

**PROPOSED REFURBISHMENT AND UPGRADE OF THE WAINEK BULK WATER SUPPLY SYSTEM,  
NEAR GRAHAMSTOWN, WITHIN THE MAKANA LOCAL MUNICIPALITY, EASTERN CAPE  
PROVINCE**

**BACKGROUND INFORMATION DOCUMENT**

**JUNE 2017**

**BASIC ASSESSMENT**

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### 1) INTRODUCTION

The Waainek Water Treatment Works (WTW) purifies water to serve the western half of Grahamstown, including the industrial sites and Rhodes University. The Makana Local Municipality has recently secured funding for the refurbishment and upgrade of this bulk water supply system.

The Makana Municipality has appointed Bosch Projects (Pty) Ltd as consulting engineers on the project. Terratest (Pty) Ltd has been appointed to undertake the application process for Environmental Authorisation, required in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

**Table 1: The role players of the project.**

<b>APPLICANT</b>	Makana Local Municipality
<b>PROJECT MANAGERS</b>	Bosch Projects (Pty) Ltd
<b>ENVIRONMENTAL ASSESSMENT PRACTITIONER</b>	Terratest (Pty) Ltd
<b>COMPETENT AUTHORITY</b>	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)

### 2) DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed project, involves the following:

- (i) Installation of a Rising Main of approximately 4.8 km between Settlers Dam and Howiesonspoot Dam with a 250mmø and throughput of 60 l/s. This will constitute a completely new line, running parallel with the existing line, about 2 to 3 metres away);
- (ii) Inspect and repair cathodic protection measures on three sections along the existing Howiesonspoot Rising Main. The cumulative length of these sections on which cathodic protection will be carried out is approximately 2.5km. This activity will occur within the same footprint and will involve the following:
  - 1) Continuity bonding of pipe joints – 420 in total;
  - 2) Installation of sacrificial anodes – 230 in total; and,
  - 3) Installation of 10 monitoring (test) points.
- (iii) Installation of small appliance generator at the Waainek Water Treatment Works (WTW);
- (iv) Trimming of vegetation along the existing line, between Settlers Dam Pump Station and Howiesonspoot Dam (approximately 4.8km in length) required for maintenance purposes. The route of the existing line runs parallel to that of the new proposed line;
- (v) Refurbishment of the admin office, lab and restroom;
- (vi) Refurbish the sand filters;
- (vii) Lighting to WTW;
- (viii) New WTW control panel;
- (ix) Refurbish Raw water pump genset;

- (x) Upgrading of the chlorination system;
- (xi) Automation of valve at the clarifiers;
- (xii) Standby pump and pipework at town filters;
- (xiii) Water recover system from sludge ponds;
- (xiv) Conduct dam safety inspections at Settlers Dam and Howiesonspoor Dam;
- (xv) Refurbish/repair external Leidam (size is approx. 10 Mℓ);
- (xvi) Roof covering to external Leidam (size is approx. 10 Mℓ); and,
- (xvii) Ancillaries;

Activities (i) and (ii) require Environmental Authorisation in terms of the NEMA: Environmental Impact Assessment Regulations (2014) (as amended).

### 3) SITE LOCATION

The proposed refurbishment and upgrade works will take place between Settlers Dam and Howiesonspoor Dam and between Howiesonspoor Dam and the Waainek WTW. The proposed new section of Rising Main, measuring approximately 4.8km in length, will run parallel to the existing Settlers Rising Main, from Settlers Dam to Howiesonspoor Dam, within the Thomas Baines Nature Reserve and lies 12km southwest of Grahamstown, just off the N2 Highway (see Figures 1 and 2).

The cathodic protection will be undertaken along three sections of the existing Howiesonspoor Rising Main, which runs between the Howiesonspoor Dam and the Waainek WTW (see Figure 1): the first section falls within the Thomas Baines Nature Reserve, whereas the other two, shorter sections are located outside the nature reserve and run along the N2 Highway. The cumulative length of these cathodic sections is approximately 2.5km.

Co-ordinates of the position of the new Settlers Rising Main and the three sections for cathodic protection are presented in Table 2.

