



**PRE-FEASIBILITY REPORT FOR THE
PROVISION OF CIVIL ENGINEERING
WATER SERVICES FOR THE PROPOSED DEVELOPMENT
OF
PROPERTIES IN CATO RIDGE FOR THE CATO RIDGE
DEVELOPMENT COMPANY**

OCTOBER 2022

K&T PROJECT REFERENCE: 20207/ S1

REVISION 0



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Details of this report

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For and on behalf of	
Kantey & Templer (Pty) Ltd	
Approved by:	Kevin Hohls
Signed:	
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Date:	28 October 2022

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1. EXECUTIVE SUMMARY

Kantey & Templer PTY LTD has been appointed by the Cato Ridge Development Company (CRDC) to compile a Pre-Feasibility Engineering Services Report in order to obtain preliminary approval from the service authorities for the proposed bulk service provision for the new Cato Ridge Development. This report documents the Proposed Bulk Sewer Infrastructure to Service the Development.

The greater Cato Ridge area has been considered for a number of years as a major metropolitan industrial growth node within eThekweni as well as fulfilling the role of “back of port” logistics along the N3 [SIP2] logistics corridor between Gauteng and Durban

The proposed development has been programmed to be implemented in 3 Priority Phases which is indicated on the attached drawing in Annexure B

Due to the future road upgrades required and planned upgrade of the bulk trunk water and sewer lines by the eThekweni Municipality in 2031/2032 this proposed development will be unlocked in an incremental approach as follows:-

PRIORITY PHASE 1

Priority Phase 1 is programmed to be unlocked within the next 18 months and will be phased in over the next 10 year period as and when the demand arises which will be carried out as follows:-

- a) The lower section of Phase 1 along the R103 and up to the Assmang turnoff along Eddie Hagan to be phased in over the next 5 years.
- b) The upper section of Phase 1 from the Assmang Turn-off upto Macro Turn-off to be phased in over the next 5 to 10 years.

PRIORITY PHASE 2

Priority Phase 2 will only be unlocked after the road, sewer, water & electrical infrastructure has been completed in the area.

The eThekweni Municipality is currently programming to upgrade the bulk sewer & water reticulation in 2031/ 2032. It will not be economically viable to develop Phase 2 prior to this bulk water and sewer being carried out by Municipality.

Phase 2 will be implemented over the next 10 to 20 years

PRIORITY PHASE 3

There has been interests from the surrounding land owners to purchase land in close proximity to their existing properties and they will therefore be responsible to install their own services.

The remaining land for development is relatively minor and has been considered within this report.

2. INTRODUCTION

Kantey & Templer PTY LTD was appointed by the Cato Ridge Development Company (CRDC) to compile a Pre-Feasibility Engineering Services Report in order to obtain preliminary approval from the service authorities for the proposed bulk service provision for the new Cato Ridge Development in KwaZulu-Natal in support of the Environmental Impact Assessment Application update as per the Executive Summary. This report documents the findings of this assessment

2.1 Location & Access

The proposed development on the 367.862 hectares is on a greenfields site.

The site locality plan is attached in Annexure A of this document.

The development will have three (3) Priority Phase. The co-ordinates (centre) of each Priority Phase are as follows:

Priority Phase	Y- CORDINATES	X- CORDINATES
Priority Phase 1	+37 068	+3 289 114
Priority Phase 2	+36 175	+3 286 829
Priority Phase 3	+37 224	+3 290 057

Access to the development is via the R103 and Eddie Hagen Road.

3. DEVELOPMENT PHASING

The Cato Ridge Development is divided into three (3) separate development priorities.

The timeframes above is dependent on a fluctuating economy, market trends and property demands which may change.

The proposed development has been programmed to be implemented in 3 different Priority Phases which is indicated on the attached Drawing No 20207-DSWE 01 Revision D in Annexure B.

