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WATER AND SANITATION INFRASTRUCTURE CAPACITY AND DEVELOPMENT CONDITIONS FOR THE DEVELOPMENT OF ERF 149294-RE, CAPE TOWN

Background

Nadeson Consulting Engineers has been appointed determine civil engineering services requirements and to apply for the necessary capacities for the further development on Erf 149294-RE Cape Town. The proposal is to develop 78 000m² of bulk, upon approximately 7 ha of land currently within the V&A Waterfronts existing available bulk rights. Water and sewer reticulation networks within the V&A Waterfront is not managed or maintained by the City of Cape Town, the City only provides connection to the water and sewer from a bulk services perspective.

This letter provides an overview of the existing water and sewer infrastructure near the development, the capacity of both complete systems to service it as well as associated conditions that would apply. The information provided is based on City of Cape Town master plan model as well as comments from relevant branches of the department.

Table 1: Estimated water demand and sewer flow for the proposed development

Description		Potable Water Demand*			Sewer Flow**	
Land Use	Quantity (Area)	Annual Average Daily Demand (kℓ/d)	Peak Flow (ℓ/s) (PF= 3.0)	Fire Flow (ℓ/s)	Annual Average Daily Flow (kℓ/d)	Peak Flow (Dry weather) (ℓ/s) (PF=2.5)
Residential 50 700 m ² Cultural 1 200 m ² Hotel 11 400 m ² Retail/Restaurant 6 200 m ² Retail/Light Industrial 8 500 m ²	78 000 m ²	222	7.7	15.0	211	6.53
Total		222 kℓ/d	7.7 ℓ/s	15.0 ℓ/s	211 kℓ/d	6.53 ℓ/s

Notes:

* Based on a water demand from consultant

** Based on 95% sewer flows according to the design criterion (as per the W&S Tariff Policy)

Water Reticulation

Distribution zone

The proposed development falls within the Molteno water distribution zone.

Present situation

The proposed development will be supplied by a 305 mmØ water main along Beach Road, which has a peak flow and velocity of 12.8 ℓ/s and 0.1 m/s respectively. The peak and static pressure in the area ranges between 80-85m and 85-90m respectively.

The abovementioned water main has sufficient capacity and residual pressure to supply the proposed estimated flow from this development.

The developer is to provide evidence of water saving initiatives that will be incorporated in the development. It should also be noted that the City does not guarantee flow and pressure and therefore the relevant official in the Water Inspectorate official may need to confirm the need for onsite storage to meet fire requirements based on the nature of the development.

Refer to figure 1 attached for existing water network.

Bulk Water

No infrastructure under the control of the City of Cape Town's Bulk Water Branch exists in the immediate vicinity of the proposed development shown in the application.

The City of Cape Town's bulk supply system has sufficient water resource, treatment, bulk storage and conveyance capacity to supply the estimated annual average daily demand of **222 kℓ/d** of the proposed development.

Sewer Reticulation

Drainage area

The proposed development falls in the catchment of Green Point Outfall.

Present situation

In Beach Road is a 300 mmØ and a 500 mmØ sewer main which gravitates to the Green Point Marine Outfall. The Waterfront Main pump station (private) pumps into the 500 mmØ main. There is sufficient relative spare capacity in the existing mains and subsequent downstream sewer network to accommodate the proposed development.

Refer to figure 2 attached for existing sewer network.

Wastewater treatment

The anticipated wastewater flow from the proposed development has been calculated to be **211 kℓ/d**.

This proposed development is situated within the catchment of the Green Point Marine Outfall. This outfall works has sufficient unallocated capacity to accommodate additional development.

Conclusion

The existing water distribution and sewer conveyance network has sufficient capacity to accommodate the development.

Conditions

The Water and Sanitation Department supports the proposed application provided the following conditions implemented:

1. The developer at his cost provides all internal and all external link civil engineering services required, to the satisfaction of Council prior to construction of the development.
2. Detailed Civil Engineering Services plans to be submitted to the Engineer for approval. All services to comply with the "Minimum Standards of Civil Engineering Services in Townships (as amended) document".
3. Before commencement of construction, all way leave applications should be in place and approved.

4. All new services and connections to be constructed and inspected by Council on completion before and occupation certificate will be issued.
5. The developer be responsible for the payment of the development contributions for bulk civil engineering services, if any, as determined annually by Council.
6. All internal services are private and will not be taken over by The City of Cape Town.
7. The developer will have to show evidence of water saving measure in the development.
8. Any upgrades/ deviations/ extensions of the sewer connection/ reticulation will be for the cost of the developer.
9. The existing sewer connection is to remain and be utilised.
10. If a new sewer connection is required, an application including a detailed design for the connection must be submitted to SewConn.AthloneR4@capetown.gov.za.
11. No structures will be permitted over the sewer boundary chamber.
12. No stormwater to sewer ingress will be permitted.

Technical Requirements

13. The water and sewer capacities allocated according to this document shall not be reserved if not taken up before the lesser of 5 years or the approved development period.
14. Water and Sanitation municipal service designs to be designed according to Departmental Service Standards and be approved prior to construction. These standards can be obtained on the City of Cape Town Website.

General/ Disclaimer

Information provided is based on best available data. The infrastructure as-built information referred to and used in the hydraulic models are based on the GIS asset records, while modelled pressures, flows, velocities, capacities and volumes are based on hydraulic models of current land use and demands. Where appropriate, future land use and demands are considered and the impact of a development compared to that currently planned for the same land and surroundings.

Yours faithfully

On behalf of

Zolile Basholo

DIRECTOR: TECHNICAL SERVICES, WATER AND SANITATION DIRECTORATE