**Table 2: Co-ordinates of the new Rising Main and sections for cathodic protection (refer to Figure 1).**

POSITION	LATITUDE	LONGITUDE
<b>New Settlers Rising Main:</b>		
START	33° 24' 43.18" S	26° 30' 25.32" E
END	33° 23' 15.43" S	26° 29' 14.86" E
<b>Cathodic protection Section 1:</b>		
START	33° 23' 15.88" S	26° 29' 12.50" E
END	33° 22' 34.12" S	26° 28' 40.63" E
<b>Cathodic protection Section 2:</b>		
START	33° 21' 17.79" S	26° 29' 35.76" E
END	33° 20' 56.95" S	26° 29' 53.60" E
<b>Cathodic protection Section 3:</b>		
START	33° 20' 43.20" S	26° 29' 50.21" E
END	33° 20' 40.45" S	26° 29' 49.91" E

Figures 1 and 2 indicate the position of the new Settlers Rising Main and cathodic protection to be undertaken on three sections along the existing Howiesonspoort Rising Main.

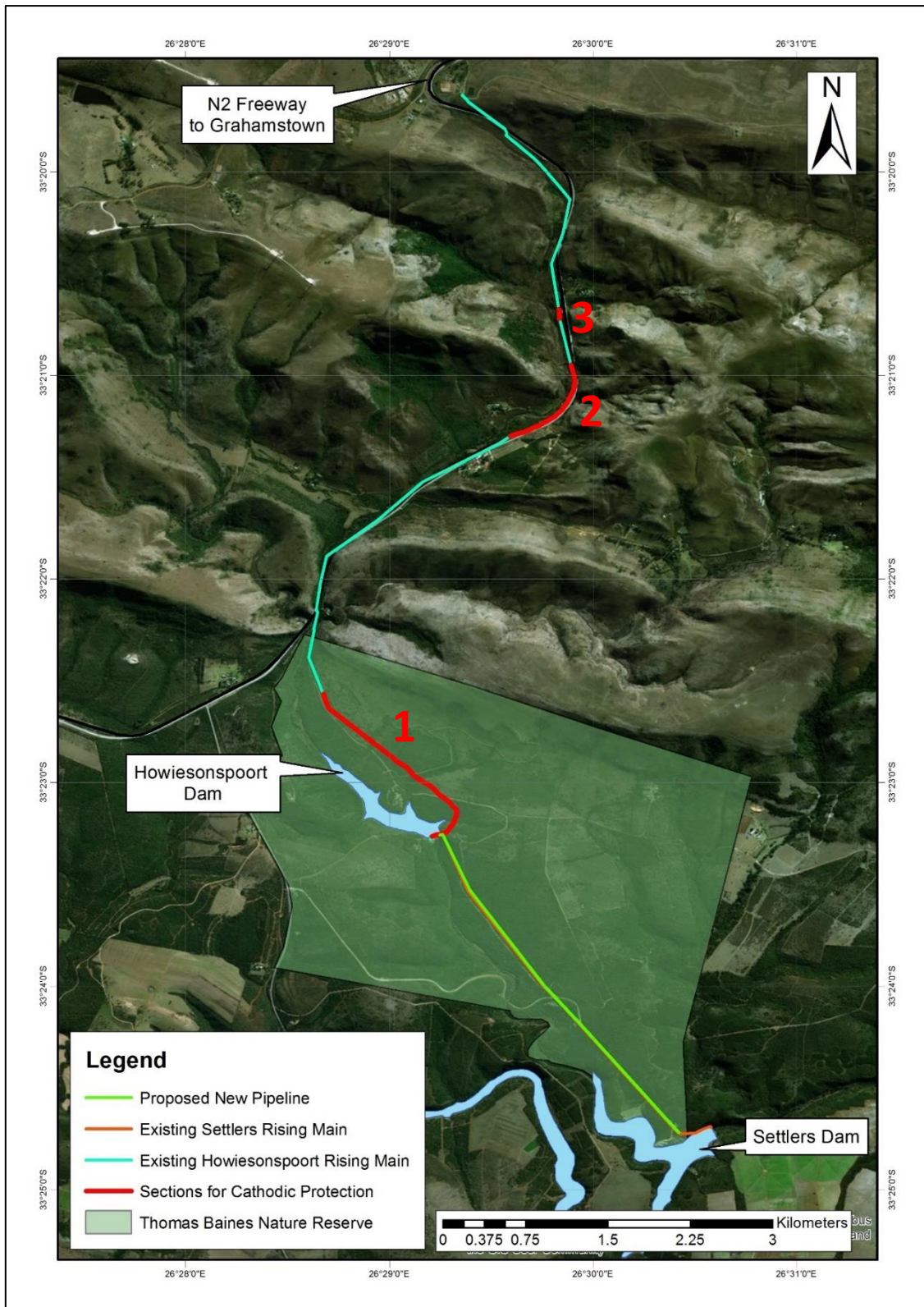


Figure 1: Aerial photo indicating the location of the proposed new pipeline (Rising Main) and sections for cathodic protection for upgrading and refurbishment.

