased, or alternatively if the deficit in treatment capacity is provided from an alternative source such as the existing groundwater sources.

The recorded raw water abstraction during the 2024/25 financial year from the Berg River for the Withoogte system was 17 570 ML, which is less than the current allocation for the system of 23 440 ML/a.

We trust that you find this of value.

Yours sincerely,

GLS CONSULTING (PTY) LTD
REG. NO.: 2007/003039/07

Per: PC DU PLESSIS

cc. Vaalplaas DevCo
66 Kompas Street
Paternoster
7381

Attention: Mr Louren du Plooy

5 February 2026

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Attention: Mr Louren du Plooy

Dear Sir,

**PROPOSED RESIDENTIAL DEVELOPMENT ON PORTIONS 17 & 20 OF FARM 23, PATERNOSTER:
CAPACITY ANALYSIS OF THE BULK WATER & SEWER SERVICES**

Your request regarding comments on the bulk water and sewer supply for the proposed development of a hotel on portion 17 of Farm 23 and a residential development portion 20 of Farm 23, located in Paternoster, refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for Saldanha Bay Municipality (SBM)), dated June 2024 and the Sewer Master Plan dated June 2024.

The proposed development on portion 20 was conceptually taken into consideration as part of future development area P4 in the June 2024 master plans for the Paternoster water and sewer networks. Development on portion 17 was not taken into consideration in the June 2024 master plans.

1. WATER DISTRIBUTION SYSTEM

1.1 Distribution zone

The water master plan indicated that the proposed development areas should be accommodated in the existing Paternoster reservoir water distribution zone. The connections to the existing water system should be made to the existing 200 mm Ø pipe in Mosselbank Street for portion 17, and to the existing 150 mm Ø pipe in Saint Augustine Road for portion 20, as shown in Figure 1 attached.

The proposed development is situated inside the water priority area.

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1.2 Water demand

The original water analysis for the master plan was performed with a total annual average daily demand (AADD) of 1,6 kL/d for portion 17 of Farm 23 and 1,6 kL/d for portion 20 of Farm 23.

For this re-analysis, the AADD and fire flow for the proposed development were calculated as follows:

- Farm 23/17:
 - Hotel (62 units @ 0,3 kL/d/unit ⁽¹⁾) = 18,6 kL/d
 - 626 m² Restaurant area @ 0,65 kL/d/100 m² ⁽¹⁾ = 4,1 kL/d
 - Sub-total = 22,7 kL/d
- Farm 23/20:
 - 33 Residential units @ 0,45 kL/d/unit ⁽¹⁾ = 14,9 kL/d
- Total = 37,6 kL/d
- Fire flow criteria (Moderate risk 2) ⁽¹⁾ = 25 L/s @ 10 m

⁽¹⁾ As per Tables J.2, J.4 & J.17 from Section J - Water Supply of "The Neighbourhood Planning and Design Guide" (so called "Red book").

1.3 Present situation

1.3.1 Reticulation network

The existing water reticulation system of the Paternoster reservoir water distribution zone has sufficient capacity to accommodate the proposed development on portion 17 of Farm 23 to comply with the pressure and fire flow criteria as set out in the master plan. Upgrading of the existing 100 mm Ø pipeline in Saint Augustine Road will, however, be required to accommodate the proposed development on portion 20 of Farm 23.

Link services item PRW1.7 will be required to connect portion 20 of Farm 23 to the existing Paternoster reservoir water distribution network, as shown in Figure 1 attached.

Link services:

- PRW1.7 : 120 m x 160 mm Ø Pipe to install R 245 000 *

Notes:

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2025/26 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

The route of the proposed pipeline is schematically shown in Figure 1 attached, but has to be finalised subsequent to a detailed pipeline route investigation.

1.3.2 Bulk supply

The Paternoster reservoirs are supplied with bulk water from the Vredenburg reservoirs in Vredenburg. The existing bulk supply system between Vredenburg and Paternoster has sufficient capacity to accommodate the proposed development.

1.3.3 Reservoir capacity

The criteria for the total reservoir volume used in the Paternoster Water Master Plan is 48 hours of the AADD (of the reservoir supply zone).

In the latest water master plan, the AADD of the Paternoster reservoir is calculated at 778 kL/d.

The storage volume of the existing Paternoster reservoirs is 4 300 kL, which results in a current reservoir storage capacity of 133 hours of the AADD served. There is thus sufficient storage capacity at the Paternoster reservoirs in order to accommodate the proposed developments within the supply area.

1.3.4 WCDM bulk supply

Paternoster is supplied with water from the SBM's Paternoster reservoirs, which in turn are supplied with bulk water from the Vredenburg reservoirs in Vredenburg. The Vredenburg reservoirs are supplied with bulk water from the West Coast District Municipality's (WCDM's) Besaansklop reservoir via the SBM's Vredenburg-Besaansklop pump station (PS) through a 400 mm Ø bulk pipeline. The PS is supplied with bulk water through meter no. WC33/1.

