



# DRAFT BASIC ASSESSMENT REPORT

for

## PIENAARSTRAND SEWER INFRASTRUCTURE

along

Morrison Road, Eekhorng Street and Bitou Street,  
Great Brak River, Mossel Bay Municipal District,  
Western Cape Province

In terms of the

National Environmental Management Act (Act No. 107  
of 1998, as amended) & 2014 Environmental Impact  
Regulations

**Prepared for Applicant:**

Mossel Bay Municipality

**Date:** 18 June 2026

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**Report Reference:** MOS913/06

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**Case Officer:** Dorien Werth

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**PURPOSE OF THIS REPORT:**

Departmental & Public Review

**APPLICANT:**

Mossel Bay Municipality

**CAPE EAPRAC REFERENCE NO:**

MOS913/06

**SUBMISSION DATE**

19 June 2026

# DRAFT BASIC ASSESSMENT REPORT

in terms of the

National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended &  
Environmental Impact Regulations 2014

## PIENAARSTRAND SEWER INFRASTRUCTURE

**Morrison Road, Eekhoring Street and Bitou Street, Great Brak River, Mossel Bay Municipal District**

Submitted for:

Stakeholder Review & Comment

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**Western Cape  
Government**

Department of Environmental Affairs and  
Development Planning

# **BASIC ASSESSMENT REPORT**

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

**APRIL 2024**

## BASIC ASSESSMENT REPORT

### THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

APRIL 2024

| (For official use only)                           |  |
|---------------------------------------------------|--|
| Pre-application Reference Number (if applicable): |  |
| EIA Application Reference Number:                 |  |
| NEAS Reference Number:                            |  |
| Exemption Reference Number (if applicable):       |  |
| Date BAR received by Department:                  |  |
| Date BAR received by Directorate:                 |  |
| Date BAR received by Case Officer:                |  |

### GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

The Mossel Bay Municipality (hereafter referred to as the Applicant) proposes to upgrade a section of the existing sewer reticulation network in Great Brak River area, extending from **Eekhorning Street** in **Outeniqua Strand** residential suburb (Figure 1 – Green Box) to **Dolphins Creek Golf Estate**, located near **The Island** residential suburb (Figure 1 – Yellow Box) (Figure 1). To support these upgrades a **new sewer pipe line** must be installed along Morrison Road between these pump station locations.



Figure 1: Locality map of Great Brak River. The YELLOW box indicates the Dolphins Creek Golf Estate, while the GREEN box highlights the approximate position of Eekhorning Street (Outeniqua Strand).

The primary objective of this project is to **upgrade two (2) existing sewer conservancy tanks**, one situated in Eekhorning Street (Outeniqua Strand) and the other in Bitou Street (Botha Strand), by

converting them into fully operational pump stations (Figure 2) (Figure 3). While these conservancy tanks were adequate in the past, they have become increasingly costly and difficult to manage as development has expanded in the area. During peak holiday seasons, the tanks often exceed their storage capacity, requiring daily emptying instead of the standard weekly schedule and, in some cases, leading to overflows resulting in pollution and inconvenience to nearby residents.

The **Eekhorning Street Conservancy Tank** is currently servicing 20 residential properties. **Bitou Street Conservancy Tank** is currently servicing 95 residential properties and 32 future residential properties.

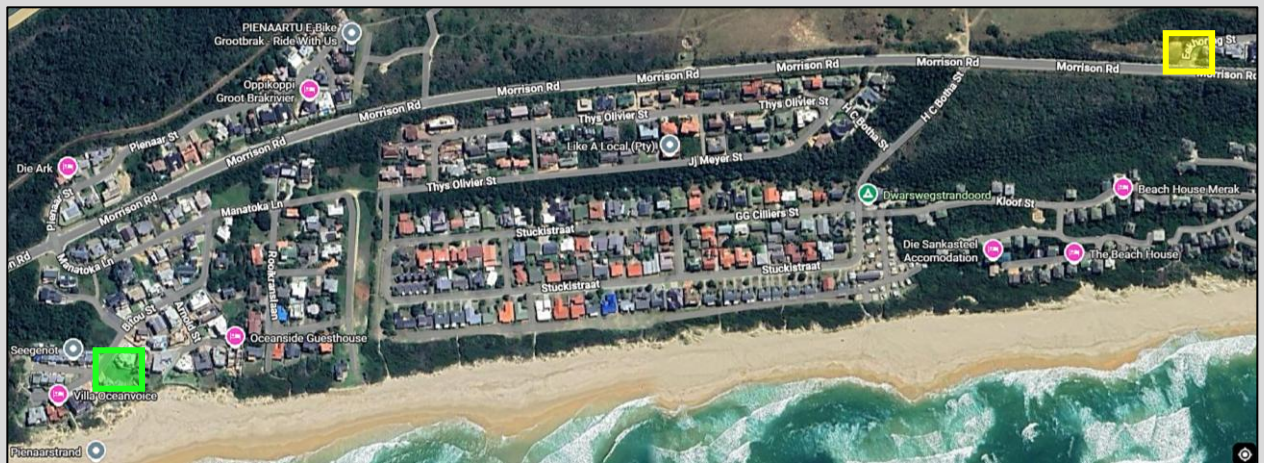


Figure 2: Locality map of the two (2) existing conservancy tanks to be upgraded into pump stations. YELLOW box: Eekhorning Street Conservancy Tank. GREEN box: Bitou Street Conservancy Tank.



Figure 3: Maps & Photographs of the Eekhorning Street Conservancy Tank (Left) and Bitou Street Conservancy Tank (Right).

The **Eekhoring Street Conservancy Tank**, located in the municipal road reserve near the intersection of Eekhoring Street and Morrison Road, covers a footprint of approx. 13m<sup>2</sup>. Modification of this tank involves **internal works** by dividing the existing tank into chambers with masonry walls and the **installation of mechanical sewer pumps** and associated **pipework**. The pumps will be **located in the underground pump sumps**, minimising both noise and odour impacts. Electrical supply to the pump station will be via an **existing miniature substation** in Eekhoring Street.

The **Bitou Street Conservancy Tank**, located on Erf 554 (Municipal Property), covers a footprint of approx. 14m<sup>2</sup>. Modification of this tank involves the **addition of a new pump sump** and **valve chamber next to the existing tank**, thereby **increasing the footprint** from 14m<sup>2</sup> to approx. 24m<sup>2</sup>. **Pipework and sewer manhole modifications** will be conducted around the tank area remaining within the municipal property. The pumps will also be located in the underground pump sumps, minimising both noise and odour impacts. Electrical supply to the pump station will be via an existing substation at Manatoka Lane.

Figure 4 below presents a typical pump station configuration, viewed from above natural ground level (NGL), showing manhole covers, a control panel and a vent pipe.



**Figure 4: Typical pump station configuration, viewed from above natural ground level (NGL), showing manhole covers, a control panel and a vent pipe.**

To support these upgrades, **new sewer pipeline** must be installed **along Morrison Road**, beginning at the proposed Eekhoring Street Pump Station and ending at the existing connection point at Dolphins Creek Golf Estate (Figure 5). From there, the discharge will be accommodated within the existing main municipal infrastructure of Great Brak River.

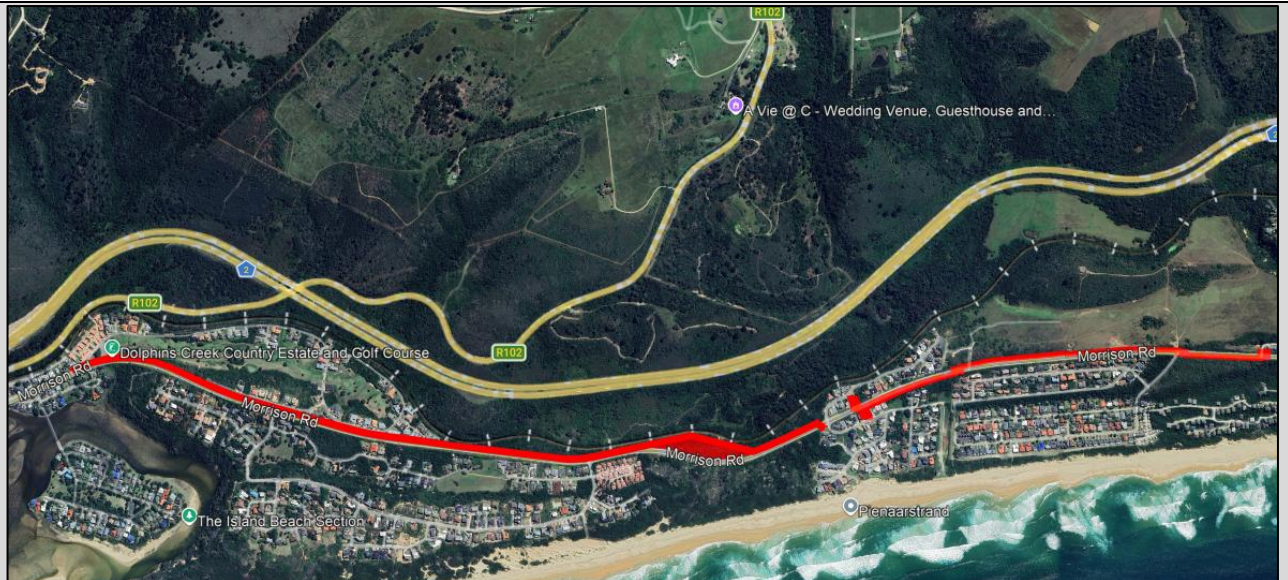


Figure 5: Locality map of the proposed new sewer pipelines along Morrison Road, extending from Eekhorning Street to Dolphins Creek Golf Estate, Great Brak River, Mossel Bay Municipal District (RED solid line).

The supporting new sewer pipeline upgrades are phased into three (3) distinct sections, as outlined below:

### Section 01: New Ø90mm Rising Main

Starting at the Eekhorning Street Pump Station (PS1) location, a **new Ø90 mm rising main** will run along the **Morrison Road reserve** for approximately 1.33km before connecting to a **new transfer manhole**, which will in turn link to the **existing gravity sewer system** at Manatoka Lane (Figure 6).



Figure 6: New Ø90mm Rising Main. BLUE line: Sewer Pipeline. RED polygon: Max Disturbance Footprint.

### Section 02: New Ø160mm Gravity Line

A **new Ø160mm gravity line** will extend from the new manhole in Pienaar Street to the existing manhole in Manatoka Lane traversing **Erf 507, Morrison Road and Erf 516** (approx. 0.1km in length) **within building lines of private erven** (Figure 7).



Figure 7: New Ø160mm sewer gravity pipeline. GREEN line: Sewer Pipeline. RED polygon: Max Disturbance Footprint.