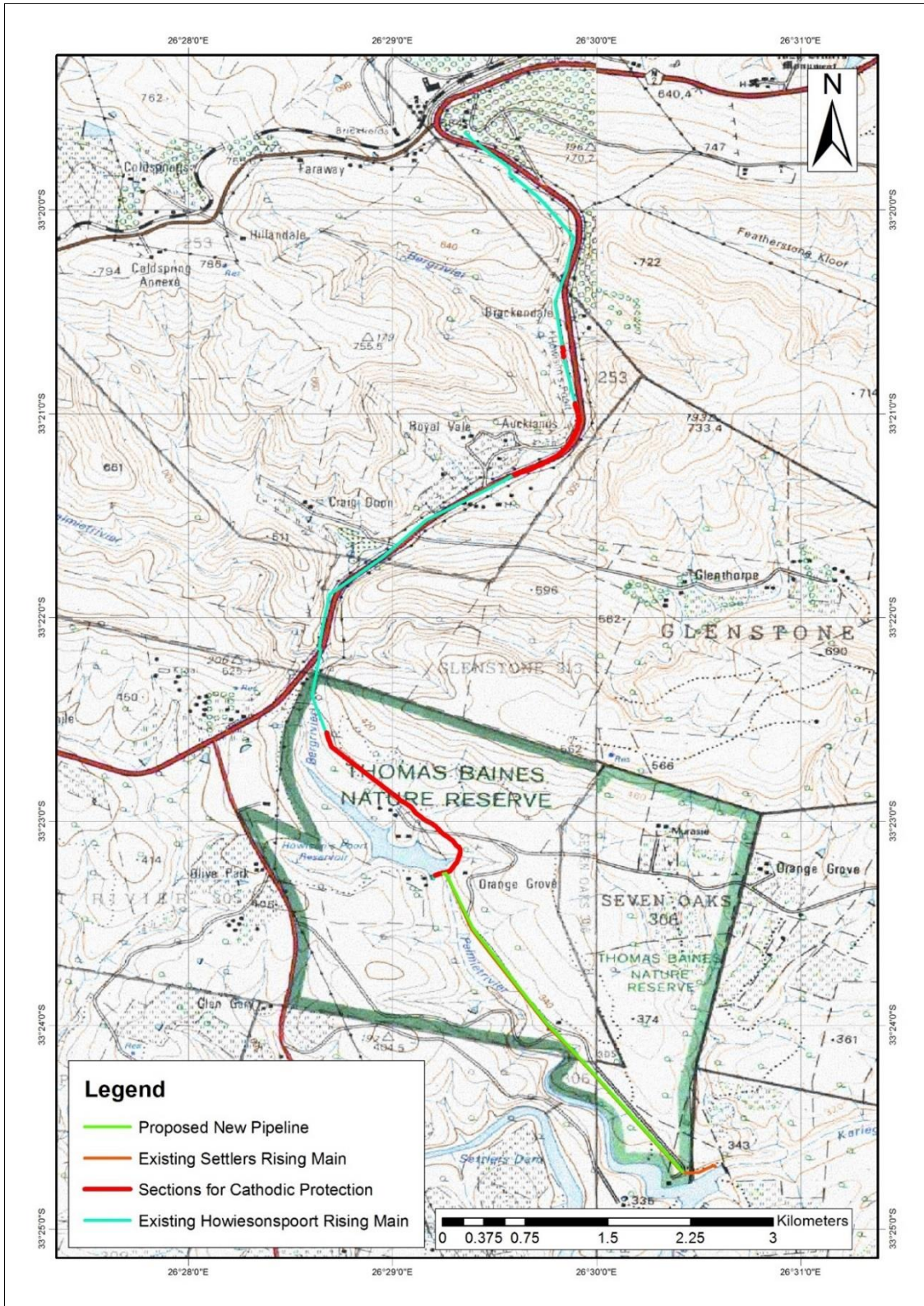


Figure 2: Topographic map (1:50 000) indicating the location of the proposed new pipeline (Rising Main) and sections for cathodic protection for upgrading and refurbishment.

## 4) RECEIVING ENVIRONMENT

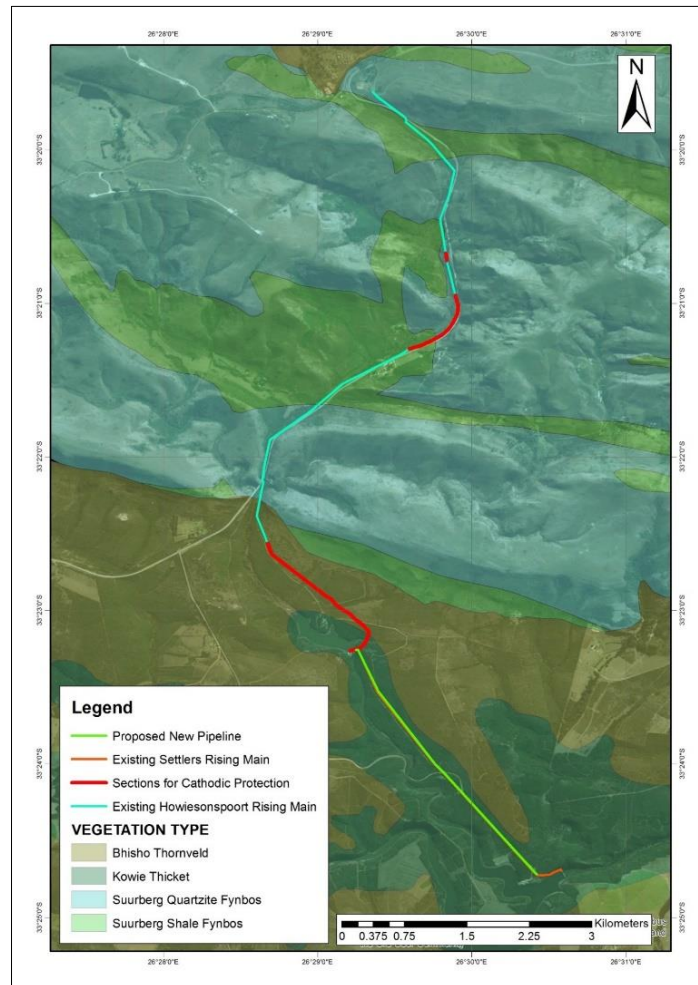
### a. Biodiversity

Four vegetation types, predicted by *The Vegetation Types of South Africa, Lesotho and Swaziland* (Mucina and Rutherford, 2006), are intersected by the proposed works (see Figure 3):

- a) Bhishe Thornveld;
- b) Kowie Thicket;
- c) Suurberg Quartzite Fynbos; and,
- d) Suurberg Shale Fynbos

