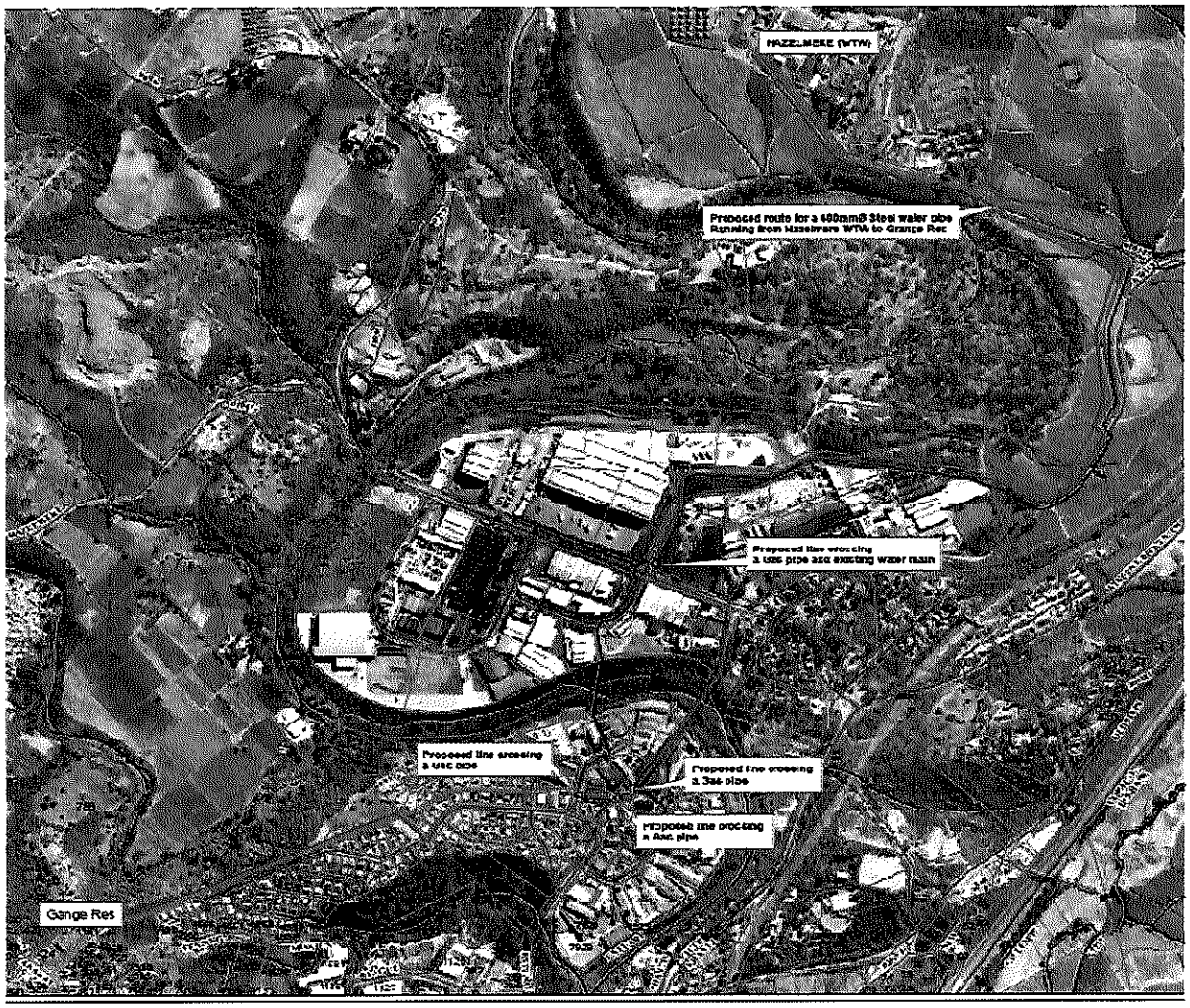
APPENDIX I: ADDITIONAL INFORMATION

DMT Kai Batla (Pty) Ltd

APPENDIX I.1
EWS Stormwater Management Plan

RE-ROUTING OF A 400mmØ STEEL PIPE FROM HAZELMERE WATER TREATMENT WORKS TO GRANGE RESERVOIR:

STORM WATER MANAGEMENT PLAN



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1. Introduction

This storm water Management Plan outlines the methodologies that will be employed to manage storm water before, during and after construction for the water pumping main in Verulam. The objectives are to minimise the threat of flooding, protect watercourses which are potential receiving bodies and to ensure proper disposal of storm water.

2. Background

EThekwini Water and Sanitation is proposing to upgrade the existing Asbestos-Cement (AC) rising main between Hazelmere Water Treatment Works (WTW) to Grange Reservoir which is approximately 6km in length. The pipeline traverses private properties and bursts on occasion resulting in flooding of properties and subsequent insurance claims against the Municipality. The valves located on this main are in various stages of deterioration – some severely corroded, others non-operational. Repairs are ongoing. Problems on this rising main are hampering supply to three reservoirs that source water from Grange Reservoir - Everest Heights Reservoir, Redcliffe Reservoir and Mountview Res.

It is proposed that the existing 375mm (Ø) AC pipeline should be upgraded by a 400 mm Ø steel pipeline routed along surrounding roads and within an existing servitude en route to Grange Reservoir.

3. Location

The site of the works is in Verulam, north of Durban. Access to the site is via N2 North. The extent of the site is shown on the locality sketch in Annexure 1.

4. Existing storm water Infrastructure

There is an existing storm water infrastructure in the area. The extent of the storm water infrastructure is shown on the sketch in Annexure 2.

5. Proposed new Infrastructure

There is no proposed stormwater infrastructure that will be constructed under this project.

6. Storm water Control measures Before Construction

The following measures will be implemented before construction

- Environmental awareness training of the contractor and his workers will take place wherein acceptable construction methods and stormwater management practices will be discussed.

7. Storm water Control measures During Construction

The following measures will be implemented during the construction phase to mitigate the impact of storm water run-off on the environment and the works:

- The length of open trench excavations will be limited to a maximum of 100m.
- Cut-off catch water berms will be constructed on the high side of the trench. This will be particularly relevant for areas with steep slopes. For the steep areas, berms will be positioned so that the velocity of the storm water run-off will be reduced.
- Where material is highly erodible, sand bags will be used channel the flows.
- storm water run-off will be directed on to vegetated buffer zones and not directly into water courses
- Trench barricading will have openings to prevent the build-up of storm water run-off behind them.
- In areas with a high water table, there will be adequate battering and shoring to prevent trench collapses.
- Pumps will be available at all times on site for dewatering of trenches after storm events.
- The open ends of the pipe will be blocked with end caps or geo-textile fabric (Bidim) to prevent debris from entering the pipe.
- Sediment traps and fencing will be utilised to prevent excess levels of sediments entering watercourses from work areas and afterwards disposed of in a lawful manner The contractor will check weather forecasts to mitigate potential storm damage.
- During rehabilitation process, in steep areas, sand bags will be placed perpendicular to the trench.

Design Standards

The design standards and criteria used are based on the eThekwini specifications from the following:

PART DB	:	EARTHWORKS FOR PIPE TRENCHES
PART L	:	MEDIUM-PRESSURE PIPELINES
PART LB	:	BEDDING (PIPES)

