**Revision 1**

29 November 2023

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

**Attention: Mr Dennis Hendriks**

Dear Sir,

**DEVELOPMENT OF ERF 1446, VERMONT: CAPACITY ANALYSIS OF THE BULK WATER AND SEWER SERVICES**

The request by Mr Richard Kotzé of WRAP regarding comments on the bulk water and sewer supply to the proposed development (residential development on Erf 1446, Vermont), refers.

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

Future development area GH8.3, which included the proposed development area on Erf 1446, was conceptionally taken into consideration for the June 2021 master plans for the water and sewer networks.

## 1. WATER DISTRIBUTION SYSTEM

### 1.1 *Distribution zone*

It is proposed that the development area is accommodated within the existing Vermont reservoir zone. The connection to the existing reticulation system should be made to the existing 200 mm Ø pipe in Lynx Road east of Erf 1446, as shown in Figure 1 attached.

A second connection can also be made to the internal infrastructure on the adjacent Erf 1447 as indicated on Figure 1. No as-built information was however available of the existing water infrastructure on Erf 1447.

### 1.2 *Water demand*

The original water analysis for the master plan was performed with a total annual average daily demand (AADD) for development on Erf 1446 (a portion of future area GH8.3 in the June 2021 master plan) of 27,0 kL/d.

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

- 31 Single Residential units @ 0,6 kL/d/unit [(1)] = 18,6 kL/d
- Fire flow criteria (Low risk) = 15 L/s @ 7 m

[(1)] As per Table J.2 from Section J - Water Supply of "The Neighbourhood Planning and Design Guide" (so called "Red book").

1.3 *Present situation*

1.3.1 *Network conveyance*

The existing Vermont reservoir network has sufficient capacity to accommodate the proposed development on Erf 1446.

It should however be noted that provision is made in the water master plan for a future 160 mm Ø supply pipeline (master plan item GH5.2) along the northern boundary of Erf 1446 to supply water in future to the proposed future development area GH6.1 to the west of Erf 1446, as indicated on Figure1.

Provision should be made for a pipeline servitude (in favour of Overstrand Municipality) to accommodate this pipeline in future when this area develops.

1.3.2 *Bulk supply system*

The existing bulk supply system from the Preekstoel Water Treatment Plant (WTP) to the Vermont reservoirs has sufficient capacity to accommodate the proposed development.

1.3.3 *Reservoir capacity*

There is sufficient reservoir storage capacity in the existing Vermont reservoirs to accommodate the proposed development.

## 2. SEWER NETWORK

2.1 *Drainage area*

The development on Erf 1446 should be accommodated within the existing Onrus Main pumping station (PS) drainage area.

The proposed connection point to the existing sewer system is to the newly constructed 200 mm Ø outfall sewer in on the corner of Malmok Crescent and Lynx Road, as shown on Figure 2 attached.

The development is inside the sewer priority area.

2.2 *Sewer flow*

In the original sewer master plan, the peak day dry weather flow (PDDWF) for development on Erf 1446 (a portion of future area GH8.3 in the June 2021 sewer master plan) was calculated at 25,6 kL/d.

For this re-analysis, the PDDWF for the proposed development was calculated as 14,9 kL/d.

2.3 *Present situation*

The existing Onrus Main PS drainage area in Vermont has sufficient capacity to accommodate the proposed development within the existing sewer system, except for a small section of a 110 mm diameter outfall sewer in Malmok Crescent that has not yet been upgraded to a 200 mm diameter pipe.

(The old 110 mm outfall sewer in Malmok Crescent before and after this section of pipe has recently been upgraded to a diameter of 200 mm, as proposed in the June 2021 Sewer Master Plan)

The following link services item will be required to connect the internal sewer reticulation network of the development to the proposed connection point to the existing sewer system on the corner of Malmok Crescent and Lynx Road:

Link services:

- OHS11.13b : 40 m x 200 mm Ø new outfall sewer R 221 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the route of the proposed pipeline is schematically shown on Figure 2 and will have to be finalised after a detail pipeline route investigation has been performed.

It should also be noted that provision is made in the sewer master plan for a future 200 mm Ø outfall sewer (master plan item GHS11.13a) along the northern boundary of Erf 1446 to service future development area GH6.1 to the west of Erf 1446, as indicated on Figure 2.

Provision should be made for a pipeline servitude (in favour of Overstrand Municipality) to accommodate this outfall sewer in future when this area develops.

2.4 *Implementation of the master plan*

The following master plan item will be required to reinforce the existing network of the Onrus Main PS drainage system to accommodate the proposed development together with other future development areas.

Network upgrade

- OHS11.12 : 20 m x 200 mm Ø upgrade existing 110 mm Ø outfall sewer R 165 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the route of the proposed pipeline is schematically shown on Figure 2 and will have to be finalised after a detail pipeline route investigation has been performed.