### Section 03: New Ø110mm Rising Main

A **new Ø110mm Rising Main** will extend from Manatoka Lane to Dolphins Creek Golf Estate (approx. 2.41km in length) (Figure 8).

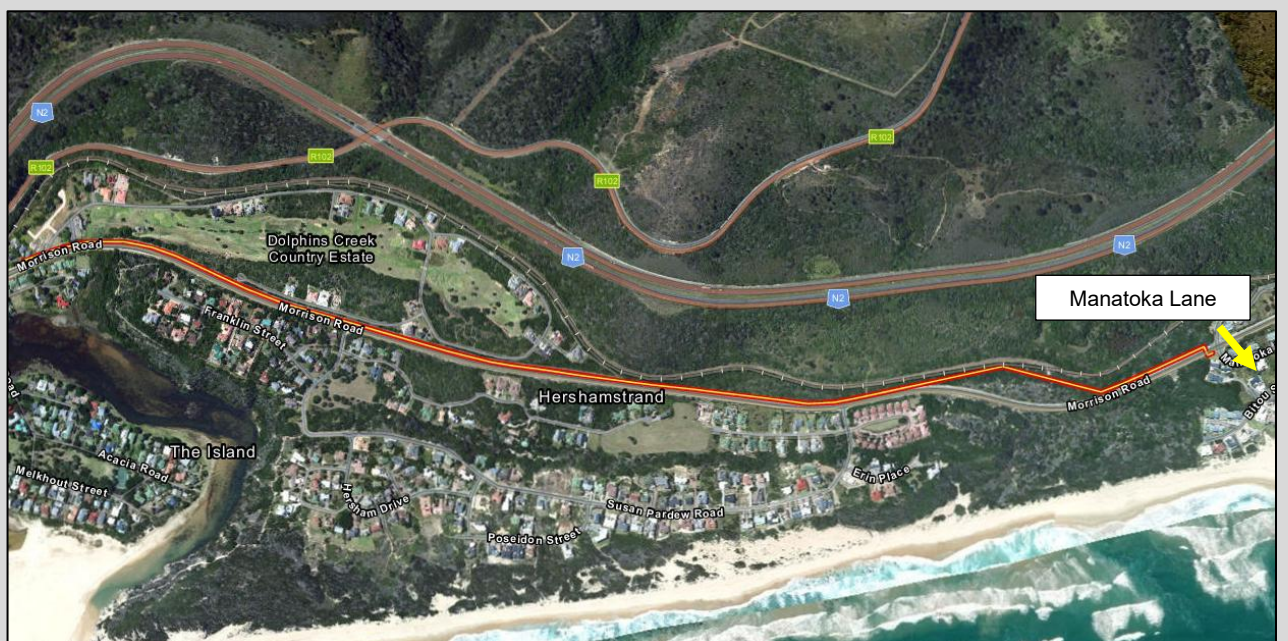


Figure 8: New Ø110mm sewer pipeline. YELLOW line: Sewer Pipeline. RED Polygon: Max Disturbance Envelope.

### Methods of Installation of Sewer Pipeline sections

The majority of the new sewer pipeline sections will be installed within the Morrison Road reserve using the **pipe cracking method**. Pipe cracking, also referred to as pipe bursting, is a **trenchless** technique that **replaces existing pipelines** without the need for extensive trench excavation. Instead, the process fractures an existing pipe while simultaneously drawing a new pipe into position (Figure 9). In this case, the proposal is to replace the existing old asbestos water pipeline with the new sewer pipeline. Pipe Cracking involves **entry pits, exit pits and inspection holes** to fracture the old pipe and pull in the new one. This approach significantly reduces excavation and soil disturbance because existing infrastructure (that will be cracked in the process) remains in-place whilst the new infrastructure is installed within the envelope and footprint of the existing infrastructure.

The **pipe jacking method** will be used where the pipeline **crosses Morrison Road**. This method is also a **trenchless** construction method that installs underground pipelines by using high-capacity hydraulic jacks to **push precast pipes through the ground**. This method also significantly minimise the construction footprint and overall disruption to the surrounding environment/traffic.

**Standard trenching** will be **limited** to areas where the pipe-cracking method cannot be applied, such as sections where the old asbestos water pipeline runs beneath residential erven. In these cases, the routing for the sewer pipeline in those short, affected sections, will be adjusted so that a new section of pipeline (to replace the old section beneath houses/structures) can be installed via trenching. Trenching sections will be restricted to a width of 1m and located mainly within the Morrison Road reserve.

A 3m disturbance envelope will be allowed on either side of the trench for space for machinery and for temporary stockpiles of soil from the trench to be back-filled after installation.

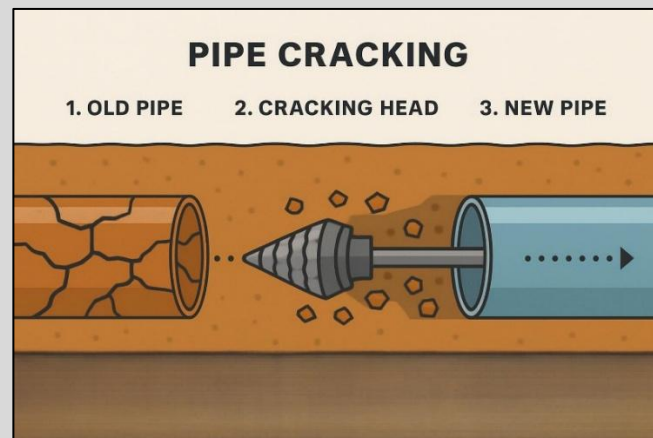


Figure 9: Schematic example of Pipe Cracking

#### Summary of environmental sensitivities and how it has influenced the proposed project

According to *Confluent Environmental* (specialists who conducted aquatic, biodiversity and fauna assessments in the study area) the proposed sewer infrastructure is largely positioned within **already transformed sections** of an established residential area and road reserve.

- The Morrison Road reserve does **not encompass threatened ecosystems, Critical Biodiversity Areas or Ecological Support Areas**.
- From an **aquatic biodiversity perspective**, the proposed sewer infrastructure will **not result in significant or irreversible impacts to any aquatic ecosystems**. The site sensitivity verification verified that all *mapped* watercourses lack the features used to classify formal watercourses in terms of the National Water Act (NWA). Although sections of the project occur within the *mapped* Estuarine Functional Zone (EFZ) and *mapped* flood lines of the Great Brak Estuary, the implementation of appropriate erosion control, watertight infrastructure design and routine maintenance will ensure that potential impacts are **minimal**.
- From a **fauna perspective**, fauna SCCs highlighted by the DFFE Screening Tool have a **very low / low likelihood of occurrence** within the study area. The site sensitivity is deemed low with **no impacts** expected.
- A short section of the proposed new Ø110 mm rising main required further investigation from a **biodiversity & botanical perspective** due to the presence of **intact natural thicket** vegetation (Figure 10). During the site sensitivity verification, the specialist highlighted that the section of the alignment that deviates from the Morrison Road reserve, crosses a steep dune dominated by milkwood trees (Figure 10) (Figure 11). This section traverses **Portion 7 of Farm Searles No. 252**. Standard trenching through this area is expected to result in additional impacts, arising both from the challenges of excavation in steep terrain and the number of trees that would need to be removed. These impacts warrant consideration of alternative routing and/or alternative installation options.



Figure 10: Section across farm property 7/252 Searles where the pipeline deviates from Morrison Road reserve to follow the alignment of an old water pipeline, as per Municipal As-Built Plans. RED rectangle: Approximate Entry/Exit Pits. ORANGE square: Approximate Inspection Holes.



Figure 11: Steep dune covered in milkwood trees where the new pipeline is proposed.

On 04 March 2026, a meeting with the botanical/biodiversity specialist and the engineer confirmed that the **proposed alignment** for this sewer line section, does in fact follow the alignment of an **abandoned Municipal water pipeline** (Municipal As-Built Plans), with the intention to install the new sewer pipeline via Pipe Cracking along this old waterline (Preferred Installation Alternative).

The engineers noted that the actual alignment **may differ from as-built plans**, so as a precautionary step, specialists were tasked to assess potential and actual impacts of Pipe Cracking across the defined area as indicated in Figure 12. The exact alignment will only be verified prior to construction through CCTV inspection (once pits have been opened along the waterline cameras will be used to trace the pipeline route).



**Figure 12: Expanded study area that was assessed by the specialists considering that there is a likelihood that the old water pipeline might not follow the municipal As-Built Plans.**

According to the engineers:

- Three (3) setup positions will be required at the bend points (entry / exit pits), each measuring approximately **9m in length by 1.5m in width** (Figure 10).
- Four (4) inspection holes will be required along the pipeline alignment, each measuring **4m x 4m**, to allow for assessment of the existing line.
- Entry & exit pits, as well as the inspection holes will be excavated by hand.

Taking the above information into account, the botanical/biodiversity specialist has confirmed that applying the Pipe Cracking method anywhere within the defined area (Figure 12) would result in a **minor negative impact**, which is considered acceptable from a botanical and biodiversity perspective although Forestry Permit may be required for trimming/removal of protected trees. **Trenching may not be implemented** in this section of the pipeline.

If Pipe Cracking cannot be implemented (following outcome of CCTV inspection prior to construction), it is then recommended to **re-route this section** and install the pipeline via standard trenching **along Morrison Road**, as indicated in Figure 13. Standard trenching along Morrison Road (Figure 13) is also expected to result in a **minor negative impact** acceptable from a botanical and biodiversity perspective.

Standard trenching along the old water pipeline route (Figure 10) was also assessed as an Alternative, however, would lead to a **moderate negative impact**, which is less acceptable from a biodiversity standpoint. Accordingly, this alternative is **not-preferred** from a botanical/biodiversity perspective.



**Figure 13: Preferred Standard Trenching Route Alignment.**

In conclusion, if the activity is approved and funding made available for implementation by the Municipality, the condition of the old water pipeline along this short section will first be assessed using CCTV inspection to determine whether pipe cracking will work, prior to construction.

If the CCTV results indicate that pipe cracking cannot be implemented, the new sewer pipeline will instead be re-routed to Morrison Road and installed through standard trenching, limited to the area shown in Figure 13.

- The motivation for why the Morrison Road route for this section is not preferred, is that pipe cracking as a *method of installation* is more effective, with less labour requirements and space requirements when compared with trenching. Trenching, especially along a road such as Morrison Road which is a busy road, introduces labour safety constraints (workers needing to work along a busy road and in open trenches), it is a more invasive method which requires more space to accommodate machinery, the trench and stockpiles of the excavated material, it takes longer to install, whereas pipe cracking avoids these construction related risks and impacts.

After mitigation, both preferred installation methods (pipe cracking **or** standard trenching) are expected to result in a minor negative impact.

## IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.
2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".

3. *Submission of documentation, reports and other correspondence:*

The Department has adopted a digital format for corresponding with proponents/applicants or the general public. If there is a conflict between this approach and any provision in the legislation, then the provisions in the legislation prevail. If there is any uncertainty about the requirements or arrangements, the relevant Competent Authority must be consulted.

The Directorate: Development Management has created generic e-mail addresses for the respective Regions, to centralise their administration. Please make use of the relevant general administration e-mail address below when submitting documents:

**[DEADPEIAAdmin@westerncape.gov.za](mailto:DEADPEIAAdmin@westerncape.gov.za)**

Directorate: Development Management (Region 1):  
City of Cape Town; West Coast District Municipal area;  
Cape Winelands District Municipal area and Overberg District Municipal area.

**[DEADPEIAAdmin.George@westerncape.gov.za](mailto:DEADPEIAAdmin.George@westerncape.gov.za)**

Directorate: Development Management (Region 3):  
Garden Route District Municipal area and Central Karoo District Municipal area

General queries must be submitted via the general administration e-mail for EIA related queries. Where a case-officer of DEA&DP has been assigned, correspondence may be directed to such official and copied to the relevant general administration e-mail for record purposes.

All correspondence, comments, requests and decisions in terms of applications, will be issued to either the applicant/requester in a digital format via email, with digital signatures, and copied to the Environmental Assessment Practitioner ("EAP") (where applicable).

4. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.
5. All applicable sections of this BAR must be completed.
6. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.
7. This BAR is current as of **April 2024**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at <http://www.westerncape.gov.za> to check for the latest version of this BAR.
8. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations

when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.

9. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
10. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.
11. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.
12. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.
13. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.
14. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link <https://screening.environment.gov.za/screeningtool> to generate the Screening Tool Report. The screening tool report must be attached to this BAR.
15. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ('NEM:AQA'), the submission of the Report must also be made as follows, for-  
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

| DEPARTMENTAL DETAILS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAPE TOWN OFFICE:<br>DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 1)<br>(City of Cape Town, West Coast District,<br>Cape Winelands District & Overberg District)                                                                                                                                                                                                                                                                                                                                                                                                                                       | GEORGE REGIONAL OFFICE:<br>DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 3)<br>(Central Karoo District & Garden Route District)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p>The completed Form must be sent via electronic mail to:<br/><a href="mailto:DEADPEIAAdmin@westerncape.gov.za">DEADPEIAAdmin@westerncape.gov.za</a></p> <p>Queries should be directed to the Directorate:<br/>Development Management (Region 1) at:<br/>E-mail: <a href="mailto:DEADPEIAAdmin@westerncape.gov.za">DEADPEIAAdmin@westerncape.gov.za</a><br/>Tel: (021) 483-5829</p> <p>Western Cape Government<br/>Department of Environmental Affairs and Development<br/>Planning<br/>Attention: Directorate: Development Management (Region 1)<br/>Private Bag X 9086<br/>Cape Town,<br/>8000</p> | <p>The completed Form must be sent via electronic mail to:<br/><a href="mailto:DEADPEIAAdmin.George@westerncape.gov.za">DEADPEIAAdmin.George@westerncape.gov.za</a></p> <p>Queries should be directed to the Directorate: Development<br/>Management (Region 3) at:<br/>E-mail: <a href="mailto:DEADPEIAAdmin.George@westerncape.gov.za">DEADPEIAAdmin.George@westerncape.gov.za</a><br/>Tel: (044) 814-2006</p> <p>Western Cape Government<br/>Department of Environmental Affairs and Development<br/>Planning<br/>Attention: Directorate: Development Management (Region 3)<br/>Private Bag X 6509<br/>George,<br/>6530</p> |

## MAPS

| Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Locality Map:                                                                                                                                                                   | <p>The scale of the locality map must be at least 1:50 000.<br/>For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map.<br/>The map must indicate the following:</p> <ul style="list-style-type: none"> <li>an accurate indication of the project site position as well as the positions of the alternative sites, if any;</li> <li>road names or numbers of all the major roads as well as the roads that provide access to the site(s)</li> <li>a north arrow;</li> <li>a legend; and</li> <li>a linear scale.</li> </ul> <p>For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken.</p> <p>Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Site Plan:                                                                                                                                                                      | <p>Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:</p> <ul style="list-style-type: none"> <li>The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale.</li> <li>The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan.</li> <li>On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided.</li> <li>The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan.</li> <li>The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan.</li> <li>Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development <b>must</b> be clearly indicated on the site plan.</li> <li>Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.</li> <li>Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to):</li> </ul> |

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                                                          | <ul style="list-style-type: none"> <li>○ Watercourses / Rivers / Wetlands</li> <li>○ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable);</li> <li>○ Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&amp;DP"):</li> <li>○ Ridges;</li> <li>○ Cultural and historical features/landscapes;</li> <li>○ Areas with indigenous vegetation (even if degraded or infested with alien species).</li> </ul> <ul style="list-style-type: none"> <li>● Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted.</li> <li>● North arrow</li> </ul> <p>A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.</p> |
| Site photographs                                         | <p>Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as <b>Appendix C</b>. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.</p>                                                                                                                                                                                                                                                                                          |
| Biodiversity Overlay Map:                                | <p>A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as <b>Appendix D</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Linear activities or development and multiple properties | <p>GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system.</p> <p>Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix.</p> <p>For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as <b>Appendix A3</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## ACRONYMS

|          |                                                              |
|----------|--------------------------------------------------------------|
| DAFF:    | Department of Forestry and Fisheries                         |
| DEA:     | Department of Environmental Affairs                          |
| DEA& DP: | Department of Environmental Affairs and Development Planning |
| DHS:     | Department of Human Settlement                               |
| DoA:     | Department of Agriculture                                    |
| DoH:     | Department of Health                                         |
| DWS:     | Department of Water and Sanitation                           |
| EMPr:    | Environmental Management Programme                           |
| HWC:     | Heritage Western Cape                                        |
| NFEPA:   | National Freshwater Ecosystem Protection Assessment          |
| NSBA:    | National Spatial Biodiversity Assessment                     |
| TOR:     | Terms of Reference                                           |
| WCBSP:   | Western Cape Biodiversity Spatial Plan                       |
| WCG:     | Western Cape Government                                      |

## ATTACHMENTS

**Note:** The Appendices must be attached to the BAR as per the list below. Please use a ✓ (tick) or a x (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

| APPENDIX    |                                                                                                                                                  |                                                                                                                                                                                                                                                         | ✓ (Tick) or<br>x (cross) |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Appendix A: | Maps                                                                                                                                             |                                                                                                                                                                                                                                                         |                          |
|             | Appendix A1:                                                                                                                                     | Locality Map                                                                                                                                                                                                                                            | ✓                        |
|             | Appendix A2:                                                                                                                                     | Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning                                                                                                              | ✓                        |
|             | Appendix A3:                                                                                                                                     | Map with the GPS co-ordinates for linear activities                                                                                                                                                                                                     | ✓                        |
| Appendix B: | Appendix B1:                                                                                                                                     | Site development plan(s)                                                                                                                                                                                                                                | ✓                        |
|             | Appendix B2                                                                                                                                      | A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas; | ✓                        |
| Appendix C: | Photographs                                                                                                                                      |                                                                                                                                                                                                                                                         | ✓                        |
| Appendix D: | Biodiversity overlay map                                                                                                                         |                                                                                                                                                                                                                                                         | ✓                        |
| Appendix E: | Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality. |                                                                                                                                                                                                                                                         |                          |
|             | Appendix E1:                                                                                                                                     | Final comment/ROD from HWC                                                                                                                                                                                                                              | ✓                        |
|             | Appendix E2:                                                                                                                                     | Copy of comment from Cape Nature                                                                                                                                                                                                                        | X                        |
|             | Appendix E3:                                                                                                                                     | Final Comment from the DWS                                                                                                                                                                                                                              | X                        |
|             | Appendix E4:                                                                                                                                     | Comment from the DEA: Oceans and Coast                                                                                                                                                                                                                  | X                        |
|             | Appendix E5:                                                                                                                                     | Comment from the DAFF                                                                                                                                                                                                                                   | X                        |
|             | Appendix E6:                                                                                                                                     | Comment from WCG: Transport and Public Works                                                                                                                                                                                                            | X                        |
|             | Appendix E7:                                                                                                                                     | Comment from WCG: DoA                                                                                                                                                                                                                                   | X                        |
|             | Appendix E8:                                                                                                                                     | Comment from WCG: DHS                                                                                                                                                                                                                                   | X                        |

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|             | Appendix E9:                                                                                                                                                                                                    | Comment from WCG: DoH                                                             | X          |
|             | Appendix E10:                                                                                                                                                                                                   | Comment from DEA&DP: Pollution Management                                         | X          |
|             | Appendix E11:                                                                                                                                                                                                   | Comment from DEA&DP: Waste Management                                             | X          |
|             | Appendix E12:                                                                                                                                                                                                   | Comment from DEA&DP: Biodiversity                                                 | X          |
|             | Appendix E13:                                                                                                                                                                                                   | Comment from DEA&DP: Air Quality                                                  | X          |
|             | Appendix E14:                                                                                                                                                                                                   | Comment from DEA&DP: Coastal Management                                           | X          |
|             | Appendix E15:                                                                                                                                                                                                   | Comment from the local authority                                                  | X          |
|             | Appendix E16:                                                                                                                                                                                                   | Confirmation of all services (water, electricity, sewage, solid waste management) | X          |
|             | Appendix E17:                                                                                                                                                                                                   | Comment from the District Municipality                                            | X          |
|             | Appendix E18:                                                                                                                                                                                                   | Copy of an exemption notice                                                       | X          |
|             | Appendix E19:                                                                                                                                                                                                   | Pre-approval for the reclamation of land                                          | X          |
|             | Appendix E20:                                                                                                                                                                                                   | Proof of agreement/TOR of the specialist studies conducted.                       | X          |
|             | Appendix E21:                                                                                                                                                                                                   | Proof of land use rights                                                          | ✓          |
|             | Appendix E22:                                                                                                                                                                                                   | Proof of public participation agreement for linear activities                     | X          |
| Appendix F: | Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required. |                                                                                   | ✓          |
| Appendix G: | Specialist Report(s)                                                                                                                                                                                            |                                                                                   | ✓          |
| Appendix H: | EMPr                                                                                                                                                                                                            |                                                                                   | ✓          |
| Appendix I: | Screening tool report                                                                                                                                                                                           |                                                                                   | ✓          |
| Appendix J: | The impact and risk assessment for each alternative                                                                                                                                                             |                                                                                   | X (in BAR) |
| Appendix K: | Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline                  |                                                                                   | X (in BAR) |
| Appendix L: | Provincial Roads Approval Letter                                                                                                                                                                                |                                                                                   | ✓          |

