ANNEXURE E16: CONFIRMATION OF ALL SERVICES (WATER, ELECTRICITY, SEWAGE, SOLID WASTE MANAGEMENT)

SALDANHA BAAI BAY
MUNISIPALITEIT | MUNICIPALITY | uMASIPALA

REF NO:
16/5/1/R

ENQUIRIES:
David Wright
Snr Manager: Solid Waste

To whom it may concern,

ENGINEERING AND PLANNING SERVICES: SOLID WASTE MANAGEMENT: CONFIRMATION OF CAPACITY SOLID WASTE COLLECTIONS AND DISPOSAL: PATERNOSTER FARM 1259 AND ERVEN 583, 1613, 1751, 1752 AND 1753: PROPOSED TOURIST COMPLEX.

Your recent query regarding the solid waste capacity for the proposed redevelopment of the aquaculture facility and surrounding erven into a tourist complex on the remaining extent of Farm 1259 and erven 583, 1613, 1751, 1752 and 1753 Paternoster has reference.

I hereby confirm that the necessary available landfill airspace exists to accept and dispose of general solid waste for the proposed development.

Please note that no hazardous waste will be accommodated at Saldanha Bay Municipalities waste management facilities or within collection receptacles.

Should you require additional information please contact me on 022 701 6988 or David.wright@sbm.gov.za

Yours sincerely,

…… 04-11-2024

D WRIGHT **DATE**
SNR MANAGER SOLID WASTE AND BULK WATER SUPPLY

/dw

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City of Excellence and Opportunity on the "Weskus"

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REF NO: 16/1/R

ENQUIRIES: G Williams
022 701 7047

13 August 2024

UDS Africa
9 Electron Road
Techno Park
Stellenbosch
7600

Dear Ruan Siebrits

ENGINEERING AND PLANNING SERVICES: WATER AND SANITATION: CONFIRMATION OF CAPACITY BULK WATER AND SEWER: PATERNOSTER FARM 1259 AND ERVEN 583,1613,1751,1752 AND 1753 : PROPOSED TOURIST COMPLEX

Your recent query regarding the bulk water and sewer capacity for the proposed redevelopment of the aquaculture facility and surrounding erven into a tourist complex on the remaining extent of Farm 1259 and erven 583,1613,1751,1752 and 1753 Paternoster has reference.

I hereby confirm that there is sufficient spare unallocated Bulk Water and Sewer capacity to service the proposed development.

Should you require additional information please contact G Williams 022 701 7113.

Yours sincerely,

.....
MUNICIPAL MANAGER
/gw

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27 September 2021

UDS Africa
V&A Waterfront
Cape Town
PO Box 50487
8002

Attention: Mr Cobus Louw

Dear Sir,

PROPOSED MIXED-USE DEVELOPMENT ON ERVEN 1605-1610, 1613, 1751-1753 & FARM 1259, PATERNOSTER: CAPACITY ANALYSIS OF THE BULK WATER AND SEWER SERVICES

The request by Cobus Louw of UDS Africa regarding comments on the bulk water supply and sewer discharge of the proposed development (mixed-use development on erven 1605-1610, 1613, 1751-1753 & Farm 1259, Paternoster) refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for the Saldanha Bay Municipality (SBM)) dated June 2019 and the Sewer Master Plan dated June 2019.

The proposed development was not taken into consideration for the June 2019 master plans for the water and sewer networks.

1. WATER DISTRIBUTION SYSTEM

1.1 Distribution zone

The water master plan indicated that the proposed development should be accommodated in the existing Paternoster reservoir zone. The connection to the existing water system should be made to the existing 110 mm Ø pipe in Bietou Street, as shown on Figure 1 attached.

The development is situated inside the water priority area.

1.2 Water demand

No allowance was made for additional development on erven 1605-1610, 1613, 1751-1753 & Farm 1259 in the original water analysis for the master plan.

For this re-analysis of the water master plan, the total annual average daily demand (AADD) of the proposed development was calculated according to the latest site development plan (dated June 2021, provided by UDS Africa) and the fire flow criteria was classified accordingly:

- 63 Flats @ 0,45 kL/d = 28,4 kL/d
- 2 209m^2 Hotel @ 0,9 kL/d/100m^2 = 19,9 kL/d
- 3 388m^2 Institutional @ 0,4 kL/d/100m^2 = 13,6 kL/d
- 4 684m^2 Business/commercial @ 0,4 kL/d/100m^2 = 18,7 kL/d
- 602 m^2 Industrial @ 0,4 kL/d/100m^2 = 2,4 kL/d

Total = 83,0 kL/d

- Fire flow criteria (Moderate risk 1) = 25 L/s @ 10 m

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Directors: HA Baartman, AG Hingeston

1.3. Present situation

1.3.1 Reticulation network

The existing water reticulation system of Paternoster is supplied by the Paternoster reservoir from a Top Water Level (T.W.L.) of 46,5 metres above mean sea level (m.a.s.l.) via a 200 mm Ø supply pipe. From the 200 mm Ø supply pipe from the reservoir the proposed development area is supplied with water through 75 mm Ø and 100 mm Ø reticulation pipes. The existing Paternoster reservoir water reticulation network has sufficient capacity in order to supply the domestic water demand the proposed development.

