



**STORMWATER MANAGEMENT PLAN FOR THE
PROPOSED BULK WATER SUPPLY FOR
KWAHLOKOHLOKO SUB-SUPPLY AREA (SSA 1) PHASE
2, UMLALAZI LOCAL MUNICIPALITY, KING
CETSHWAYO DISTRICT MUNICIPALITY, KWAZULU-
NATAL**

SEPTEMBER 2022

EDTEA Ref. No.: To be issued

NEAS Ref No: To be issued

Prepared by:

TERRATEST (PTY) LTD

PO Box 794

Hilton, 3245

Telephone: (033) 343 6789

Contact: Ms N. Mkhize

Email: mkhizen@terratest.co.za

TABLE OF CONTENTS

1. INTRODUCTION AND BACKGROUND	2
2. PURPOSE OF THE PLAN.....	2
2.1 Planning Phase	2
2.2 Construction Phase	3
2.3 Operational Phase.....	3
2 CONCLUSION.....	3

1. INTRODUCTION AND BACKGROUND

During the initial notification period (May 2022 - August 2022), of the Basic Assessment process for the proposed KwaHloko Upgrading of Bulk Water Supply, Sub-Supply Area (SSA 1), Phase 2 project comments were received from various parties. One of these parties was the Department of Water and Sanitation (DWS) who stated the requirement for a Stormwater Management Plan (SWMP) for the project. This was communicated in an email dated 29th of July 2022. This document has therefore been compiled to meet the requirements of the DWS.

The proposed development for which the SWMP is required is a project of the King Cetshwayo District Municipality (KCDM) which entails the construction of water pipelines, and a new reservoir as follows:

- DN (i.e., diameter) 500mm pipe: Total of ±10km, from existing reservoir R1-1 (8ML capacity) in KwaHloko (co-ordinates 28°50'43.82"S; 31°27'31.87"E), up to the new reservoir R1-2;
- DN400mm: Total of ±4 km, partly in shared trench with DN500 and running from the new reservoir towards the existing reservoir R2-1 (coordinates 28°48'2.81"S; 31°32'33.41"E) in Habeni;
- DN315 pipe: ±1.2km (in shared trench with DN500 and DN 400) from new reservoir R1-2 (1.55ML capacity) in a westerly direction, pipe will cater for future project; and
- New Reservoir (R1-2): co-ordinates 28°49'52.85"S; 31°32'22.54"E, in KwaMphelela, capacity of 1.55ML.

2. PURPOSE OF THE PLAN

The purpose of the SWMP is to specify general guidelines and principles for stormwater management the project to ensure that changes in stormwater flow direction and velocity as a result of the project does not adversely impact on the environment.

SWMP's are not only important to ensure the protection of watercourses but also to avoid soil erosion. The protection of watercourses from poor stormwater management practices is key as indicated in the Freshwater Assessment Study undertaken for the project that thirteen (13) watercourse units were rated as 'likely to be affected' by the project in terms of incurring potential construction and/or operation related impacts. The watercourses will be either crossed by the proposed pipeline, or the pipeline alignment will be sufficiently close to the watercourse that direct or indirect impacts may occur. It must however be noted that no watercourses stand to be directly impacted by the construction and operation of the reservoir as this feature is proposed for construction in an elevated area located ~450m from the nearest watercourse.

Procedures for the management and control of stormwater are described in this SWMP. The plan is aligned with the EMP and is, therefore, structured into a Planning, Construction and Operational section for ease of use. *It must be highlighted that while stormwater and erosion are closely linked, this SWMP has excluded soil erosion management measures as this is a separate subject that is best dealt with independently of the SWMP in order to provide adequate details.*

2.1 Planning Phase

- Specific to the new reservoir site, stormwater infiltration must be promoted through minimising hard paved areas and using vegetation or porous paving surfaces wherever possible around the footprint of the reservoir;
- The harvesting of stormwater for appropriate uses must be planned and incorporated into the design of the reservoir where possible.

2.2 Construction Phase

- Vegetation clearing must be minimised to avoid exposed soils
- Dissipate concentrated stormwater flows through energy dissipaters or vegetated areas
- The bases of stockpiles of soil or other material that is susceptible to water erosion, must be stabilised with bricks, rocks of similar barrier to contain the material to avoid possible sedimentation into watercourses
- Ponding of stormwater must not be permitted anywhere on site. Where stormwater has collected into trenches, the water must be pumped out of the trench and allowed to dissipate into the environment at a low velocity.
- Sandbag berms must be placed at regular intervals on all steep slopes along the pipeline alignment, before and after backfilling in order to minimize erosion and control the velocity of stormwater entering watercourses. The angle of the berms should not be placed perpendicularly but at an angle of at least 20° to prevent storm water build up behind the berm while allowing the water to dissipate into the environment
- At watercourse crossing points, the construction area must be isolated by a sandbag bund in order to protect the area from possible silt contaminated run-off.

2.3 Operational Phase

Stormwater will not be an issue of concern during the operational phase of the project, particularly for the pipelines. These is because these will be buried and it is expected that the areas affected by construction will be rehabilitated. As a result of this, the rehabilitated areas will be able to absorb stormwater. Stormwater may however become an issue of concern for the new reservoir site. It is therefore important that vegetation or porous paving surfaces around the footprint of the reservoir is maintained to retain stormwater absorption capabilities and prevent erosion and scouring.

2 CONCLUSION

This SWMP has provided measures to ensure that stormwater does not result in adverse environmental impacts during the various project phases. It is advisable that this plan is reviewed and adopted by environmental authorities and form part of the projects management plans to be adhered to by the Contractor on behalf of the KCDM.