## SECTION A: ADMINISTRATIVE DETAILS

|                                                                                                                                                                                                                                                                                                          |                                                                              |                                               |                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------|
| Highlight the Departmental Region in which the intended application will fall                                                                                                                                                                                                                            | CAPE TOWN OFFICE: REGION 1                                                   |                                               | GEORGE OFFICE: REGION 3                          |
|                                                                                                                                                                                                                                                                                                          | (City of Cape Town, West Coast District)                                     | (Cape Winelands District & Overberg District) | (Central Karoo District & Garden Route District) |
| <b>Duplicate this section where there is more than one Proponent</b><br>Name of Applicant/Proponent:<br>Name of contact person for Applicant/Proponent (if other):<br>Company/ Trading name/State Department/Organ of State:<br>Company Registration Number:<br>Postal address:<br>Telephone:<br>E-mail: | Mossel Bay Municipality                                                      |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | Eric Louw (contact person)<br>Dick Naidoo (signatory)                        |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          |                                                                              |                                               |                                                  |
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|                                                                                                                                                                                                                                                                                                          | 101 Marsh Street                                                             |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | Mossel Bay                                                                   |                                               | Postal code: 6500                                |
|                                                                                                                                                                                                                                                                                                          | 044 606 5255                                                                 |                                               | Cell:                                            |
|                                                                                                                                                                                                                                                                                                          | elouw@mosselbay.gov.za                                                       |                                               | Fax: (    )                                      |
|                                                                                                                                                                                                                                                                                                          |                                                                              |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          |                                                                              |                                               |                                                  |
| Company of EAP:<br>EAP name:<br>Postal address:<br>Telephone:<br>E-mail:<br>Qualifications:<br>EAP registration no:                                                                                                                                                                                      | Cape Environmental Assessment Practitioners (Cape EAPrac)                    |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | Louise-Mari van Zyl (Appointed EAP) / Mariska Byleveld (Candidate EAP)       |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | PO Box 2070                                                                  |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | George                                                                       |                                               | Postal code: 6530                                |
|                                                                                                                                                                                                                                                                                                          | 044 874 0365                                                                 |                                               | Cell: 071 603 4132 / 084 5036 587                |
|                                                                                                                                                                                                                                                                                                          | louise@cape-eaprac.co.za<br>mariska@cape-eaprac.co.za                        |                                               | Fax: (    )                                      |
|                                                                                                                                                                                                                                                                                                          | Louise-Mari van Zyl: MA Geography [US]   Mariska Byleveld: MSc Geology [UFS] |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | Louise-Mari van Zyl: 2019/1444   Mariska Byleveld: 2023/6593                 |                                               |                                                  |
| <b>Duplicate this section where there is more than one landowner</b><br>Name of landowner:<br>Name of contact person for landowner (if other):<br>Postal address:<br>Telephone:<br>E-mail:                                                                                                               | Mossel Bay Municipality                                                      |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | Eric Louw (contact person)<br>Dick Naidoo (signatory)                        |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | 101 Marsh Street                                                             |                                               |                                                  |
|                                                                                                                                                                                                                                                                                                          | Mossel Bay                                                                   |                                               | Postal code: 6500                                |
|                                                                                                                                                                                                                                                                                                          | 044 606 5255                                                                 |                                               | Cell:                                            |
|                                                                                                                                                                                                                                                                                                          | elouw@mosselbay.gov.za                                                       |                                               | Fax: (    )                                      |
|                                                                                                                                                                                                                                                                                                          |                                                                              |                                               |                                                  |
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| The new supporting sewer pipelines, crossing the private properties listed below, are deemed to be a LINEAR ACTIVITY, for which written consent is not required (contact details of affected landowners are redacted to protect privacy details).                                                        |                                                                              |                                               |                                                  |
| <b>Duplicate this section where there is more than one landowner</b><br>Name of landowner:<br>Name of contact person for landowner (if other):<br>Postal address:<br>Telephone:<br>E-mail:                                                                                                               | Erf 4127                                                                     |                                               |                                                  |
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| <b>Duplicate this section where there is more than one landowner</b><br>Name of landowner:<br>Name of contact person for landowner (if other):<br>Postal address:                                                                                                                                        | Portion 7 of Farm SEARLES no. 252                                            |                                               |                                                  |
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| Telephone:<br>E-mail:                                                                                                                                                                                                                       |                                                       |                   |
| <b>Duplicate this section where there is more than one landowner</b><br>Name of landowner:<br>Name of contact person for landowner (if other):<br>Postal address:<br><br>Telephone:<br>E-mail:                                              | Erf 507                                               |                   |
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| <b>Duplicate this section where there is more than one landowner</b><br>Name of landowner:<br>Name of contact person for landowner (if other):<br>Postal address:<br><br>Telephone:<br>E-mail:                                              | Farm 373                                              |                   |
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| <b>Duplicate this section where there is more than one landowner</b><br>Name of landowner:<br>Name of contact person for landowner (if other):<br>Postal address:<br><br>Telephone:<br>E-mail:                                              | Erf 610                                               |                   |
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|                                                                                                                                                                                                                                             |                                                       |                   |
| <b>Duplicate this section where there is more than one Municipal Jurisdiction</b><br>Municipality in whose area of jurisdiction the proposed activity will fall:<br><br>Contact person:<br><br>Postal address:<br><br>Telephone:<br>E-mail: | Mossel Bay Municipality                               |                   |
|                                                                                                                                                                                                                                             | Eric Louw (contact person)<br>Dick Naidoo (signatory) |                   |
|                                                                                                                                                                                                                                             | 101 Marsh Street                                      |                   |
|                                                                                                                                                                                                                                             | Mossel Bay                                            | Postal code: 6500 |
|                                                                                                                                                                                                                                             | 044 606 5255                                          | Cell:             |
|                                                                                                                                                                                                                                             | elouw@mosselbay.gov.za                                | Fax: ( )          |
|                                                                                                                                                                                                                                             |                                                       |                   |
|                                                                                                                                                                                                                                             |                                                       |                   |

## SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INCLUDED IN THE APPLICATION FORM

|    |                                                                          |     |                                     |           |  |
|----|--------------------------------------------------------------------------|-----|-------------------------------------|-----------|--|
| 1. | Is the proposed development (please tick):                               | New | <input checked="" type="checkbox"/> | Expansion |  |
| 2. | Is the proposed site(s) a brownfield or greenfield site? Please explain. |     |                                     |           |  |

The proposed site includes the Morrison Road and Eekhoring Street road reserves, Municipal Public Property on Erf 554, the building lines of several private residential erven 507 and 516, as well as the building line of Portion 7 of Farm Searles no. 252.

The area is already highly transformed (Figures 14 – 16):

- Situated within the urban edge of Great Brak River, predominantly characterized by residential development.
- Contains extensive service infrastructure, including fibre, electrical networks, water pipelines and stormwater channels.
- Historical aerial imagery confirms progressive transformation from natural thicket (1939) to full urbanisation (2025).

Both the proposed Eekhoring Street Pump Station and Bitou Street Pump Station are located within areas dominated by lawn and existing sewer infrastructure, including conservancy tanks and sewer pipelines.

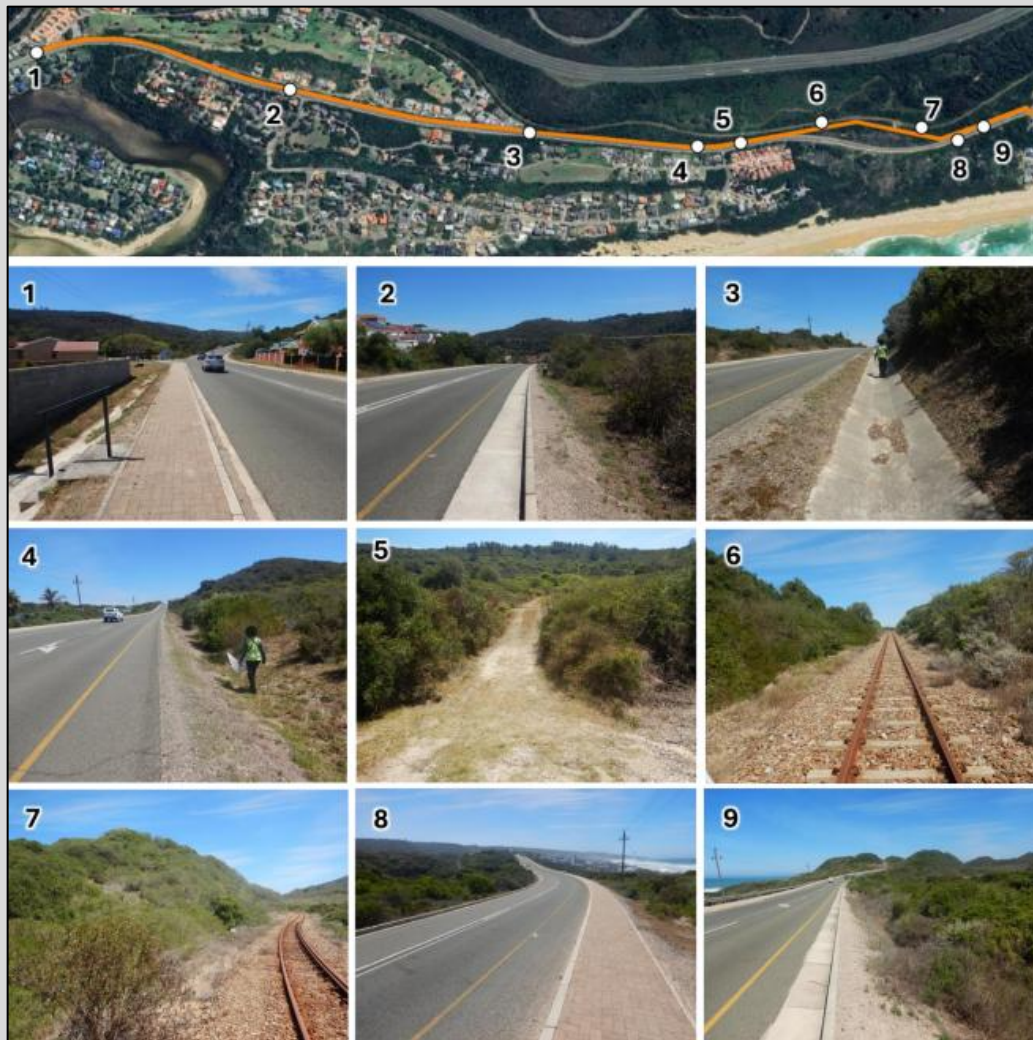


Figure 14: Photographs along alignment of proposed 110mm raising main (Confluent Environmental, 2026).