2.5 *Minimum items required*

The minimum requirements to accommodate the proposed development in the existing sewer system are link services item OHS11.13b to connect the development to the existing Onrus Main PS drainage area and master plan item OHS11.12 to reinforce the existing Onrus Main PS sewer reticulation system.

## 3. CONCLUSION

The developer of Erf 1446 in Vermont may be liable for the payment of a Development Contribution (as calculated by the Overstrand Municipality) for bulk water and sewer infrastructure as per Council Policy.

There is sufficient capacity in the existing water reticulation system to accommodate the proposed development and no network upgrades will be required.

There is sufficient capacity in the existing sewer reticulation system downstream to accommodate the proposed development, except for a small section of a 110 mm diameter outfall sewer in Malmok Crescent that has to be upgraded to a 200 mm diameter outfall sewer.

The minimum requirements to accommodate the proposed development in the existing sewer system are link services item OHS11.13b to connect the development to the existing Onrus Main PS drainage area and master plan item OHS11.12 to reinforce the existing Onrus Main PS sewer reticulation system.

We trust that you find this of value.

Yours sincerely,

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

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Per: PC DU PLESSIS

cc. WRAP
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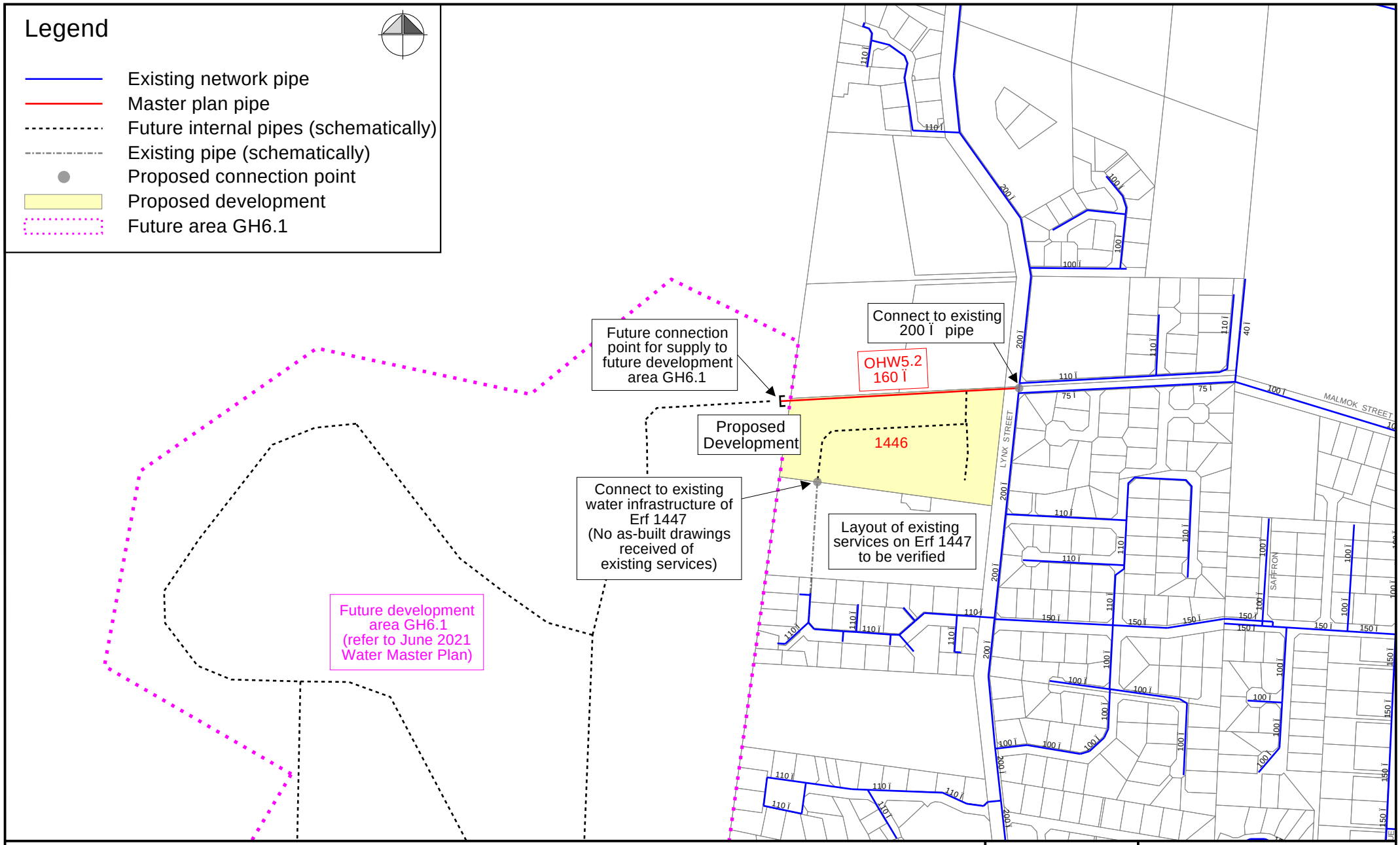
HERMANUS
7200