Annexures

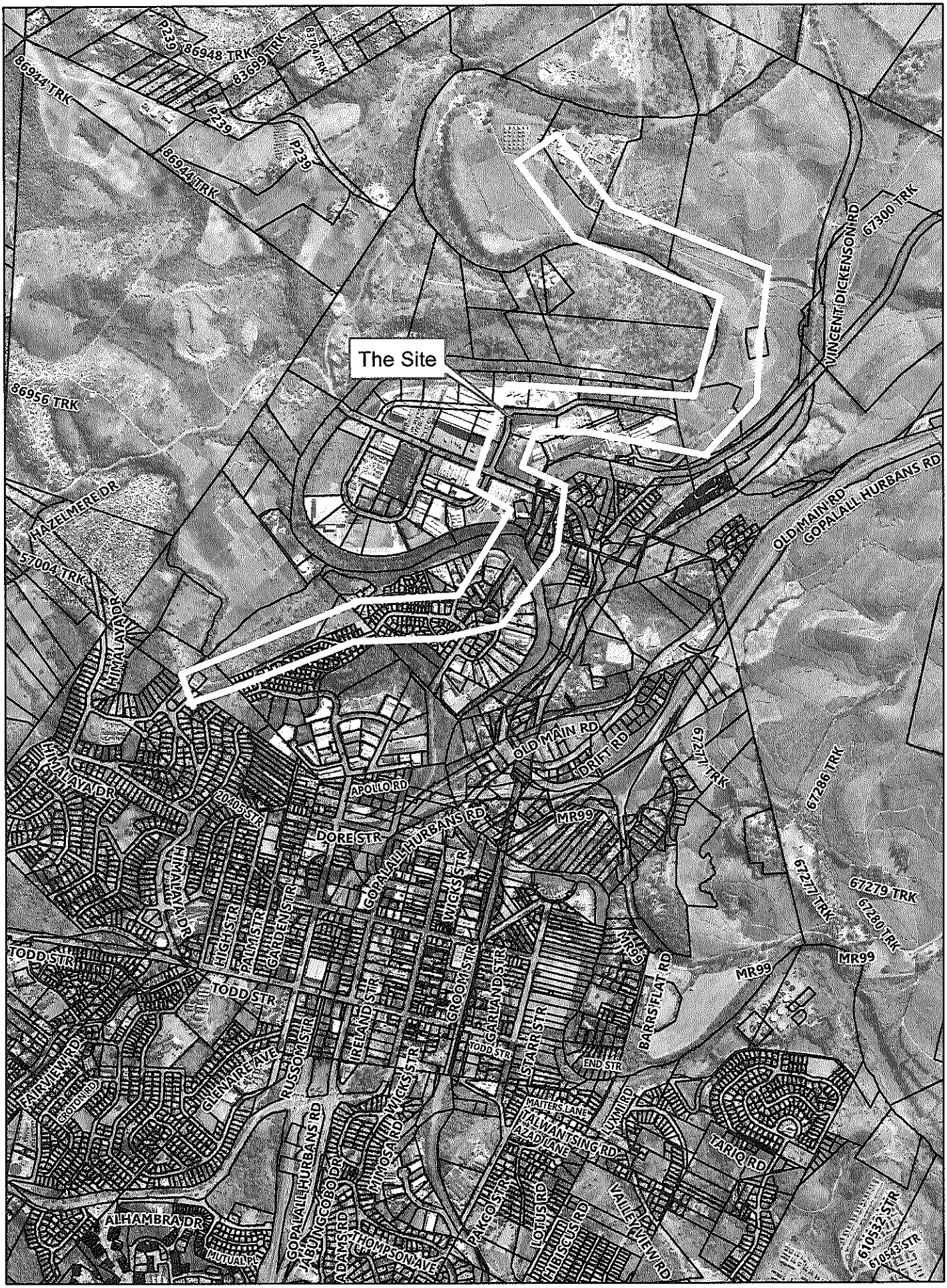
Annexure 1: Locality Sketch

Annexure 2: Existing Stormwater

Annexure 1: Locality Sketch

RE-ROUTING OF 400mmØ STEEL PIPE HAZELMERE WWTW TO GRANGE RESERVOIR

Locality Sketch



Annexure 2: Existing Storm water

RE-ROUTING OF 400mmØSTEEL PIPE FROM HAZELMERE WWTW TO GRANGE RESERVOIR