Figure 15: Photographs along alignment of new 160mm gravity line (Confluent Environmental, 2026).

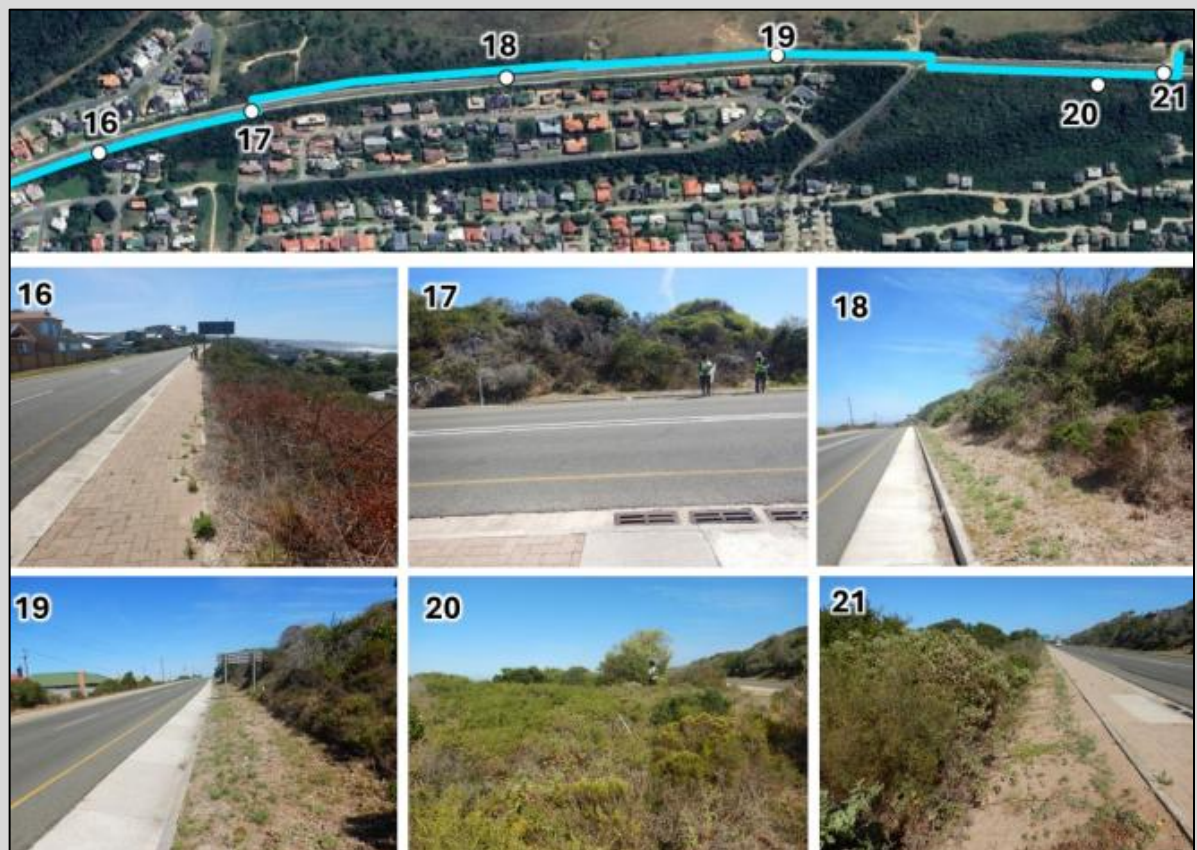


Figure 16: Photographs along alignment of new 90mm rising main (Confluent Environmental, 2026).

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                             |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 3.   | <b>For Linear activities or developments – Supporting Sewer Pipelines</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                             |
| 3.1. | Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                             |
|      | <ul style="list-style-type: none"> <li>• Erf 4127 (Private Property)</li> <li>• Street Parcel ID: RE/2699 (Provincial Road Reserve)</li> <li>• Street Parcel ID: RE/2176 (Provincial Road Reserve)</li> <li>• Portion 7 of Farm SEARLES no. 252 (Private Property)</li> <li>• Street Parcel ID: RE/476 (Provincial Road Reserve)</li> <li>• Erf 507 (Private Property)</li> <li>• Erf 516 (Private Property)</li> <li>• Remainder of Erf 840 (Private Property)</li> <li>• Farm 373 (Private Property)</li> <li>• Street Parcel ID: 465 (Provincial Road Reserve)</li> <li>• Erf 610 (Private Property)</li> <li>• Street Parcel ID: 798 (Provincial Road Reserve)</li> <li>• Street Parcel ID: RE/66/251 (Municipal Road Reserve)</li> </ul> |                                                                                                             |
| 3.2. | Development footprint of the proposed development for all alternatives.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Section 01: $\pm 1\,330\text{m}^2$<br>Section 02: $\pm 100\text{m}^2$<br>Section 03: $\pm 2\,410\text{m}^2$ |
| 3.3. | Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                             |

The proposal is divided into three (3) sections (breakdown provided below):

#### **Section 01: New Ø90mm Rising Main**

| Pipeline Specifications                                         |
|-----------------------------------------------------------------|
| Underground Ø90mm Class 12 HDPE/uPVC pipe                       |
| Trench Length: $\pm 1.33\text{ km}$                             |
| Temporary Disturbance Width: $\pm 7\text{m}$                    |
| Total Disturbance Footprint <sup>1</sup> : $\pm 9310\text{m}^2$ |

A new sewer rising main will be installed from Eekhorng Street Pump Station to Botha Strand, using underground  $\varnothing 90\text{ mm}$  Class 12 HDPE/uPVC pipes. The first 960m will be installed via pipe cracking into an existing redundant water pipe to reduce disturbance. The remaining 370m will be laid via standard trenching and backfilling within the Morrison Road reserve. The pipeline will end at a new sewer transfer (discharge) manhole within the Morrison Road reserve (Figure 17 – Yellow Box).



Figure 17: New Ø90mm Rising Main. BLUE line: Sewer Pipeline. RED polygon: Max Disturbance Footprint.

## Section 02: New Ø160mm Gravity Sewer Line

### Pipeline Specifications

Underground Ø160mm Class uPVC pipe

Length: ±0.1 km

Temporary Disturbance Width: ±7m

Total Disturbance Footprint: ± 700m<sup>2</sup>

A new Ø160mm Gravity Line will extend from a new manhole in Pienaar Street to an existing manhole in Manatoka Lane traversing Erf 507, Morrison Road and Erf 516 (approx. 0.1km in length) (Figure 18).



Figure 18: New Ø160mm sewer pipeline. GREEN line: Sewer Pipeline. RED polygon: Max Disturbance Footprint.

## Section 03: New Ø110mm Rising Main

### Pipeline Specifications

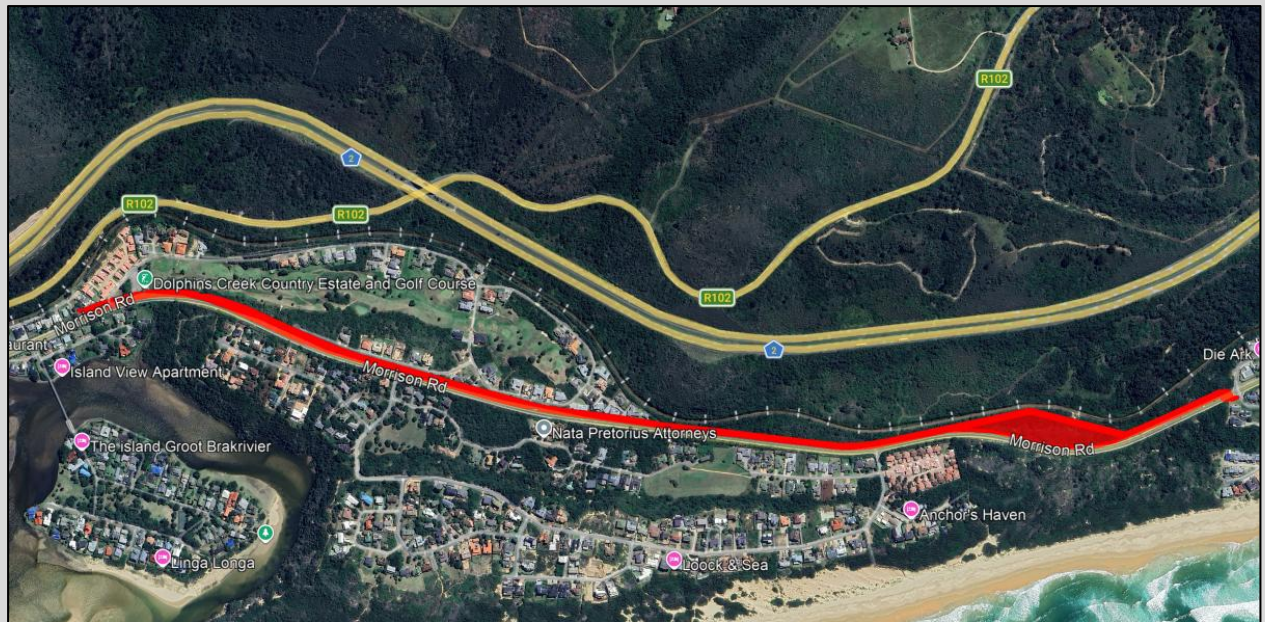
Underground Ø110mm Class 12 HDPE / uPVC pipe

Length: ±2.41 km

Temporary Disturbance Width: ±7m

Total Disturbance Footprint: ± 16 870m<sup>2</sup>

The proposed Bitou Street Pump Station (PS2) at Botha Strand will pump sewage through an existing underground Ø110 mm uPVC rising main, which terminates at Morrison Road. This rising main will connect to a new underground Ø110 mm Class 12 uPVC/HDPE rising main, installed along Morrison Road and Farm 252/7 using either pipe cracking or standard trenching (Figure 19). The new rising main will ultimately discharge into an existing municipal sewer manhole near Dolphins Creek Golf Estate, which connects downstream to the main municipal sewer infrastructure at Great Brak River.