The impact of the proposed development on the existing infrastructure of the WCDM system upstream of meter WC33/1 is discussed in a separate report, addressed to WCDM.

1.4 Implementation of the master plan

The following master plan item will be required to improve network conveyance in the existing Paternoster reticulation system to accommodate the proposed development on Farm 23/20, as shown in Figure 1 attached:

Network upgrades

- PRW1.8 : 160 m x 200 mm Ø Replace existing 110 mm Ø pipe R 417 000 *

Notes:

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2025/26 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

The route of the proposed pipeline is schematically shown in Figure 1 attached, but has to be finalised subsequent to a detailed pipeline route investigation.

1.5 Minimum items required

There is sufficient capacity in the existing water network to accommodate the proposed development on Farm 23/17.

The minimum upgrades required to accommodate the proposed development on Farm 23/20 in the existing water system are link services item PRW1.7 in order to connect Farm 23/20 to the existing Paternoster reservoir water distribution network, and master plan item PRW1.8 to reinforce the existing network.

2. SEWER NETWORK

2.1 Drainage area

Portion 17 of Farm 23 falls within the existing Mosselbank pumping station (PS) drainage area. The recommended sewer connection is to the existing 150 mm Ø outfall sewer in Kiewiet Street. Portion 20 of Farm 23 falls within the existing Paternoster Bulk PS no. 1 drainage area. The recommended sewer connection is to the existing 160 mm Ø outfall sewer in Visvanger Street, as shown in Figure 2 attached.

The development is inside the sewer priority area.

2.2 Sewer flow

The original sewer analysis for the master plan was performed with a total peak day dry weather flow (PDDWF) of 1,3 kL/d for portion 17 of Farm 23 and 1,3 kL/d for portion 20 of Farm 23.

For this re-analysis, the PDDWF for the proposed development was calculated as follows:

• Portion 17 of Farm 23	=	18,2 kL/d
• Portion 20 of Farm 23	=	<u>11,9 kL/d</u>
Total	=	30,1 kL/d

2.3 Present situation

Sewage from the Mosselbank PS drainage area gravitates to the Mosselbank PS from where it is pumped to the Paternoster Bulk PS 1 drainage area through a 110 mm Ø rising main. From Paternoster Bulk PS 1, sewage is pumped to Paternoster Bulk PS 2 through a 100 mm Ø Asbestos Cement (AC) rising main, and from Paternoster Bulk PS 2 directly to the Paternoster Wastewater Treatment Plant (WWTP) through a 250 mm Ø rising main.

The capacities of the Mosselbank and Paternoster Bulk no. 1 pumping stations were indicated in the latest sewer master plan as 5,1 L/s and 10 L/s respectively. The anticipated maximum upstream flows at the Mosselbank and Paternoster Bulk no. 1 pumping stations are 1,3 L/s and 10,5 L/s respectively.

There is thus insufficient capacity at Paternoster Bulk PS 1 to accommodate sewage from the proposed developments.

2.4 Implementation of the master plan

The master plan proposes that Paternoster Bulk PS 1 be upgraded.

The following items are proposed in the June 2024 sewer master plan to improve the capacity of the existing sewer system in order to accommodate the proposed development areas together with other future developments, as indicated in Figure 2 attached:

Network infrastructure

• SPS2.4	: Upgrade existing PS to 30 L/s	R	1 136 000 *
• SPS2.5	: 958 m x 200 mm Ø new rising main	R	<u>1 925 000 *</u>
Total		R	3 061 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2025/26 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

The route of the proposed rising main should be finalised subsequent to a detailed pipeline route investigation.

2.5 Minimum items required

The minimum upgrades required to accommodate the proposed development of Farm 23/17 and Farm 23/20 in the existing Paternoster sewer network are master plan items SPS2.4 and SPS2.5 in order to improve the capacity of the existing sewer system.

3. CONCLUSION

The developer of portions 17 & 20 of Farm 23 in Paternoster may be liable for the payment of a Development Contribution (as calculated by the Saldanha Bay Municipality) for bulk water and sewer infrastructure as per Council Policy.

The water master plan indicated that the proposed development areas should be accommodated in the existing Paternoster reservoir zone. The connections to the existing water system should be made to the existing 200 mm Ø pipe in Mosselbank Street for portion 17 of Farm 23, and to the existing 150 mm Ø pipe in Saint Augustine Road for portion 20 of Farm 23, as shown in Figure 1 attached.

The existing water reticulation system of the Paternoster reservoir water distribution zone has sufficient capacity to accommodate the proposed development on portion 17 of Farm 23 to comply with the pressure and fire flow criteria as set out in the master plan. Link services item PRW1.7 will, however, be required to connect portion 20 of Farm 23 to the existing Paternoster reservoir water distribution network, and master plan item PRW1.8 will be required to replace a 100 mm Ø pipe in Saint Augustine Road in order to accommodate Farm 23/20 in the existing water system.