The hydraulic water analysis however indicated that the existing network can only provide a maximum fire flow of 20 L/s @ 10 m at the proposed connection point. In order to provide fire flow in excess of the 25 L/s @ 10m fire flow criteria, the Paternoster water reticulation network should be upgraded as per Figure 1 attached.

Alternatively, on-site storage for fire flow conditions should be provided.

1.3.2 Bulk supply

The existing bulk supply system from Vredenburg supplying bulk water to Paternoster has recently been upgraded and 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).

The capacity of the existing Paternoster reservoirs is 4 300 kL. According to the water master plan the AADD of the Paternoster reservoir water distribution zone is currently approximately 650 kL/d (based on the 2019 Water Master Plan water figures), which results in a current reservoir storage capacity of approximately **160** hours of the AADD.

There is therefore sufficient capacity in the existing Paternoster reservoir to accommodate the proposed development.

2. SEWER NETWORK

2.1 Drainage area

The master plan indicated that the proposed development should be accommodated within the existing Begraafplaas PS drainage area. The proposed sewer connection for the proposed development is to the existing 160 mm Ø gravity sewer running parallel to Sonkwas Street, as shown on Figure 2 attached.

The development is inside the sewer priority area.

2.2 Sewer flow

No allowance was made for the proposed development on erven 1605-1610, 1613, 1751-1753 & Farm 1259 in the original sewer analysis of the master plan.

For this re-analysis, the peak daily dry weather flow (PDDWF) for the proposed development was calculated as 58,1 kL/d.

2.3 Present situation

2.3.1 Gravity sewers

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

The following gravity sewers have insufficient capacity to accommodate the proposed development and should be upgraded according to the sewer master plan:

- A short section of 110 mm Ø sewer outfall downstream of the Begraafplaas PS
- The existing 160 mm Ø outfall sewer in St Augustine Street gravitating towards the Paternoster Main PS

The capacity of the existing 160 mm Ø outfall sewer in St Augustine Street gravitating towards the Paternoster Main PS is directly influenced by the duty points of the respective upstream pumping stations (Begraafplaas PS, Fabriek PS, Die Kom PS1 & the Hotel PS) and the slope of the existing outfall sewer.

It is proposed that the capacities of the upstream Begraafplaas PS of 4 L/s, the Fabriek PS of 2 L/s, Die Kom PS1 of 5 L/s and the Hotel PS of 3 L/s, and the slope of the abovementioned outfall sewer are verified by SBM in order to confirm the sewer flows and existing capacity used in the sewer master plan.

2.3.2 *Pumping stations & rising mains*

Begraafplaas PS:

The existing Begraafplaas PS and accompanying 75 mm Ø rising main have insufficient capacity in order to accommodate the proposed development and should be upgraded to a capacity of 7 L/s and a diameter of 110 mm Ø respectively in order to accommodate the proposed development within the existing Paternoster sewer system.

Paternoster Main PS:

The existing Paternoster Main PS and accompanying 250 mm diameter rising main have sufficient capacity to accommodate the proposed development.

2.4 Implementation of the master plan

The following master plan items will be required in order to accommodate the proposed development together with other future development areas.

Network upgrade

• SPS3.1	: Upgrade existing Begraafplaas PS to 7 L/s	= R	440 000 *
• SPS3.2	: 270 m x 110 mm Ø replace existing 75 mm Ø rising main	= R	310 000 *
• SPS2.1	: 470 m x 315 mm Ø upgrade existing gravity sewer	= R	1 650 000 *
• SPS2.3	: 90 m x 160 mm Ø upgrade existing gravity sewer	= R	290 000 *
	Total	= R	1 940 000 *

Notes:

- (* Including P & G, Contingencies and Fees, but excluding VAT – Year 2020/21 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

- Take note that the routes of the proposed outfall sewers & rising main are schematically shown on Figure 2 attached, but have to be finalised subsequent to detail pipeline route investigations.

2.5 Alternative solution

An alternative connection point for the proposed development is at the existing Fabriek PS. For this scenario the Fabriek PS and accompanying rising main should be upgraded to 7 L/s and 110 mm Ø respectively and the existing 110 mm Ø outfall sewer in St Augustine Street (from Kreefte to Sampson Streets) should be upgraded to a 160 mm Ø outfall sewer.