**Figure 19: New Ø110mm sewer pipeline. YELLOW line: Sewer Pipeline. RED Polygon: Max Disturbance Envelope.**

3.4. Indicate how access to the proposed routes will be obtained for all alternatives.

Access routes will make use of the existing provincial roads and municipal streets.

|      |                                                                            |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------|----------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.5. | SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives | C | 0 | 5 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 1 | 2 | 7 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 5 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 6 | 9 | 9 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 5 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 1 | 7 | 6 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 7 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 6 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 7 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 3 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 5 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 9 | 8 | 0 | 0 | 0 | 0 | 0 |
|      |                                                                            | C | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 1 | 0 | 0 | 0 | 6 | 6 |

3.6. Starting point co-ordinates for all alternatives (Ø90mm rising main)

|                                                                           |               |  |  |
|---------------------------------------------------------------------------|---------------|--|--|
| Latitude (S)                                                              | 34° 2'56.45"S |  |  |
| Longitude (E)                                                             | 22°16'40.96"E |  |  |
| <b>Middle point co-ordinates for all alternatives (Ø90mm rising main)</b> |               |  |  |
| Latitude (S)                                                              | 34° 2'56.86"S |  |  |
| Longitude (E)                                                             | 22°16'17.25"E |  |  |
| <b>End point co-ordinates for all alternatives (Ø90mm rising main)</b>    |               |  |  |
| Latitude (S)                                                              | 34° 3'2.27"S  |  |  |
| Longitude (E)                                                             | 22°15'52.60"E |  |  |

**Starting point co-ordinates for all alternatives (Ø160mm gravity line)**

|                                                                             |               |  |  |
|-----------------------------------------------------------------------------|---------------|--|--|
| Latitude (S)                                                                | 34° 3'1.07"S  |  |  |
| Longitude (E)                                                               | 22°15'51.16"E |  |  |
| <b>Middle point co-ordinates for all alternatives (Ø160mm gravity line)</b> |               |  |  |
| Latitude (S)                                                                | 34° 3'2.35"S  |  |  |
| Longitude (E)                                                               | 22°15'51.76"E |  |  |
| <b>End point co-ordinates for all alternatives (Ø160mm gravity line)</b>    |               |  |  |
| Latitude (S)                                                                | 34° 3'3.31"S  |  |  |
| Longitude (E)                                                               | 22°15'53.07"E |  |  |

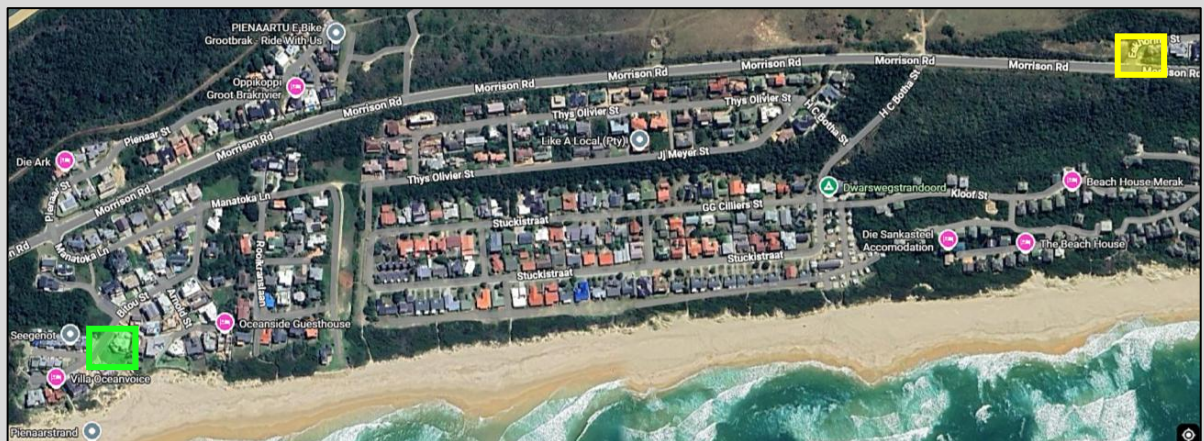
| Starting point co-ordinates for all alternatives (Ø110mm rising main) |               |  |  |
|-----------------------------------------------------------------------|---------------|--|--|
| Latitude (S)                                                          | 34° 3'4.07"S  |  |  |
| Longitude (E)                                                         | 22°15'47.97"E |  |  |
| Middle point co-ordinates for all alternatives (Ø110mm rising main)   |               |  |  |
| Latitude (S)                                                          | 34° 3'5.07"S  |  |  |
| Longitude (E)                                                         | 22°14'56.10"E |  |  |
| End point co-ordinates for all alternatives (Ø110mm rising main)      |               |  |  |
| Latitude (S)                                                          | 34° 2'58.36"S |  |  |
| Longitude (E)                                                         | 22°14'17.72"E |  |  |

**Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.**

| 4. Other developments – Upgrade of Eekhorning Street Conservancy Tank & Bitou Street Conservancy Tank |                                                                                                                                                                                                                                               |                                                                                                                         |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 4.1.                                                                                                  | Property size(s) of all proposed site(s):                                                                                                                                                                                                     | RE/66/251: 9450.55m <sup>2</sup><br>Erf 554: 10 603.36m <sup>2</sup>                                                    |
| 4.2.                                                                                                  | Developed footprint of the existing facility and associated infrastructure (if applicable):                                                                                                                                                   |                                                                                                                         |
| 4.3.                                                                                                  | Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:                                                                                                                                 | Eekhorning Street Pump Station:<br><b>±13m<sup>2</sup></b><br><br>Bitou Street Pump Station:<br><b>±24m<sup>2</sup></b> |
| 4.4.                                                                                                  | Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities). |                                                                                                                         |

The primary objective of this project is to **upgrade two (2) existing sewer conservancy tanks**, one situated in Eekhorning Street (Outeniqua Strand) and the other in Bitou Street (Botha Strand), by converting them into fully operational pump stations (Figure 20)(Figure 21). While these conservancy tanks were adequate in the past, they have become increasingly costly and difficult to manage as development has expanded. During peak holiday seasons, the tanks often exceed their storage capacity, requiring daily emptying instead of the standard weekly schedule and, in some cases, leading to overflows.

The **Eekhorning Street Conservancy Tank** is currently servicing 20 residential properties. **Bitou Street Conservancy Tank** is currently servicing 95 residential properties and 32 future residential properties.



**Figure 20: Locality map of the two (2) existing conservancy tanks to be upgraded into pump stations. YELLOW box: Eekhorning Street Conservancy Tank. GREEN box: Bitou Street Conservancy Tank.**



**Figure 21: Maps & Photographs of the Eekhoring Street Conservancy Tank (Left) and Bitou Street Conservancy Tank (Right).**

The **Eekhoring Street Conservancy Tank**, located in the road reserve near the intersection of Eekhoring Street and Morrison Road, covers a footprint of approx. 13m<sup>2</sup>. Modification of this tank involves internal works by dividing the existing tank into chambers with masonry walls and the installation of mechanical sewer pumps and associated pipework. The pumps will be located in the underground pump sumps, minimising both noise and odour impacts. Electrical supply to the pump station will be via an existing miniature substation in Eekhoring Street.

The **Bitou Street Conservancy Tank**, located on Erf 554 (Municipal Property), covers a footprint of approx. 14m<sup>2</sup>. Modification of this tank involve the addition of a new pump sump and valve chamber next to the existing tank, thereby increasing the footprint from 14m<sup>2</sup> to approx. 24m<sup>2</sup>. Pipework and sewer manhole modifications will be conducted around the tank area remaining within the municipal property. The pumps will also be located in the underground pump sumps, minimising both noise and odour impacts. Electrical supply to the pump station will be via an existing substation at Manatoka Lane.

Figure 22 below presents a typical pump station configuration, viewed from above natural ground level (NGL), showing manhole covers, a control panel and a vent pipe.



**Figure 22: Typical pump station configuration, viewed from above natural ground level (NGL), showing manhole covers, a control panel and a vent pipe.**

4.5. Indicate how access to the proposed site(s) will be obtained for all alternatives.

Existing Municipal Streets & Provincial Road (Morrison Road).

|      |                                                                |   |   |   |   |     |   |   |   |   |     |   |   |   |   |       |   |   |   |   |
|------|----------------------------------------------------------------|---|---|---|---|-----|---|---|---|---|-----|---|---|---|---|-------|---|---|---|---|
| 4.6. | SG Digit code(s) of the proposed site(s) for all alternatives: | C | 0 | 2 | 7 | 0   | 0 | 0 | 0 | 0 | 0   | 0 | 2 | 5 | 1 | 0     | 0 | 0 | 6 | 6 |
|      |                                                                | C | 0 | 2 | 7 | 0   | 0 | 0 | 3 | 0 | 0   | 0 | 0 | 5 | 5 | 4     | 0 | 0 | 0 | 0 |
| 4.7. | Coordinates of the proposed site(s) for all alternatives:      |   |   |   |   |     |   |   |   |   |     |   |   |   |   |       |   |   |   |   |
|      | Eekhoring Street Pump Station                                  |   |   |   |   |     |   |   |   |   |     |   |   |   |   |       |   |   |   |   |
|      | Latitude (S)                                                   |   |   |   |   | 34° |   |   |   |   | 02' |   |   |   |   | 56.5" |   |   |   |   |
|      | Longitude (E)                                                  |   |   |   |   | 22° |   |   |   |   | 16' |   |   |   |   | 40.9" |   |   |   |   |
|      | Bitou Street Pump Station                                      |   |   |   |   |     |   |   |   |   |     |   |   |   |   |       |   |   |   |   |
|      | Latitude (S)                                                   |   |   |   |   | 34° |   |   |   |   | 03' |   |   |   |   | 08.2" |   |   |   |   |
|      | Longitude (E)                                                  |   |   |   |   | 22° |   |   |   |   | 15' |   |   |   |   | 51.0" |   |   |   |   |

## SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

### 1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

|                                                                                                                                                   |     |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18. | YES | NO |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|

### 2. Is the following legislation applicable to the proposed activity or development.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.                                                                                                                                                                                                                           | YES | NO |
| Approximately 180m of Section 03 (new 110mm sewer pipeline within Morrison Road reserve adjacent to the Dolphin Creek Golf Estate) will fall within the Coastal Management Line (CML), the Coastal Protection Zone (CPZ) and Estuarine Functional Zone (EFZ) of the Great Brak Estuary. The Bitou Street Pump Station itself will also be located inside the CML. The DEA&DP: Biodiversity & Coastal Management and DFFE: Oceans & Coast have been approached for comment.                          |     |    |
| The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1.                                                                                                                                                                                                                                                                                                                                            | YES | NO |
| A Notice of Intent to Develop (NID) was submitted to Heritage Western Cape (HWC) who confirmed that no further action is required (Appendix E1). HWC has been approached for comment on this Draft BAR.                                                                                                                                                                                                                                                                                             |     |    |
| The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.                                                                                                                                                                                                                                                                                                                                                                        | YES | NO |
| The specialist's on-site field assessment confirmed that all three (3) mapped watercourse crossings are characterised as poorly defined flow paths, lacking the attributes required to classify them as formal watercourses under the National Water Act (NWA). As such, no formal watercourses will be affected by the proposal. It is important to note that the Great Brak River is classified as an estuary, not a watercourse, in terms of the NWA. The BOCMA has been approached for comment. |     |    |
| The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13.                                                                                                                                                                                                                                                                                                                  | YES | NO |
| The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM:WA")                                                                                                                                                                                                                                                                                                                                                                                                                     | YES | NO |
| The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA").                                                                                                                                                                                                                                                                                                                                                                                                         | YES | NO |
| The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA").                                                                                                                                                                                                                                                                                                                                                                                                   | YES | NO |
| The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5.                                                                                                                                                                                                                                                                                                                                             | YES | NO |

### 3. Other legislation

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| List any other legislation that is applicable to the proposed activity or development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p><b><u>National Forest Act (Act 84 of 1998)</u></b></p> <p>Given the presence of protected tree species such as Milkwood and Cheesewood, it is essential that planning and implementation comply with the National Forests Act (NFA) to prevent unnecessary impacts. Prior to construction, the disturbance footprint must be accurately surveyed and clearly demarcated. Every effort must be made to avoid protected trees within this footprint. Where avoidance is not possible, the required permits from the Department of Forestry, Fisheries and the Environment (DFFE) must be obtained before any removal or trimming is undertaken.</p> <p>It must be emphasised that construction may be delayed for various reasons and existing trees may be larger, or new trees may have seeded depending on when construction will commence.</p> |

Forestry Permit can take 4 – 5 months to obtain once building/services plans are approved. Applications must therefore be submitted well in advance of when a tree(s) must be trimmed/removed to ensure compliance.