The Paternoster reservoirs are supplied with bulk water from the Vredenburg reservoirs in Vredenburg. The existing bulk supply system between Vredenburg and Paternoster has sufficient capacity to accommodate the proposed development.

The existing Paternoster reservoirs have sufficient spare capacity to accommodate the proposed development.

The existing Paternoster sewer reticulation system has insufficient capacity in order to accommodate the proposed development in the existing sewer system.

The minimum upgrades required to accommodate the proposed development areas on portions 17 & 20 of Farm 23 in the existing Paternoster sewer network are master plan items SPS2.4 and SPS2.5 in order to improve the capacity of the existing sewer system.

We trust that you find this of value.

Yours sincerely,

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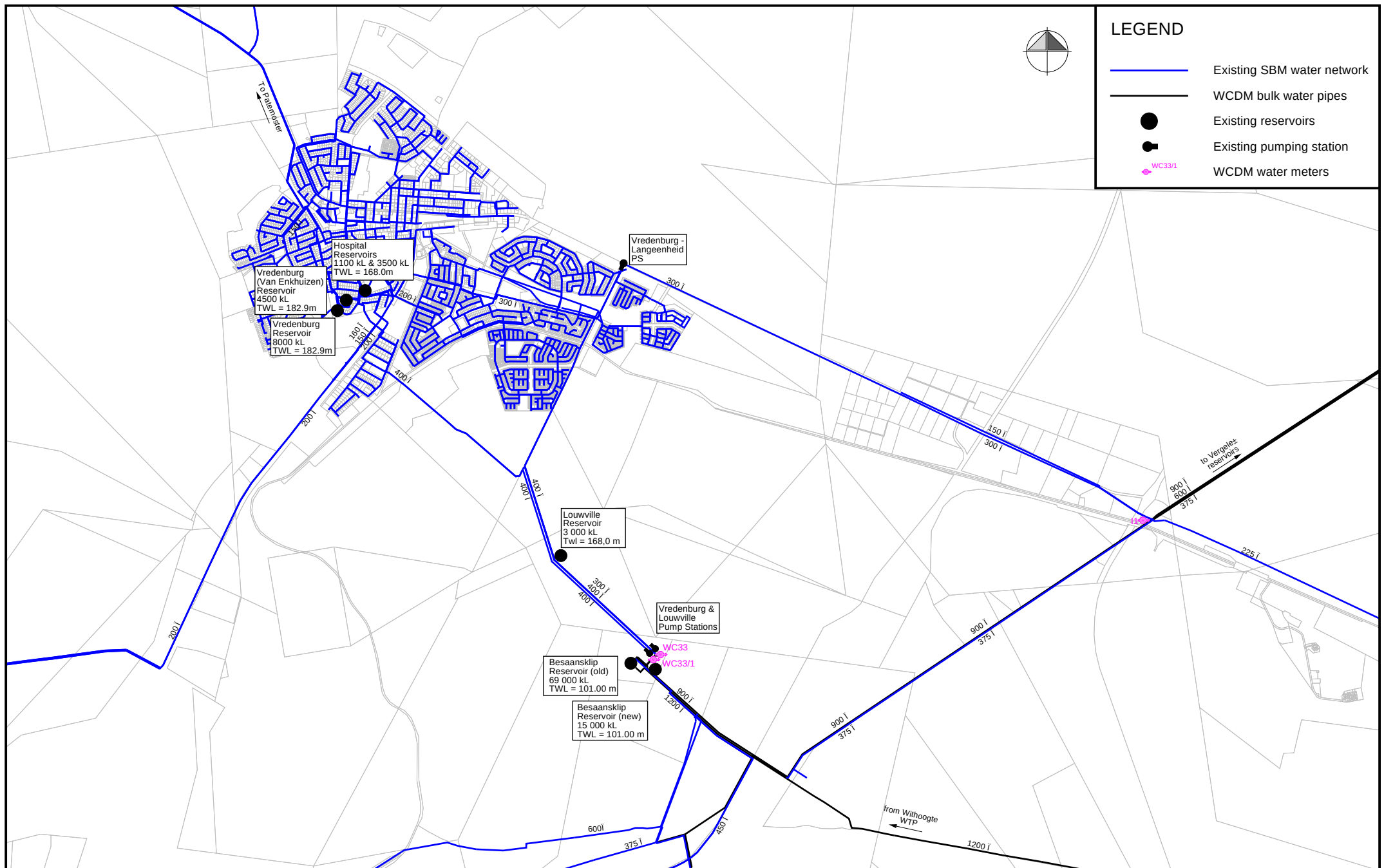


Per: PC DU PLESSIS

cc. The Director: Technical Engineering Services
Saldanha Bay Municipality
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Attention: Mr Gavin Williams





LEGEND

- Existing SBM water network
- WCDM bulk water pipes
- Existing reservoirs
- Existing pumping station
- WCDM water meters



February 2026

Paternoster - Proposed development of PTN 17 & 20 of Farm 23



Figure 1
Proposed Development
PTN 17 & 20 of Farm 23 - Paternoster
Location Plan