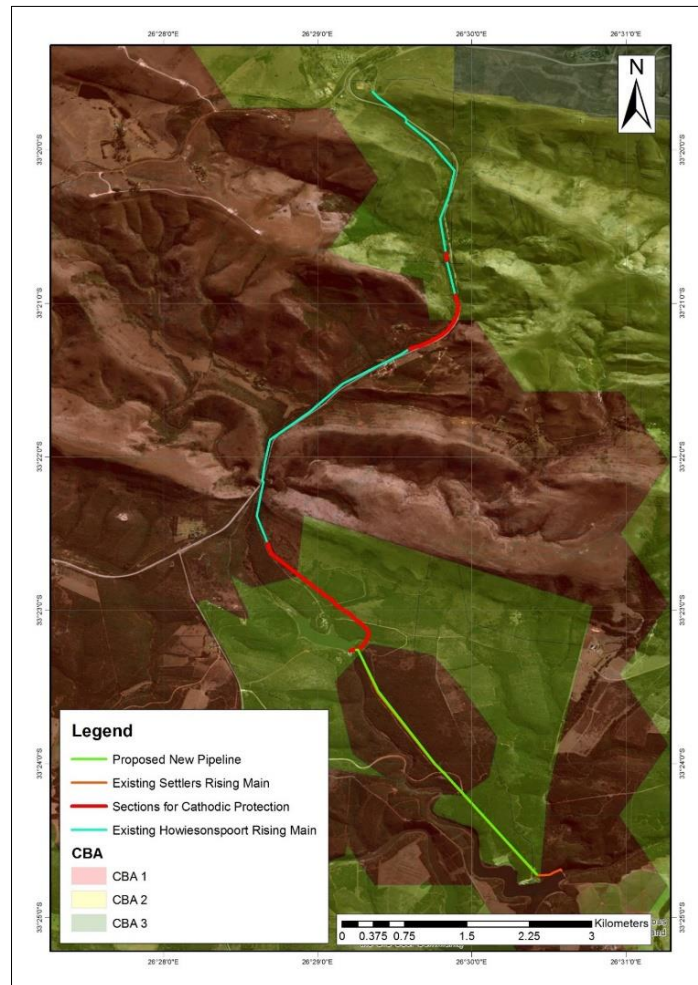
In terms of the conservation status of these, none of these vegetation types are listed as critically endangered or endangered in terms of the 'National List of Ecosystems that are Threatened and in Need of Protection' (published in GN 1002 of 9 December 2011), as promulgated under Section 52 of the National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA).

Additional and more detailed information on indigenous and protected vegetation species will be provided in the Basic Assessment Report after a vegetation assessment has been undertaken on the development site by a specialist.



**Figure 3: Map indicating the vegetation predicted to occur on the proposed development site and in the surrounding areas.**

Furthermore, the Ecological Importance and Sensitivity of this development site is classified by the Eastern Cape Biodiversity Conservation Plan (ECBCP) Systematic Conservation Assessment (2007) as Critical Biodiversity Area (CBA) 1, CBA 2 and CBA 3 (see Figure 4). The ECBCP maps areas that are priorities for conservation in the province, assigning land use categories to the land depending on the state that it is in. CBAs are terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning. Additional details on these areas will be provided in the BAR.



**Figure 4: Map indicating Critical Biodiversity Areas (CBAs) occurring on the proposed development site and in the areas surrounding.**

In terms of the National Environmental Management: Protected Areas Act (Act 57 of 2003a) portion of the works will occur within the Thomas Baines Nature Reserve (see Figure 1). As per Section 50(5) of the NEMPAA, “No development, construction or farming may be permitted in a national park, nature reserve or world heritage site without the prior written approval of the management authority”. As such, the Management Authority of the Thomas Baines Nature Reserve, namely Eastern Cape Parks and Tourism Agency (ECPTA) will be engaged and the necessary permission obtained.

**b. Hydrology**

Figure 5 indicates surface water resources, as identified from the 1:50 000 topographic maps, and wetland areas, identified in the National Freshwater Ecological Priority Areas (NFEPA) database, 2011. It is evident from Figure 5 that at least five (5) drainage lines intersect the proposed new Rising Main (between Settlers Dam and Howiesonspoor Dam). For the Howiesonspoor Rising Main’s sections, which will undergo cathodic protection, four (4) drainage lines traverse the first section, and one (1) crosses the second and third sections. The presence of these surface water features will be verified by a site assessment, undertaken by an appropriately qualified and experienced specialist.