#### 4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.

##### **Western Cape PSDF (2014)**

The Western Cape Provincial Spatial Development Framework (WCPsDF) was approved in 2014 by the Western Cape Parliament and serves as a strategic spatial planning tool that “communicates the provinces spatial planning agenda”.

The proposed activity aligns with:

##### **Policy R1 - Protect Biodiversity and Ecosystem Services.**

- The project footprint consists predominantly of transformed habitat.
- The project footprint will not affect any natural watercourses.
- The proposal will not result in impacts on Fauna Species of Conservation Concern (SCC).
- The proposal will not impact heritage, archaeological or palaeontological resources.
- The proposal will not impact on agricultural resources.

##### **Policy E3 – Revitalise and strengthen urban space-economies as the engine of growth.**

The proposed activity strengthens the Municipality's ability to provide services to its residents as part of its service delivery mandate.

##### **Eden Spatial Development Framework (2017)**

The Eden District Spatial Development Framework was approved in 2017 and aims to establish a strong strategic direction and vision, towards increasing levels of detail in the spatial recommendations that are directive rather than prescriptive and providing guidance to local municipalities in the district regarding future spatial planning, strategic decision making and regional integration.

The proposed activity complies with the District's Strategic Objective (SO4): Environmental management and public safety and their associated strategies (supported by Policy 1.1.):

- Protect and conserve important terrestrial, aquatic (rivers, wetlands, and estuaries) and marine habitats as identified through Critical Biodiversity Area (CBA) mapping exercise or similar conservation planning process.
  - It is proposed to implement Pipe Jacking & Pipe Cracking in certain areas where conventional open trenching will cause unnecessary disturbance.

#### 5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.

##### **Guideline on Need and Desirability (March 2013)**

Need & Desirability refers to the temporal and spatial need of an area for a specific development. This Guideline was used to define the requirements and implications of Need & Desirability. Refer to section E12 for a detailed Need & Desirability project description.

#### Guideline on Alternatives (March 2013)

Three (3) sewer pipeline installation alternatives were assessed (standard trenching, pipe jacking and pipe cracking). Although assessed, the no-go option considers the scenario where the sewer lines and the conversion of the conservancy tanks into pump stations are not approved. In this case, the use of the sewer system would continue under the present conditions and the conservancy tanks would continue to overflow during peak holiday seasons.

#### Guideline for Environmental Management Plans (June 2005)

The Environmental Management & Maintenance Programme (EMMPr) has been included with this Draft Basic Assessment Report to provide practical and implementable actions to ensure that the development maintains sustainability and minimise impacts through all its phases. The document is finalised as per the Guidelines and requirements of NEMA and covers both the construction as well as future maintenance work.

#### Guideline on generic terms of Reference for EAPs and Project Schedules (March 2013)

Followed guidance on:

- Generic Requirements for EAPS (what an EAP must manage).
- General Requirements for persons compiling a specialist report.
- Scope of Work (project description, primary responsibility, anticipated inputs etc.).

#### Guideline for determining the scope of specialist involvement in the EIA process, June 2005

This Guideline was used to determine the timing, scope and quality of specialist inputs in the EIA process.

#### Circular EADP 0028/2014: One Environmental Management System

This Circular provided guidance in terms of best practice (timeframes, public participation, notifications to I&APs, availability of report for comment, comments & responses etc.).

## 6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

According to the DEA&DP series of guidelines for the involvement of specialists in the EIA process (2005), one of the underpinning generic principles is to **eliminate the unnecessary specialist involvement** through proactive project planning and design to avoid or sufficiently reduce negative impacts.

Another is to **maximise the use of existing relevant information** prior to involving a specialist. This includes the input from the EAP and specialists, in the form of site photographs and site inspections (site sensitivity verifications). These principles apply to the specialist studies that have been identified in the screening tool and motivated as not necessary in this report.

The Screening Tool identified the following studies as potentially being applicable to the proposed development:

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--------------------------------------------|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          |                       | X                |                    |                 |
| Animal Species Theme                       |                       | X                |                    |                 |
| Aquatic Biodiversity Theme                 |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme | X                     |                  |                    |                 |
| Civil Aviation Theme                       |                       | X                |                    |                 |
| Defence Theme                              |                       |                  |                    | X               |
| Paleontology Theme                         | X                     |                  |                    |                 |
| Plant Species Theme                        |                       |                  | X                  |                 |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

### **Agricultural Theme**

The screening tool results indicate that the proposed pipelines cross areas of low, medium and high agricultural sensitivity.

It is noted that the results are based on land capability / cropping potential, however, the EAP is of view that although the climate, terrain and soil suitability may allow for crop production, other factors constraints the potential of the site to practically deliver agricultural produce:

- The EAP is of the opinion that the **location** of the proposed development (mostly within an existing road reserve does not warrant the undertaking of an agricultural study).

Road reserve are specifically designated and set aside for:

- Space for the road itself
- Services infrastructure (pipelines, fibre lines)
- Future expansion
- Safety
- In addition to the above, the pipeline will go through areas that have been transformed by urbanisation which leaves it surrounded largely by non-agricultural land uses. The fact that most of the land is within a road reserve negates its potential for agricultural production.
- The proposed project will not affect farming activities, agricultural soils, or crop production, as the sewer pipeline will primarily be installed through pipe cracking, replacing an existing old municipal water pipeline. Where pipe cracking cannot be applied (such as beneath existing dwellings) installation will be limited to standard trenching, with trenches not exceeding 1m in width.

The EAP refutes the sensitivity and the applicability of the theme and motivates that the undertaking of an agricultural study is not necessary since the proposed development will lead to no loss of future/viable agricultural land.

The **Western Cape Department of Agriculture** has been approached for comment on the DBAR.

### **Animal Species Theme**

The screening tool identified the sensitivity for animal species (fauna) as "high" for the following species:

| Sensitivity | Feature(s)                         |
|-------------|------------------------------------|
| High        | Aves-Bradypterus sylvaticus        |
| High        | Aves-Hydroprogne caspia            |
| Medium      | Insecta-Aloeides thyra orientis    |
| Medium      | Sensitive species 8                |
| Medium      | Invertebrate-Aneuryphymus montanus |

|      |                     |
|------|---------------------|
| High | Aves-Neotis denhami |
|------|---------------------|

|        |                       |
|--------|-----------------------|
| Medium | Aves-Circus ranivorus |
|--------|-----------------------|

The appointed Fauna Specialist (Confluent Environmental) confirmed that no Species of Conservation Concern (SCC) were recorded during the site inspection, and their likelihood of occurrence within the study area are assessed as very low and low.

Although sections of natural vegetation along the proposed pipeline alignment provide suitable habitat for *Bradypterus sylvaticus*, *Aloeides thyra orientis*, *Aloeides trimeni southeyae*, and *Circellium bacchus*, their likelihood of occurrence has been confirmed as **low** for the following reasons:

- *Bradypterus sylvaticus*: Superior habitats for *Bradypterus sylvaticus* exist outside the project footprint that provide better protection from human disturbance and noise. As a result, the likelihood of the SCC occurring within the relatively small project area is considered **low**.
- *Aloeides thyra orientis*: The project area comprises sandy, unsurfaced ground where Cape Sugar Ants are present. While vegetation within the development footprint is not entirely removed, the specific larval food plants (*Aspalathus acuminata*, *A. laricifolia*, and *A. cymbiformis*) required for the persistence of the Species of Conservation Concern are absent. Furthermore, the site lies east of Hartenbos, beyond the documented eastern limit of the species' distribution. Accordingly, the conditions necessary to support the SCC are not met at this location. Likelihood of occurrence is **low**.
- *Aloeides trimeni southeyae*: While some potential larval food plants could occur in the area, the SCC itself is unlikely to be present because its overall distribution is disjunct. In other words, the site lies in a gap between the SCC's western and eastern populations, outside the areas where it is normally found. Likelihood of occurrence is **low**.
- *Circellium bacchus*: Suitable mammal dung is present to support the life processes of the SCC. It is, however, noted that both habitat of superior quality and greater amounts of suitable mammal dung (since mammals are likely deterred from the area due to the road) are likely to be present in the greater landscape. The presence of superior habitat and resources to support the SCC outside of the project area means that its likelihood of occurring in the relatively small project area is **low**.

The fauna specialist (Confluent Environmental) refutes the high fauna sensitivity rating and confirmed that it must be low.

A **Terrestrial Animal Compliance Statement** forms part of BAR (Appendix G1).

**CapeNature** has been approached for comment on the DBAR.

### **Aquatic Biodiversity Theme**

The screening tool classified the area as having “**Very High**” Aquatic Biodiversity Sensitivity, as the route crosses mapped aquatic Critical Biodiversity Areas (CBA 1), sections of the Great Brak Estuary’s Estuarine Functional Zone (EFZ), and two mapped wetland types (Channelled Valley Bottom and Seep wetlands). However, a site visit conducted by the aquatic specialist (Confluent Environmental) confirmed that the mapped features cannot be validated as watercourses as defined in the National Water Act and at best could be described as flow paths, lacking distinct channels, aquatic habitat, riparian vegetation and hydric soils. Only the first crossing was confirmed as a non-perennial stream with intermittent flow and no estuarine or wetland habitat, while the other two features are described as flow paths where water flows downslope via interflow in the soil layers, with no distinct channel and insufficient residence in the soil to form wetland conditions.