Due to the future road upgrades required and planned upgrade of the bulk trunk water and sewer lines by the eThekweni Municipality in 2031/2032 this proposed development will be unlocked in an incremental approach as follows:-

3.1 Priority Phase 1

Priority Phase 1 is programmed to be unlocked within the next 18 months and will be phased in over the next 10 year period as and when the demand arises which will be carried out as follows:-

- a) The lower section of Phase 1 along the R103 and up to the Assmang turnoff along Eddie Hagan to be phased in over the next 5 years.
- b) The upper section of Phase 1 from the Assmang Turn-off upto Macro Turn-off to be phased in over the next 5 to 10 years.

3.2 Priority Phase 2

Priority Phase 2 will only be unlocked after the road, sewer, water & electrical infrastructure has been completed in the area.

The eThekweni Municipality is currently programming to upgrade the bulk sewer & water reticulation in 2031/ 2032. It will not be economically viable to develop Phase 2 prior to this bulk water and sewer being carried out by Municipality.

Phase 2 will be implemented over the next 10 to 20 years

3.3 Priority Phase 3

There has been interests from the surrounding land owners to purchase land in close proximity to their existing properties and they will therefore be responsible to install their own services.

The remaining land for development is relatively minor and has been considered within this report.

3.4 General

The proposed development is zoned as follows:-

- 1) Priority Phase 1 & 2 are presently zoned "General Industry 2"
- 2) Priority Phase 3 is presently zoned Agriculture

The Bulk & Internal services will be designed according to accepted engineering specifications and principles as well as acceptable environmental requirements and specifications, as provided in approved environmental scoping and impact assessment reports. The following engineering services for the development of the area are proposed and are based on the following assumptions.

- a) The level of service will cater for light industry logistics and warehouses, on the proposed development site.
- b) Where possible, the services will be designed to connect to the existing and proposed new Municipal, SANRAL & Department of Transport services infrastructure.
- c) The provision of services to the proposed development will be designed to ministerial norms and standards and generally in accordance with the "Guidelines for the Provisions of Engineering Services and Amenities in Residential Townships" (Red Book).

4. LAND USE AND DEMAND PARAMETERS

Table 4-1 indicates the anticipated bulk land use for the Development.

Table 4-1 Anticipated Bulk Developments

Priority	Warehouse Bulk (HA)	Industrial Bulk (HA)
Priority 1	61.912	61.912
Priority 2	74.541	74.541
Priority 3	20.309	20.309
TOTAL	156.762	156.762

Table 4-2 indicates the water demand parameters used in the calculations for this report.

Table 4-2 Water Demand Design Parameters

Priority	Warehousing AADD (kl/ha/d)	Industrial AADD (kl/ha/d)	Usage combined AADD 11.5(kl/ha/d)	Allowance for losses	Total Average Daily Demand (ML/ha/d)	Total Storage for 48 hours (ML)
Priority 1	10	13	1.424	15%	1.638	3.276
Priority 1	10	13	1.715	15%	1.972	3.944
Priority 3	10	13	0.467	15%	0.537	1.074
TOTAL			3.606		4.147	8.294

Please refer to the attached Water demands in the attached Annexure B for further details.

5. BULK INFRASTRUCTURE

5.1 Existing Infrastructure

Existing Roads

The present road network to the site and within the site is via the R103 and Eddie Hagan Road

Existing Water

The existing water network consist of:-

- a) Reservoir M which reticulates the western section of the proposed development which extends up to the southern side of Eddie Hagen Drive.
- b) The Cato Ridge Reservoir off Eddie Hagan Drive reticulates north & south of the reservoir
- c) The existing 22ML Abattoir Reservoir is positioned off Eddie Hagen and reticulates north and south of the reservoir within Cato Ridge area.
- d) There are existing 800 and 600 diameter water pipelines that run along the R103.
- e) An existing 600 diameter rising main pipeline on Eddie Hagan Drive from the R103 intersection up to the Cato Ridge Reservoir with a gravity line from the reservoir back to the R103 which feeds sections of Cato Ridge.
- f) An existing 600 diameter rising main pipeline on Eddie Hagan Drive from the Cato Ridge Reservoir northwards up to the Abattoir Reservoir with a gravity line from the Abattoir Reservoir to feed the Cato Ridge area.

The eThekweni Municipality has confirmed that there is sufficient water capacity to cater for Priority Phase 1 water demand.

