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WATER AND SANITATION SERVICES COMMENT FOR THE PROPOSED DEVELOPMENT OF AN AFFORDABLE HOUSING PROJECT ON ERF 3303 AND 3304: MANDALAY- IKWEZI PARK

Background

Application is made by the consultants at Inani Infrastructure to perform a capacity check on the water and sewer infrastructure servicing erf 3303 and 3304, Mandalay. The development will consist of 18 retail units and 720 residential units with a three storey walk up (4 storeys high).

This letter provides an indication to the land use intention, if any, pertaining to the Department of Water and Sanitation, as well as providing an overview of the existing water and sewer infrastructure near the development and associated conditions with respect to this application.

See figure 1 for locality map.

Table 1.1: Estimated water and sewer requirements for the proposed development

Description		Potable Water Demand			Sewer Flow	
	Units	Total AADD (kl/d)	Peak Flow (l/s) (PF=3.6)	Fire Flow (l/s)	Total ADWF (kl/d)*	Peak Flow (Dry weather) (l/s) (PF=3.5)
Erf 3303 & 3304 (Residential)	720	345.6	14.40	100	241.92	9.80
Erf 3303 & 3304 (Retail)	18	7.20	0.3	100	5.04	0.2
Total		352.80	14.70		246.96	10

*consultants figures

Water Reticulation

The property is situated in the Mitchells Plain PRV water distribution zone. There is a 110mmØ water main in Red Alder Crescent (closer to Erf 3303) with sufficient capacity to supply water to the proposed development- but at very low pressures. The as built indicating a 160mmØ water main in Wild Pepper Tree Close (on the western boundary of erf 3304) to be confirmed. According to the model, the pressure in Red Alder Crescent is approximately 30m but

The peak pressure in the main drops to 17.2m (theoretically) which will not be sufficient pressure for the water to reach the top floors of this development. The low pressure may not meet the fire requirements of the development

An on-site pressure test must be performed to confirm pressures and location of water mains.

The developer is required to incorporate water saving measures wherever possible, which will assist in lowering peak demands on the system. There may be a need to consider onsite storage and boosting as well as check if the zone pressure settings could be modified.

See Figure 1 for details of the surrounding water network.

Bulk Water

No infrastructure under the control of the City of Cape Town's Bulk Water Branch is affected. The Bulk Water branch is to confirm the availability of water resource, treatment, and bulk storage and conveyance capacity to supply the estimated annual average daily demand of 352.80 kl/d of the proposed development.

It is expected that the bulk water system can accommodate this proposed development, however upon receiving the aforementioned confirmation; this comment may be revised as required.

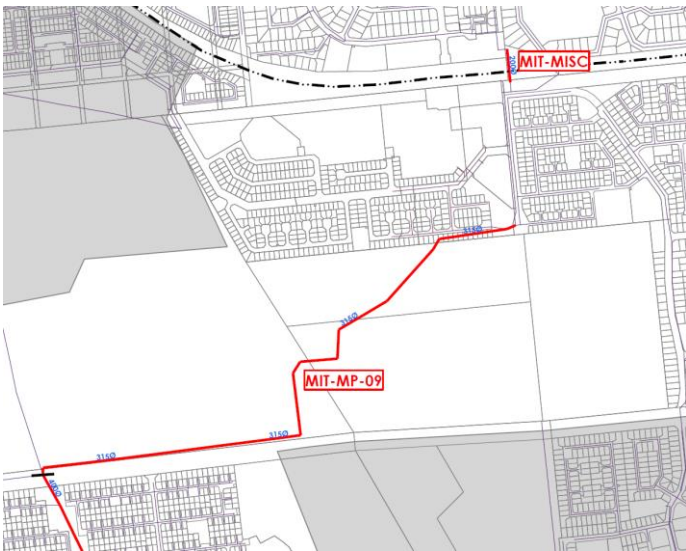
Sewer Reticulation

There is a 160mmØ sewer main located in Red Alder Crescent (to service erf 3303) and a 160mm Ø sewer main in Stinkwood Road (to service erf 3304). This 160 mm main has limited capacity and cannot accommodate this large flow expected from the development.

The nearest major sewer is along Lente Road to the east of the proposed development provided the invert level is low enough to avoid pumping. The capacity is however, limited in this 225mm collector sewer that progressively increases to a 450mm is reflected in our data.

There is an identified master plan item to upgrade the bulk downstream system all the way to the spine Road outfall sewer. This upgrade will progressively increase from 315 mm at the boundary of the development to 600mm just north of the Spine Road Bulk Sewer. See Diagram below for the identified sewer Master Plan item.

Currently the Spine Rd Bulk outfall sewer is being upgraded with a major part of the installation completed.



See Figure 2 for details of the surrounding sanitation network.

Wastewater treatment

This development falls within the Mitchells Plain WwTW Catchment. There is limited capacity at the Mitchells Plain WwTW but can accommodate the 246.96 kl/d from this development.

Conclusion:

The water supply to the development has limited capacity, the pressure and storage of the supply must be addressed for potable and fire conditions. The downstream bulk sewer to the Spine Road outfall will have to be upgraded.

Conditions

The water and sanitation infrastructure can accommodate the development with the following conditions:

1. On site pressure testing needs to be performed,
2. The locations of the water mains (which are not captured on our system yet) need to be located and confirmed. (as built information from reticulation office)
3. Development contributions are payable as per the DC policy, to be quantified by the Reticulation Regional Operations Manager.
4. All costs relating to service connections, alterations to or provision of new water and sewerage services will be for the account of the applicant.
5. The developer is to show the evidence water saving measures that will be put in place.
6. The low supply pressure will have to be addressed to satisfy potable and fire requirements
7. The downstream collector and bulk sewer will have to be upgraded.

Additional Technical Requirements

8. Water and Sanitation municipal service designs to be designed according to Departmental Service Standards and be approved prior to construction.
9. Application must be made for any new water metered connections to the Reticulation Regional Operations Manager.

10. The water and sewer capacities allocated according to this document, if not taken up, shall not be reserved beyond the lesser of 5 years or the approved development period.
11. All infrastructure installations are subject to quality assurance and testing prior to any building occupation.

General/ Disclaimer

1. Information provided is based on best available data.
2. The flows and pressures provided in this comment are theoretical and not measured.

Yours Faithfully

X

On behalf of

ZOLILE BASHOLO

DIRECTOR: WATER & SANITATION, TECHNICAL SERVICES DEPARTMENT