

5 April 2024

The Director : Civil Engineering Services  
Overstrand Municipality  
P. O. Box 20  
HERMANUS  
7200

**Attention: Mr Dennis Hendriks**

Dear Sir,

## **PROPOSED RESIDENTIAL DEVELOPMENT OF ERF 1735, SANDBAAI: CAPACITY ANALYSIS OF THE BULK WATER SERVICE**

The request by Mr Thian Jansen of WRAP for GLS Consulting (Pty) Ltd to investigate and comment on the bulk water supply of the proposed development (residential development on Erf 1735 in Sandbaai), refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for the Overstrand Municipality) dated June 2021.

The proposed development was not taken into consideration for the June 2021 master plan for the water network.

### **1 WATER DISTRIBUTION SYSTEM**

#### *1.1 Distribution zone*

The master planning indicated that development on Erf 1735 should be accommodated within the existing Sandbaai reservoir zone. The proposed connection to the existing Sandbaai water system for the development can be made to the existing 100 mm Ø water pipe in Endstraat, as shown in 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 was performed with a total annual average daily demand (AADD) for Erf 1075 of 1,3 kL/d.

For this re-analysis of the water master plan, the AADD and fire flows for the proposed development were calculated as follows:

•	56 x 1 bedroom units @ 0,25 kL/d/unit <sup>(1)</sup>	=	14,0 kL/d
•	80 x 2 bedroom units @ 0,30 kL/d/unit <sup>(1)</sup>	=	24,0 kL/d
•	12 x 3 bedroom units @ 0,35 kL/d/unit <sup>(1)</sup>	=	<u>4,2 kL/d</u>
	<b>Total</b>	=	<b>42,2 kL/d</b>

<sup>(1)</sup> As per Table J.2 from Section J – Water Supply of “The Neighbourhood Planning and Design Guide” (So called “Red book”)

•	Fire flow criteria (Moderate risk)	=	25 L/s @ 10 m
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## 1.3 Present situation

### 1.3.1 Reticulation network

The existing water network has sufficient capacity to accommodate the proposed development of Erf 1735 in Sandbaai.

### 1.3.2 Bulk supply

The 150 mm Ø bulk supply pipeline from the Hermanus bulk supply system to the Sandbaai reservoir is currently under pressure during the holiday season (flow velocity > 1,6 m/s during peak demand conditions) and requires upgrading in the near future. The hydraulic capacity of this pipeline is however sufficient to accommodate the development in the existing system and it is recommended that the development of Erf 1735 can be approved without upgrading of this pipeline.

### 1.3.3 Reservoir capacity

The criteria for the total reservoir volume used in the Overstrand Water Master Plan is 48 hours of the AADD (of the reservoir supply zone). The existing Sandbaai reservoir has a current storage capacity of approximately 47,7 hours of the total AADD of the reservoir zone.

With full development of the proposed development on Erf 1735 accommodated within the existing system, the reservoir storage capacity decreases to 46,0 hours of the total AADD supplied.

This is below the required 48 hours x AADD supply and additional storage capacity should be provided in the near future at the Sandbaai reservoir site.

It is however recommended that the development of Erf 1735 can be approved prior to the construction of additional storage capacity for Sandbaai as the storage capacity is only marginally below 48 hours x AADD supplied, and the storage reservoir is close to the water source, i.e. the Preekstoel Water Treatment Plant (WTP).



## 2 CONCLUSION

The developer of Erf 1735 in Sandbaai may be liable for the payment of a Development Contribution (DC) payment (as calculated by the Overstrand Municipality) for bulk water infrastructure as per Council Policy.

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

We trust that you find this of value.

Yours sincerely

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

A handwritten signature in black ink that reads 'PC Du Plessis'.

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Per: PC DU PLESSIS

cc. WRAP  
35 Duiker Street  
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7200

Attention: Mr Thian Jansen