

TERMS OF REFERENCE

Kufanikiwa Engineering Consulting was appointed by Ugu District Municipality for the implementation of water services infrastructure grant (WSIG) funded program within Ugu District Municipality as per the letter of appointment dated 27 January 2023 (Contract No. UGU-07-1613-2022). The project is for the replacement and refurbishment of pipeline infrastructure within Ugu District Municipality.

INTRODUCTION

Ugu District Municipality (UDM) faces an enormous challenge regarding the allocation, use and protection of its water resources. The management and use of water resources is inefficient, inequitable, and unsustainable. The integrated approach to water management is needed.

The sustainability of some of the Ugu District Municipality's water resources is threatened both in terms of quantity and quality. Unless a proper resource management plan is adopted, future water demand will significantly exceed available freshwater resources, despite UDM currently having plenty of water resources. The challenge is exacerbated by the existence of old and ailing water distribution infrastructure. Most of these pipes are either near or have reached their design life.

In responding to the requirements by the Water Services Act (Act 108 of 1997), the UDM implemented replacement and refurbishment of pipeline infrastructure under the program funded by WSIG.

PROJECT OBJECTIVES

Refurbishment and Replacement of Pipeline Infrastructure

The project objective is to improve in operational efficiency as a response to service delivery and revenue improvement as a part of UDM overall Water Conservation and Water Demand Management (WC/DMD) strategy as well as its contribution towards the objectives of the National Water Conservation/Water Demand Management (WC/WDM) initiatives currently underway throughout the country in support of the protection of a scarce water supply resource.

The success of the project is meant to benefit approximately 111 866 people within UDM with continuous supply as indicated in the UDM business plan. The improved supply of clean water will also enhance health and hygiene.

Assisi Borehole Water Scheme

Ground water supply with boreholes scheme project which will augment in short term the supply from Assisi Water treatment work. The Borehole water scheme comprises of boreholes that pump water to a 50kl holding tank, from where it will be pumped to the existing 1ML existing reservoir. This will be conducted via gravity and rising pipeline mains.

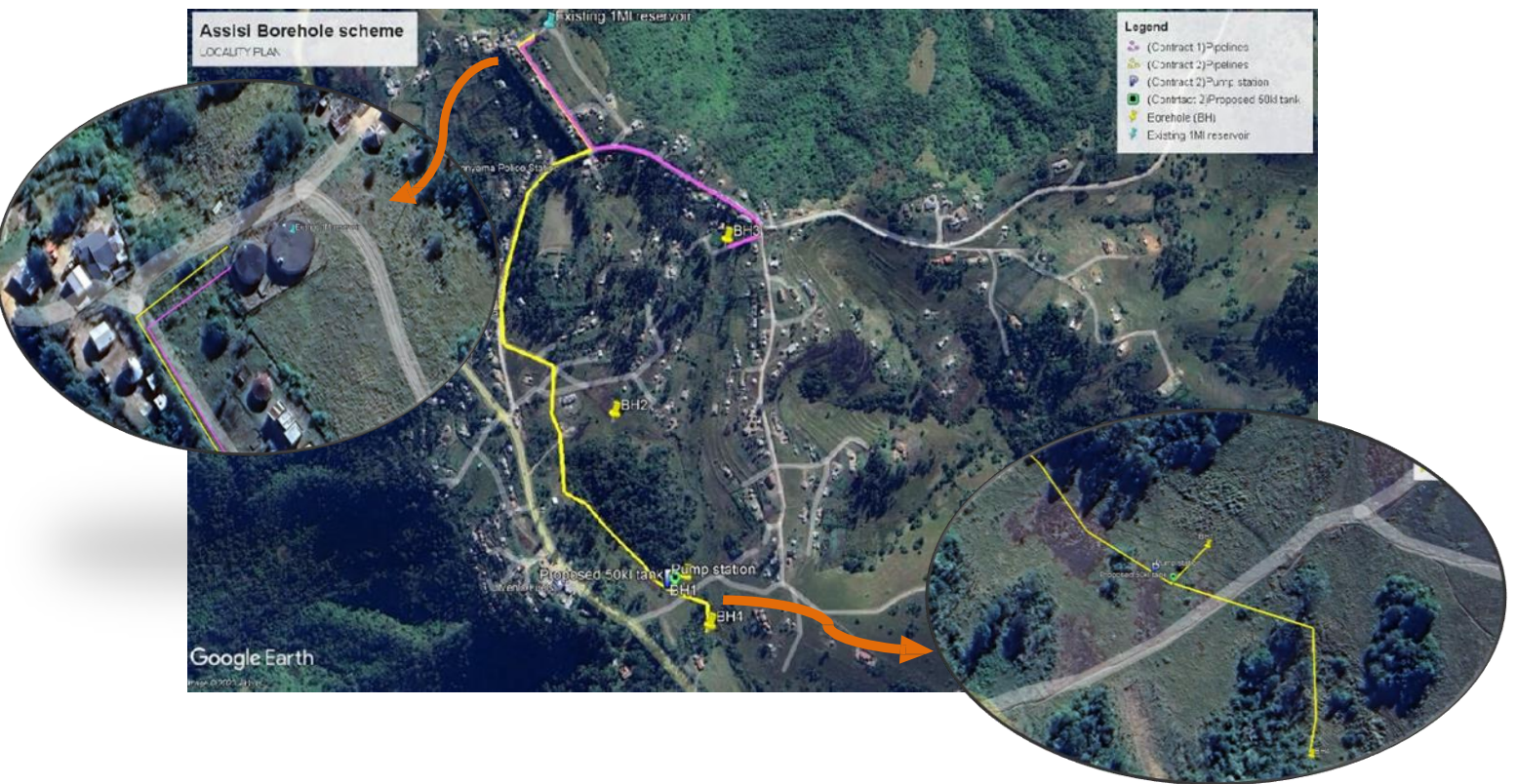
The Borehole Water scheme is within a 2km radius of the Mseni, village in the Ugu District Municipality and services Wards No. 1,4,9,12,13,14,15 & 16.