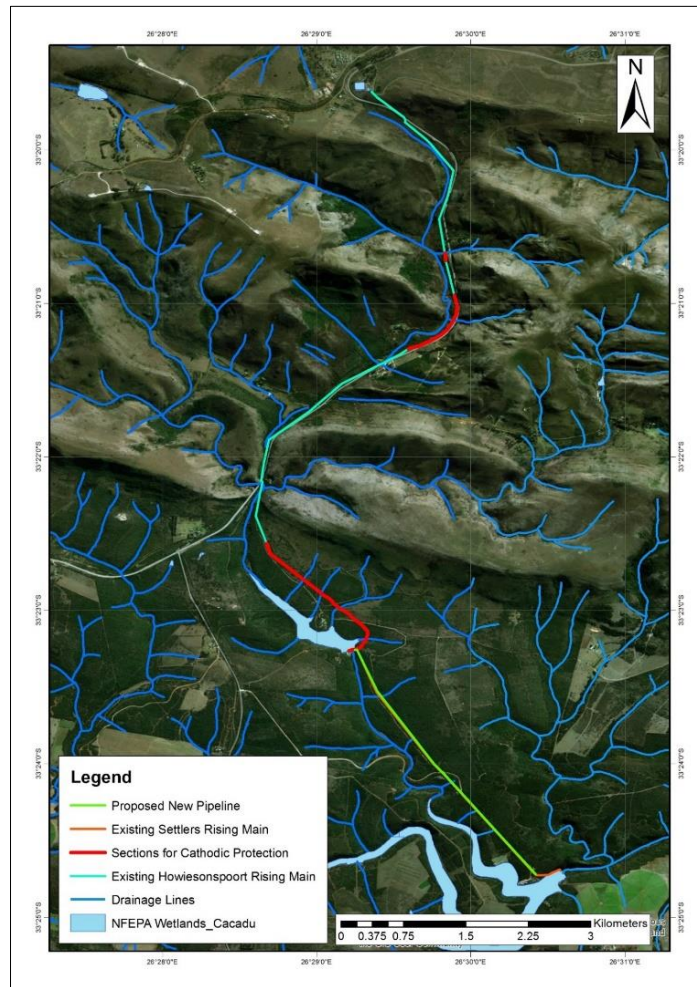


Figure 5: Map showing surface water features (drainage lines) and NFEPA wetlands in proximity to proposed refurbishment works.

## 5) AUTHORISATION REQUIREMENTS

### a. National Environmental Management Act, 1998

The proposed development triggers activities listed in the EIA Regulations (2014), published in terms of the NEMA. A summary of the activities triggered is contained in Table 3.

Table 3: Summary of the NEMA Listed Activities that are triggered by the proposed project.

GOVERNMENT NOTICE	NUMBER	LISTED ACTIVITY AND COMMENT:
GN R 983 (Listing Notice 1)	19	<p><i>The infilling or depositing of any material of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic meters from a watercourse; ...</i></p> <p><b>As mentioned above, the proposed new rising main pipeline, as well as sections of the existing Howiesonspoor Rising Main (which will undergo cathodic protection) cross drainage lines. Drainage lines, being a natural channel in which</b></p>

		<p><b>water flows regularly or intermittently, are included in the definition of a watercourse contained in the NEMA EIA Regulations (2014).</b></p> <p><b>More than 10 cubic metres of soil will be removed or moved from these watercourses to allow for the installation of the new pipe as well as the cathodic protection of the existing pipe.</b></p> <p><b><u>As such, this Listed Activity is triggered.</u></b></p>
<p>GN R 985 (Listing Notice 3)</p>	<p>12</p>	<p><i>The clearance of an area of 300 square meters or more of indigenous vegetation...</i></p> <p><i>(a) in Eastern Cape...:</i></p> <ul style="list-style-type: none"> <li><i>(i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment, 2004;</i></li> <li><i>(ii) Within critical biodiversity areas identified in bioregional plans...</i></li> <li><i>(v) On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.</i></li> </ul> <p><b>The area that will need to be cleared for the installation of the new pipeline is approximately 28 800 square metres, thus exceeding the 300 square metres threshold.</b></p> <p><b>Also, prior to the installation of the continuity bonding and anodes, vegetation of a cumulative total of 1 530m<sup>2</sup> will be required to be cleared for the purposes of opening the pipe joints. This is above the 300 square meters' threshold.</b></p> <p><b>According to Mucina &amp; Rutherford (2006), the proposed pipeline and cathodic protection sections fall within areas identified as supporting Kowie Thicket, Bhisho Thornveld, Suurberg Quartzite Fynbos and Suurberg Shale Fynbos. None of these vegetation types are listed as critically endangered or endangered in terms of section 52 of NEMBA (as published in GN 1002 of 9 December 2011). In terms of the National Spatial Biodiversity Assessment (2004), these vegetation types are listed as Least Threatened.</b></p> <p><b>In addition, the Eastern Cape Biodiversity Conservation Plan (ECBCP, 2007) itself is not a Bioregional Plan, but is rather deemed in terms of the 2014 EIA Regulations to be a Systematic Biodiversity Conservation Plan adopted by the competent authority. Therefore, although the site falls within Critical Biodiversity Areas (CBAs) as contemplated in the ECBCP, this is not one of the geographical areas as contemplated in Activity 12.</b></p> <p><b>The proposed development will occur within the Thomas Baines Nature Reserve which was declared as a Nature Reserve in 1980, and therefore the land is zoned as conservation.</b></p>