In the sewer master plan for Paternoster provision is however made for potential developments within the existing Begraafplaas PS drainage area (Future areas P1 and P8) and accommodation of the proposed development within the Begraafplaas PS drainage area (and the accompanying reinforcements to the Begraafplaas PS and downstream infrastructure) will be in line with the sewer master plan for the larger area.

It is therefore recommended that the connection for the proposed development is made to the existing reticulation network of the Begraafplaas PS drainage area.

2.6 Minimum items required

The minimum items required in order to accommodate the proposed development area within the existing Paternoster sewer system are master plan items SPS2.1, SPS2.3, SPS3.1 & SPS3.2.

3. CONCLUSION

The developer of erven 1605-1610, 1613, 1751-1753 & Farm 1259 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 existing Paternoster reservoir water reticulation network has sufficient capacity in order to supply the domestic water demand of the proposed development. Upgrading of the existing 75 mm Ø and 100 mm Ø reticulation pipes will however be required if a fire flow of more than 25 L/s is required for the development.

The existing bulk supply system from Vredenburg to Paternoster and the existing Paternoster reservoirs have sufficient 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 items required in order to accommodate the proposed development area within the existing Paternoster sewer system are master plan items SPS2.1, SPS2.3, SPS3.1 & SPS3.2.

We trust that you find this of value.