6. PROPOSED BUILDING DEVELOPMENT

6.1 Cato Ridge Phased Development

The table below indicates the three (3) Priority Phases for the proposed development.

Priority	Warehouse Bulk (HA)	Industrial Bulk (HA)
Priority 1	61.912	61.912
Priority 2	74.541	74.541
Priority 3	20.309	20.309
TOTAL	156.762	156.762

Please refer to Paragraph 3. Development Phasing of this report which will provide details of Priority Phase 1, Priority Phase 2 & Priority Phase 3 for the proposed development.

7. NEW INFRASTRUCTURE

7.1 Interim Water Supply

After holding discussions with the eThekweni Municipality regarding the water reticulation it has been agreed that the eThekweni Municipality does have sufficient capacity for Priority Phase 1 ONLY water demand.

A summary of the discussion are as follows:-

At a meeting held on 21 September 2022 with the eThekweni Municipality the following items were discussed:-

1) the eThekweni Municipality is in the process of finalising the land acquisition for a new booster pump station that will be constructed in the near at the intersection of Eddie Hagan Drive and the R103 which will increase the volume of water to be supplied to the Cato Ridge reservoir. The bulk water pipeline has already been upgraded along Eddie Hagan Drive

2) Nokwanda Mpofana stated in the meeting that the eThekweni Municipality does have sufficient capacity to supply Priority Phase 1 (1.638 ML per day) water demand which will be subject to certain conditions (Please refer to the revised Priority Phasing drawing No 20207-DSWE 01 Revision D in Annexure B).

3) The eThekweni Municipality are planning to install a new 38ML in the vicinity of the Abattoir Reservoir. Water from the 38ML reservoir will service a broader area and accommodate the future demand for this proposed development. The reservoir will only be constructed subject to the development taking place in this area.

4) The eThekweni Municipality requires that the Developer contributes towards the upgrade of the 38ML reservoir. The contribution will be based on the demand driven by the development and relative to the size of the development.

5) No previous logging is available in the Cato Ridge Area.

At present new logging will not be possible as large volumes of water are being diverted to other areas in or around Durban due to the recent flooding that has washed away pipe lines.

The table below indicates the average daily water demand for each priority phase

Average Daily Water Demand for the Development

Priority	Warehousing AADD (kl/ha/d)	Industrial AADD (kl/ha/d)	Allowance for losses	Total Average Daily Demand (ML/ha/d)
Priority 1	10	13	15%	1.638
Priority 1	10	13	15%	1.972
Priority 3	10	13	15%	0.537
TOTAL				4.147

7.2 Ultimate Water Supply

The eThekweni Municipality is currently programming to upgrade the bulk sewer & water reticulation in 2031/ 2032. It will not be economically viable to develop Phase 2 & 3 prior to this bulk water and sewer has installed by the Municipality.

The current consumption at the Assmang Cato Ridge Manganese plant correlates to approximately 31ML per month or 0.64ML per day. The water demand for Phase 1 is approximately 1.638 ML per day. The introduction of the Reverse Osmosis plant will reduce demand by 32m³/hr or 0.77ML/day. We are therefore unable to rely on surplus capacity from the plant to service the bulk of the proposed development but may be in a position to plan for some surplus to feed to the proposed development if required.

7.3 Storage Facilities

48 hours storage will be required by the eThekweni Municipality which is indicated Table 4-2 Water Demand Design Parameters.

When selling off parcels of land it will be a requirement that each site will be responsible to erect their own water tanks to provide their 48 hours storage

When Priority Phase 2 is to be developed it will necessary to erect a 10metre high x approximately 500kl elevated tank at the high point of Priority Phase 2 to ensure that there is sufficient water pressure at the adjacent properties.

7.4 Fire

Each site will be responsible for erecting their own fire hydrants and 48 hour storage tanks to comply with regulations

KANTEY AND TEMPLER CONSULTING ENGINEERS

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ANNEXURE A

Site Locality Plan

ANNEXURE B

Water, Sewer and Power Demands Drawing

ANNEXURE C

Water Layout Drawing