		<p><b>Thus, the clearance of indigenous vegetation to allow for the installation of the proposed pipe will not trigger part (i) or (ii), but will trigger part (v) of this Listed Activity.</b></p> <p><b><u>This Listed Activity is therefore triggered by the proposed development.</u></b></p>
<p>GN R 985 (Listing Notice 3)</p>	<p>14</p>	<p><i>The development of –</i></p> <p><i>...(ii) infrastructure or structures with a physical footprint of 10 square meters or more:</i></p> <p><i>where such development occurs –</i></p> <p><i>(a) within a watercourse; or...</i></p> <p><i>(b) ... within 32 meters of a watercourse, measured from the edge of the watercourse; ...</i></p> <p><i>(a) In Eastern Cape:</i></p> <p><i>i. Outside urban areas:</i></p> <p><i>(aa) A protected area identified in terms of NEMPAA, excluding conservancies;</i></p> <p><i>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p> <p><i>(hh) Areas within...5 kilometres from any other protected area identified in terms of NEMPAA...</i></p> <p><b>As indicated in Figure 5, it appears that the proposed development (new pipeline and the cathodic protection) will cross several drainage lines.</b></p> <p><b>It is understood that the development footprint of the sections of the proposed pipeline and cathodic protection sections occurring within and within 32 m of these drainage lines (watercourses) will exceed the 10 m<sup>2</sup> footprint threshold specified in the Listed Activity.</b></p> <p><b>In addition, as dams are included within the scope of a watercourse, as defined in the EIA Regulations, the section of the new pipeline and the fist cathodic protection section (southern) occurring within 32 m of the Howiesonspoot Dam will also trigger this Listed Activity.</b></p> <p><b>The site falls within Critical Biodiversity Areas (CBAs) as contemplated in the ECBCP (2007) which is deemed a Systematic Biodiversity Conservation Plan adopted by the competent authority in terms of the 2014 EIA Regulations.</b></p> <p><b>Furthermore, the proposed development will occur within the Thomas Baines Nature Reserve, which was declared as a Nature Reserve in 1980 and has been recognised as a Protected Area in the National Environmental Management Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA).</b></p> <p><b><u>This Listed Activity is therefore triggered by the proposed development.</u></b></p>

As the activities triggered are listed in Listing Notices 1 and 3, the proposed development requires **Environmental Authorisation** subject to a **Basic Assessment** process.

#### **b. National Water Act, 1998**

Section 21 of the NWA, 1998 (Act No. 36 of 1998) lists activities which are defined as Water Uses. The Act specifies that if certain thresholds are exceeded when undertaking these Water Uses, an application for General Authorisation or a Water Use Licence from the Department of Water and Sanitation (DWS) is required. The following two water uses may be relevant to the proposed development, rendering the need for an authorisation necessary:

- (c) Impeding or diverting the flow of water in a watercourse; and*
- (i) Altering the bed, banks, course or characteristics of a watercourse.*

As such, a Risk Assessment, as provided in Appendix A of GN 509 of 26 August 2016, will be undertaken to confirm the type of authorisation required: General Authorisation or a Water Use Licence. If the results of the assessment indicate low risk, the development can be generally authorised. If, however, the assessment indicates medium or high risks, then a licence will need to be applied for.