Attention: Mr Richard Kotzé

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Development of Erf 1446 - Vermont

0 75 150 300 m

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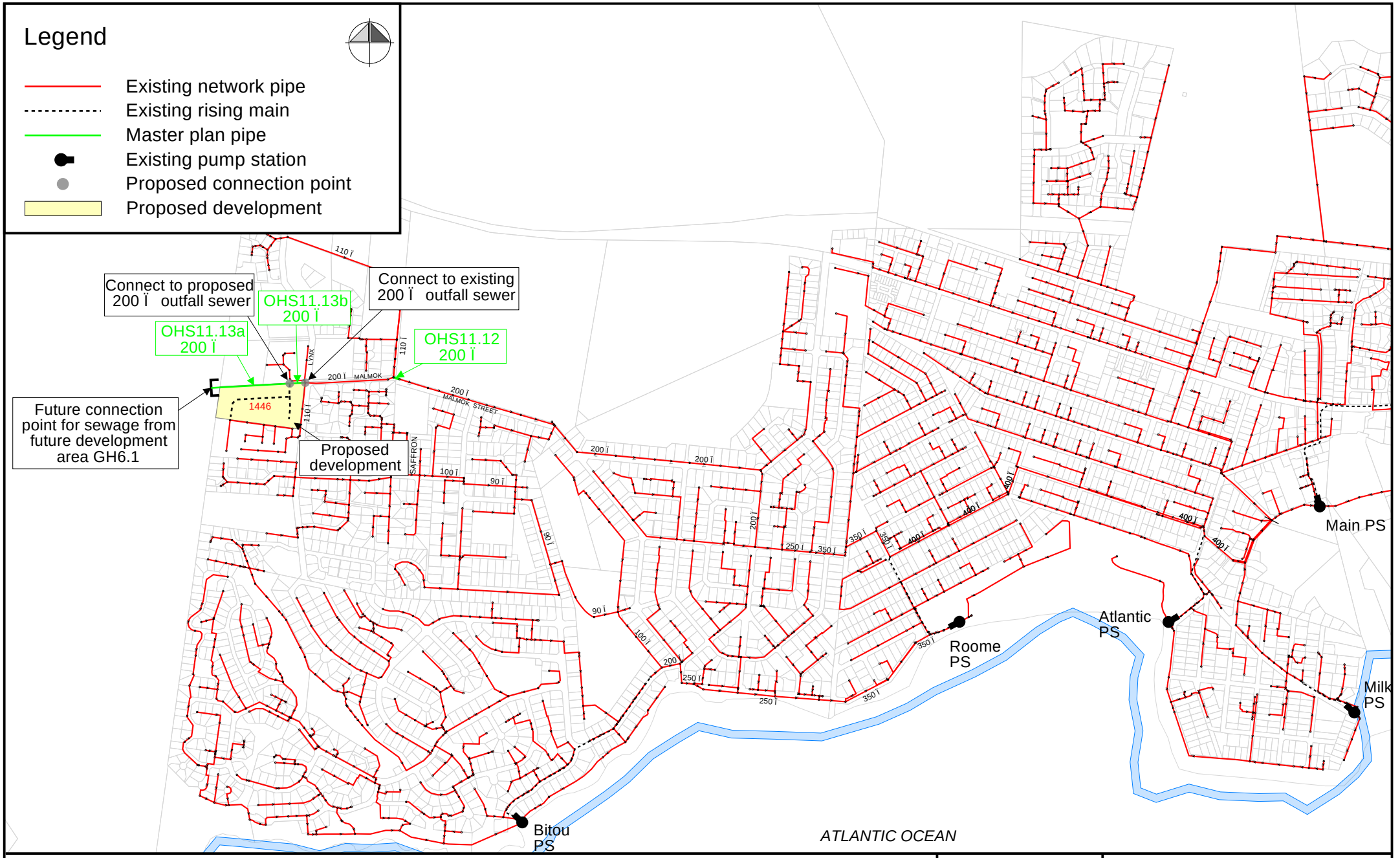
# Figure 1 (Rev.1)

Proposed Development
Vermont - Erf 1446
Existing Water System

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Development of Erf 1446 - Vermont

0 150 300 600 m

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# Figure 2 (Rev.1)

Proposed Development
Vermont - Erf 1446
Sewer Master Plan