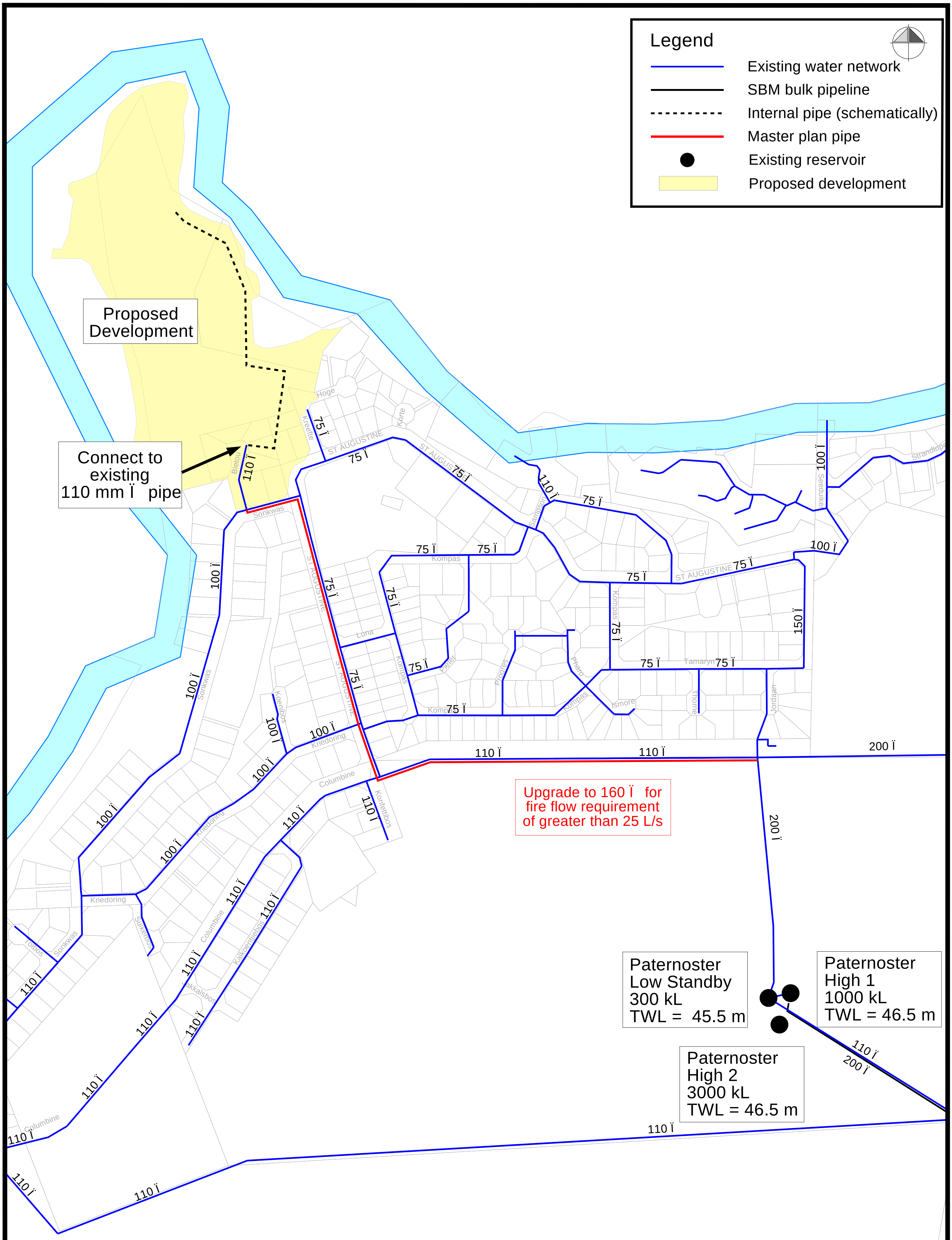
Yours sincerely,

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

_____
Per: PC DU PLESSIS

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

Attention: Mr Gavin Williams



September 2021

Paternoster - Development on erven 1605 -1610, 1613, 1751-1753 & Farm 1259

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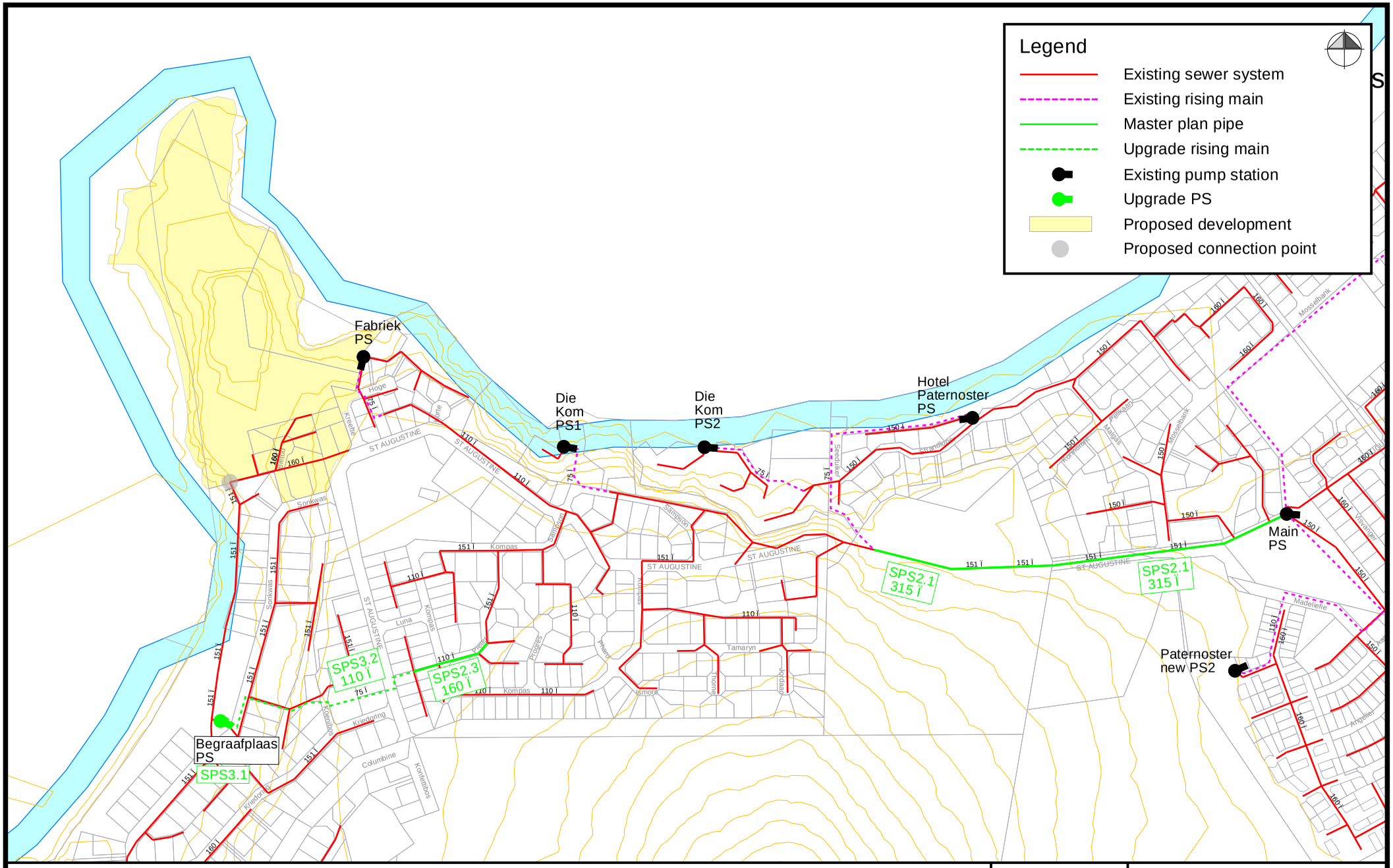
Figure 1

Proposed development
Groepbelange Properties
Existing water system



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Paternoster - Development on erven 1605 -1610, 1613, 1751-1753 & Farm 1259

Figure 2

Proposed development
Groepbelange Properties
Existing sewer system