### **6) MAINTENANCE MANAGEMENT PLAN**

A *Maintenance Management Plan*, as per the definition in the EIA Regulations (GN R983) is “a management plan for maintenance purposes defined or adopted by the competent authority” where *maintenance* refers to “actions performed to keep a structure or system functioning or in service on the same location, capacity or footprint”, will be developed by Terratest (Pty) Ltd with input from the Engineers, Bosch Projects (Pty) Ltd. The intention is that this Plan be circulated for review and comment, and submitted for approval by the DEDEAT, together with the Basic Assessment Report (see Section 7).

### **7) ENVIRONMENTAL SCOPE OF WORK**

The required Basic Assessment process will be undertaken in accordance with the requirements of NEMA and the EIA Regulations (2014). The Environmental Assessment Practitioner (EAP) is required to conduct the environmental application process and manage the public participation process, which is currently underway. As part of this process, Terratest (Pty) Ltd will perform the following:

1. Identify and notify key stakeholders, authorities and municipalities, environmental groups and interested or affected parties, hereafter referred to as Interested & Affected Parties (IAPs);
2. Compile a detailed Background Information Document (BID) for the proposed development (this document), providing details to IAPs of:
  - a. The listed activities that trigger the Environmental Authorisation process;
  - b. The scope of work;
  - c. The locality and current land use at the site;

- d. A site description;
  - e. The Basic Assessment process to be followed; and
  - f. The opportunity for IAPs to comment on the project.
3. Advertise the environmental application in a newspaper applicable to the region;
  4. Place a notification poster/posters on and surrounding the site;
  5. Obtain consent from the landowner to undertake the application process (if necessary);
  6. Attend Public Liaison Committee (PLC) meetings and workshops, where necessary;
  7. Host a Public meeting, if necessary, providing details of issues identified by the EAP, stakeholders and IAPs;
  8. Record all comments of IAPs and present such comments, as well as responses provided by Terratest (Pty) Ltd, in a full Comments and Responses Report, for inclusion into the Basic Assessment Report (BAR) which will be submitted to DEDEAT for decision-making; and
  9. Circulate all IAP comments to the project team.

The Draft BAR will be made available to all relevant stakeholders and registered IAPs for comment, before being submitted to the DEDEAT.

### **8) HOW DO I PARTICIPATE?**

Every proposed development has the potential to significantly affect the natural, social and economic environments, both at, as well as surrounding the proposed site. For this reason it is imperative that you as a stakeholder or an IAP comment on the proposed project and **highlight any issues or concerns** that you feel need to be considered during the proposed planning and implementation process.

Should you wish to register as an IAP or should you have any comments regarding the proposed development, please **state your interest** in the proposed development along with any **comments or queries** you may, on the form provided.

Please return these comments, via email, fax or post to details provided. Alternatively, the EAP listed below can be contacted directly.

Registered IAPs will be included in our database which will ensure that you are directly informed of any important dates, availability of documents, etc.

Please do extend this invitation to comment to others whom you believe may also be affected by, or would be interested in this project.

**PROPOSED REFURBISHMENT OF THE WAINNEK BULK WATER SUPPLY SYSTEM, NEAR GRAHAMSTOWN, WITHIN THE MAKANA LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE**

REGISTRATION FORM
<b>Name:</b> <b>Surname</b> <b>Postal Address:</b>  <b>Postal Code:</b>  <b>Tel No:</b> <b>Fax No:</b> <b>Cell No:</b>  <b>E-mail :</b>
<b>Please state your interest in the proposed project:</b>
<b>Comments: (add extra pages should you need)</b>
<b>Do you require any additional information?</b>
<b>Other parties which you think should be included in the process:</b>
<i>Your comments are highly appreciated, and will be included in the final report to be submitted to the decision-making authorities.</i>
<b>PLEASE RETURN TO:</b> Cherize Mattheus c/o TERRATEST (PTY) LTD PO Box 27308 Greenacres Port Elizabeth 6057 Tel: 041 390 8730 Fax: 041 363 1922 E-mail: <a href="mailto:mattheusc@terratest.co.za">mattheusc@terratest.co.za</a>