



21 February 2019

The Director: Technical Engineering Services
Saldanha Bay Municipality
Private Bag X12
Vredenburg
7380

Attention: Mr Gavin Williams

Dear Sir

DEVELOPMENT ON ERF 7752 & PORTION OF ERF 1003, VREDENBURG: CAPACITY ANALYSIS OF THE BULK WATER & SEWER SERVICES

The request by Mr Jean de Klerk of iX Engineers regarding comments on the bulk water and sewer supply to the proposed development (residential development on Erf 7752 & a portion of Erf 1003, Vredenburg) refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for the Saldanha Bay Municipality) dated January 2012 and the Sewer Master Plan dated January 2012.

The proposed development area was not taken into consideration for the January 2012 master plans for the water and sewer networks.

GLS is currently in the process of updating the January 2012 water and sewer master plans for the SBM and therefore the reinforcements to the existing water and sewer systems as proposed in this document will form part of the updated water and sewer master plans.

1. WATER DISTRIBUTION SYSTEM

1.1 *Distribution zone*

It is proposed in the Water Master Plan for Vredenburg that the proposed development area should be accommodated in the existing Louwville Big PRV zone. The connection to the existing system should be made to the existing 150 mm diameter pipe in Kooitjieskloof Street, as shown on Figure 1 attached.

The development is situated inside the water priority area.

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1.2 Water demand

The original water analysis for the master plan did not take the proposed development into account.

For this re-analysis, the total annual average daily water demand (AADD) and fire flows for the proposed development was calculated as follows:

- 154 Single residential erven @ 0,5 kl/day/unit = 77,0 kl/d
- Fire flow criteria (Moderate risk) = 25 l/s @ 7 m

1.3. Present situation

1.3.1 Bulk infrastructure

The existing bulk infrastructure supplying bulk water to the Louville reservoir has sufficient capacity to accommodate the proposed development.

1.3.2 Reticulation system

The existing water reticulation network of the Louville Big PRV zone has sufficient capacity to accommodate the proposed development.

In the Water Master Plan network reinforcements are however proposed within the existing Hospital PRV zone (to the west of the proposed development) and within the existing Louville Big PRV zone (to the north of the development) and it is recommended that these master plan items are implemented as part of the development in order to improve network conveyance and redundancy within these networks.

1.3.3 Reservoir capacity

The existing 3,0 Ml Louville reservoir (which supplies water to the Louville Big PRV zone) has sufficient reservoir storage capacity available to accommodate the proposed development.

1.4 Implementation of the master plan

The following master plan items are proposed in the Water Master Plan to improve network conveyance and redundancy within the existing Hospital and Louville Big PRV zones:

Network upgrade:

- | | | | |
|-----------|---|-------|---------------|
| • VBW2.4a | : 15 m x 160 mm Ø inter-connection pipe | = R | 53 000 * |
| • VBW2.4b | : 15 m x 160 mm Ø inter-connection pipe | = R | 53 000 * |
| | | Total | = R 106 000 * |

Notes:

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2018/19 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

The routes of the proposed inter-connection pipes are schematically shown on Figure 1, but have to be finalised subsequent to detail investigations regarding the positions of the existing zone valves.

2. SEWER NETWORK

2.1 *Drainage area*

The development falls within the existing Vredenburg gravity drainage area. The recommended position for the sewer connection for proposed development is at the existing 450 mm Ø outfall sewer in Kooitjieskloof Street, as shown on Figure 2 attached.

The development is inside the sewer priority area.

2.2 *Sewer flow*

The proposed development was not taken into consideration as part of the original sewer master plan.

For this re-analysis, the peak daily dry weather flow (PDDWF) for the proposed development was calculated as 53,9 kℓ/d.

2.3 *Present situation*

The existing bulk sewer reticulation system between the proposed development and the Vredenburg Wastewater Treatment Works (WWTW) has sufficient capacity to accommodate the proposed development in the present system.

It has however been indicated that the existing bulk sewer running through the development area will need to be relayed to accommodate the proposed development.

3. CONCLUSION

The developer of Erf 7752 & a portion of Erf 1003 in Vredenburg may be liable for the payment of a Development Contribution (as calculated by the Saldanha Municipality) for bulk water and sewer infrastructure as per Council Policy.

There is sufficient capacity in the existing water network to accommodate the proposed development.

It is however recommended that master plan items VBW2.4a & VBW2.4b are implemented in order to improve network redundancy and conveyance within the existing Hospital PRV (to the west of the proposed development) and Louwville Big PRV (to the north of the development) zones.

There is sufficient capacity in the existing Vredenburg bulk sewer system to accommodate the proposed development within the existing system.

We trust that you find this of value.

Yours sincerely

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Per: PC DU PLESSIS

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