The project will create job opportunities to local suppliers and will also provide skills to the communities within UDM.

SCOPE OF WORKS

Upon the approval of 2023/24 Business Plans, twenty-three (23) roads from the entire project scope were prioritized for pipe replacement, to be completed by 15 February 2024. The completion date has been revised to end August 2024 because of delays that have been experienced during construction, which include the material shortages from suppliers. All the prioritized roads fall under Marburg, Oslo Beach and Albersville in the South-Central area and Park Rynie, Scottburgh, Umthwalume and Pennington on the Northern area within Ugu District Municipality.

The scope of Assisi borehole scheme included the Construction of 3 new Boreholes, Backup generator (Diesel) Construction of pumpstation, Construction of 2,8 km rising main pipeline, Construction of 300m interconnecting pipework, Construction 50kl tanks, Installation of pumpstation, MCC, telemetry, and commissioning.



The scope of works includes the following:

- Preparation of the Inception Report
- Preparation of the BOQ
- Manage and implement the project as per scope of works which includes project management of the construction phase to completion.
- Managed social issues related to project.
- Preparation of monthly construction progress and final payment certificate's
- Preparation of progress reports.
- Preparation of project cash flow report on monthly basis
- Preparation of project close out report.

PROJECT PROGRESS

Assisi Borehole Water Scheme

Pipelines	
Interconnecting pipework and chambers	100% Completed
Holding day-tank	
Construct Floor slabs and plinths	Construction Floor slabs Completed
Install tank and water testing	Tank installation completed
High Lift Pump Station	
Pump station building construction	The pump station building completed
Pump Procurement	Pump Procured and installed
Installation: pipes, motors, piping, valves	100% Completed
Installation: MCC, telemetry, communication systems and commission	100% Completed

Refurbishment and replacement of pipeline infrastructure

Area North

Site Name	Location	Total Length(m)	Pipe Diameter (mm)	Site Progress	Progress %
Williamson street	Scottburgh Central	1000	160	completed & commissioned	100%
Williamson street	Scottburgh Central	1000	75	completed & commissioned	100%
Galway street	Scottburgh Central	1000	160	completed & commissioned	100%
Culty Sark	Scottburgh Central	850	75	completed & commissioned	100%
Third Street	Park rynie	1000	110	completed & commissioned	100%
4 TH street	Park rynie	1000	110	completed & commissioned	100%
Bayzley to Sezela	Sezela	3000	160	completed & commissioned	100%
Bayzley to Sezela	Sezela	1500	160	completed & commissioned	100%
Kingfish Road	Pennington	1100	75	completed & commissioned	100%
Mthwalume Rd bridge	Mthwalume	1300	160	Pipe laying in progress	80%
Sylvia Road	Pennington	1100	75	Pipe laying complete	90%
Richmond Cresent	Pennington	1100	75	Pipe laying complete	90%
Overall Progress					97%

Area South Central

Site Name	Site location		Length (m)	Pipe Diameter (mm)	Progress detail	Progress
	Latitude	Longitude				
ALBERSVILLE						
Kingfisher Road	30°43'31.53"S	30°26'41.60"E	500	75	Pipeline was completed & commissioned	100%
Flammingo Road	30°43'35.31"S	30°26'40.94"E	450	100	Pipeline was completed & commissioned	100%
Seagull road	30°43'26.4"S	30°26'37.69"E	550	75	Pipeline was completed & commissioned	100%
Sniper road	30°43'26.99"S	30°26'37.69"E	650	110	Pipe Laying completed & commissioned	100%
Marburg						
Buckingham Drive	30°48'51.14"S	30°25'10.66"E	650	75	Pipeline was completed & commissioned	100%
Protea Road	30°44'45.58"S	30°25'38.12"E	1125	100	Pipe Laying completed	95%
Hibiscus Drive	30°44'42.57"S	30°25'35.09"E	370	100	Pipeline was completed & commissioned	100%
Wimpey Road	30°49'22.1"S	30°24'13.8"E	1145	75	Pipe Laying completed	100%
Oslo beach						
Settlers' road	30°48'00.7"S	30°24'47.20"E	590	100	Pipe Laying completed	95%
Kent road	30°44'55.66"S	30°25'02.38"E	880	75	Pipeline was completed & commissioned	100%
Prince Oalf road	30°48'15.26"S	30°24'25.31"E	550	100	Pipeline was completed & commissioned	100%
Range road	30°48'10.1"S	30°24'33.4"E	580	75	Pipeline was completed & commissioned	100%
King Haakon road	30°48'10.1"S	30°24'33.4"E	550	75	Pipeline was completed & commissioned	100%
Overall progress						99%

PROJECT CASH FLOW

Assisi Borehole Water System - Construction	R 8 287 575.26
ADD 15% VAT	R 1 243 136.29
CONTRACT AMOUNT	R 9 530 711.54

Refurbishment & Replacement of Pipeline Infrastructure(in progress) - Construction	R 47 393 393.37
ADD 15% VAT	R 7 109 009.01
CONTRACT AMOUNT	R 54 502 402.38

PHOTOS

Assisi



Pipeline Replacement

Material on site



Pipe laying & Pressure Testing



Reinstatements



Tie-ins