Given that the first section of the sewer line is located within the 1:50- and 1:100-year flood line of the Great Brak Estuary, overlaps a mapped Freshwater Ecosystem Priority Area (FEPA), and is associated with High Ecological Importance and Sensitivity (EIS), the aquatic biodiversity potentially affected is rated as Very High. In contrast, the remainder of the sewer line is assessed as having Low sensitivity for aquatic biodiversity.

In terms of Section 21 c) and i) of the NWA, the proposed sewer line and pump stations fall outside of the regulated area of any nearby watercourses (i.e. more than 100m from a river/stream and more than 500m from a wetland). Furthermore, the sewer line is downstream of several mapped watercourses, and it cannot therefore impact on these aquatic features. While the estuary is located within 10m of the sewer line replacement, an estuary is not defined as a watercourse and a Section 21 c) and i) authorisation is therefore **not applicable**.

The development is consistent with the objectives of the Great Brak Estuarine Management Plan (EMP), which promotes improved water quality and infrastructure maintenance to prevent pollution.

An **Aquatic Impact Assessment** forms part of the BAR and is included in Appendix G2.

**CapeNature & BOCMA** has been approached for comment on the DBAR.

### **Archaeological & Cultural Heritage Theme**

The screening tool identified this theme as being “Very High”.

A Notice of Intent to Develop (NID) was submitted to Heritage Western Cape who confirmed that no further action is required.

Our Ref: HM / GARDEN ROUTE / MOSSEL BAY / GROOT BRAK RIVER / MULTIPLE ERVEN  
Case No.: 27665EJV0305  
Enquiries: Emily-Jane Vowles  
E-mail: emily.vowles@westerncape.gov.za  
Tel: 021 829 3324

Mariska Byleveld  
mariska@cape-eaprac.co.za



**RESPONSE TO NOTIFICATION OF INTENT TO DEVELOP: FINAL COMMENT**  
In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the Western Cape  
Provincial Gazette 6061, Notice 298 of 2003

**NOTIFICATION OF INTENT TO DEVELOP: PROPOSED SEWER INFRASTRUCTURE ON MULTIPLE ERVEN ALONG MORRISON ROAD, EEKHORING STREET AND BITOU STREET, GREAT BRAK RIVER, MOSSEL BAY SUBMITTED IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)**

The matter above has reference.

Heritage Western Cape is in receipt of your application for the above matter. This matter was discussed at the Heritage Officers Meeting held on 16 March 2026.

You are hereby notified that, since there is no reason to believe that the proposed sewer infrastructure on multiple erven along Morrison Road, Eekhorning Street and Bitou Street, Great Brak River, Mossel Bay will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.

The Background Information Document & NID are attached to Appendix G3 to this BAR.

**Heritage Western Cape** has been approached for comment on the DBAR.

**Plant Species Theme & Terrestrial Biodiversity Theme**

The screening tool identified the plant species theme as "Medium" for the following list of species:

| Sensitivity | Feature(s)                        |        |                        |
|-------------|-----------------------------------|--------|------------------------|
| Low         | Low Sensitivity                   | Medium | Sensitive species 1024 |
| Medium      | Lampranthus fergusoniae           | Medium | Cotula myriophylloides |
| Medium      | Lampranthus pauciflorus           | Medium | Agathosma eriantha     |
| Medium      | Lebeckia gracilis                 | Medium | Agathosma muirii       |
| Medium      | Leucospermum praecox              | Medium | Euchaetis albertiniana |
| Medium      | Wahlenbergia polyantha            | Medium | Muraltia knysnaensis   |
| Medium      | Selago villicaulis                | Medium | Nanobubon hypogaeum    |
| Medium      | Erica unicolor subsp. mutica      | Medium | Sensitive species 516  |
| Medium      | Erica glandulosa subsp. fourcadei | Medium | Sensitive species 800  |
| Medium      | Hermannia lavandulifolia          | Medium | Sensitive species 500  |
| Medium      | Sensitive species 153             | Medium | Sensitive species 654  |
| Medium      | Sensitive species 633             | Medium | Diosma passerinoides   |
| Medium      | Sensitive species 268             | Medium | Agathosma microcarpa   |
|             |                                   | Medium | Zostera capensis       |

According to the botanical and biodiversity specialist (Confluent Environmental), the proposed sewerage infrastructure is largely situated within transformed areas associated with existing residential developments, with most of the alignment following the Morrison Road reserve. These areas generally do not overlap with threatened ecosystems, Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs). However, certain sections intersect intact thicket and strandveld. Notable examples include the new Ø90 mm rising main, where remnant thicket and strandveld persist, and the eastern section of the Ø110 mm rising main along the railway, where Hermannia lavandulifolia (Vulnerable) and another sensitive species were recorded. These localised patches of high conservation value will require careful management during construction to limit impacts, even though the broader alignment is dominated by lower-sensitivity, transformed areas.

The terrestrial biodiversity sensitivity of the proposed sewer line alignment is considered Low, as the majority of construction activities will occur within the existing disturbed road reserve within an established residential area. While screening tool outputs flagged portions of Critical Biodiversity Areas and Red-Listed ecosystems, these areas largely fall outside the direct footprint, and intact habitats such as the Milkwood-dominated hill adjacent to the railway represent the primary location of higher sensitivity.

The botanical/biodiversity specialist disputes the medium botanical / plant species sensitivity rating and confirms that it must be High. The botanical/biodiversity specialist disputes the very high terrestrial biodiversity sensitivity and confirms that it must be low.

A **Terrestrial Biodiversity & Botanical Impact Assessment** forms part of the BAR (Appendix G4).

**CapeNature** has been approached for comment on the DBAR.

#### **SACAA & Defence Themes**

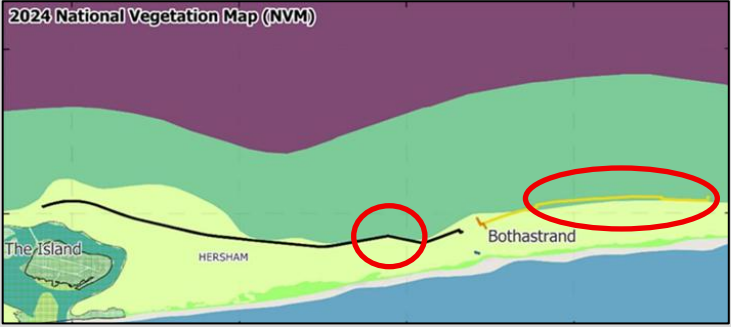
The sensitivity rating for both themes is refuted, and the EAP is of the opinion that the theme is not applicable to this application.

## SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

| Activity No(s): | Provide the relevant <b>Basic Assessment Activity(ies)</b> as set out in <b>Listing Notice 1</b>                                                                                                                                                                                                                                                                                                                                                                        | Describe the portion of the proposed development to which the applicable listed activity relates.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12              | <p>The development of-</p> <p>(ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs –</p> <p>(a) within a watercourse</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.</p>                                                                                                   | <p>The majority of the sewer pipelines will be located within the Morrison Road reserve and urban area, where this activity does not apply. However, a short section of the 110 mm pipeline extends beyond the road reserve and urban area, crossing a mapped channelled valley-bottom wetland (figure below – yellow circle).</p>  <p>According to the aquatic specialist, the mapped watercourse lacks the attributes required to classify it as a watercourse under the NWA and is best described as a flow path. Nonetheless, given NEMA's broader definition of a watercourse, this activity is included in the Application.</p> |
| 17              | <p>Development –</p> <p><del>(i) in the sea;</del></p> <p>(ii) in an estuary;</p> <p>(iii) within the littoral active zone;</p> <p>(iv) in front of a development setback; or</p> <p>(v) if no development setback exists, within a distance of 100 metres inland of the high-watermark of the sea or an estuary, whichever is the greater.</p> <p>In respect of-</p> <p>(e) infrastructure or structures with a development footprint of 50 square metres or more.</p> | <p>According to the aquatic specialist, a section of the 110mm sewer pipeline crosses the mapped Great Brak River Estuary albeit in the road reserve that is transformed (figure below – yellow circle).</p>  <p>The proposed Bitou Pump Station will be located within 100m inland of the high-water mark of the sea (figure below). However, the proposed pump station will only be approx. 24m<sup>2</sup> in size.</p>                                                                                                                                                                                                          |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                |
| 19  | <p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.</p>                                                                                                                                                                                                                                 | <p>The proposed sewer lines cross three (3) <b>mapped</b> watercourses (figure below- yellow boxes).</p>  <p>According to the aquatic specialist, these mapped watercourses lack the attributes required to classify it as a watercourse under the NWA and is best described as a flow path. Nonetheless, given NEMA's broader definition of a watercourse, this activity is included in the Application.</p> |
| 19A | <p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles, or rock of more than 5 cubic metres from –</p> <p>(i) <del>the seashore;</del></p> <p>(ii) <del>the littoral active zone,</del> an estuary, or a distance of 100 metres inland of the highwater mark of the sea or an estuary, whichever is the greater.</p> <p>(iii) <del>the sea</del></p> | <p>According to the aquatic specialist, a section of the 110mm sewer pipeline crosses the mapped Great Brak River Estuary albeit in die road reserve that is transformed (figure below – yellow circle).</p>                                                                                                                                                                                                 |

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>The proposed Bitou Pump Station will be located within 100m of the highwater mark of the sea (figure below).</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Activity No(s): | Provide the relevant <b>Basic Assessment Activity(ies)</b> as set out in <b>Listing Notice 3</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Describe the portion of the proposed development to which the applicable listed activity relates.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 12              | <p>The clearance of an area of 300m<sup>2</sup> or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>(i) within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEM:BA 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;</p> <p>(ii) within critical biodiversity areas identified in bioregional plans.</p> | <p>Within the project area, sections of the proposed sewer alignment intersect with mapped Hartenbos Dune Thicket (EN) and CBA1:</p> <ul style="list-style-type: none"> <li>• Along the railway line, and</li> <li>• In the easternmost portion of the alignment (figure below – red circle/oval)</li> </ul>  <p>While much of the study area is now classified as LC and excluded from the BSP due to urban transformation, the sections of the sewer alignment that intersect CBA1 areas coincide with remnants of natural vegetation.</p> |
| 14              | <p>The development of –</p> <p>(ii) infrastructure or structures with a physical footprint of 10m<sup>2</sup> or more; where such development occurs –</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback has been adopted, within 32</p>                                                                                                                                                                                                                                                                                                  | <p>According to the aquatic specialist, a section of the 110mm sewer pipeline crosses the mapped Great Brak River Estuary albeit in die road reserve that is transformed (figure below – yellow circle).</p>                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>metres of a watercourse, measured from the edge of a watercourse.</p> <p>i. Outside urban areas</p> <p>(dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</p> <p>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.</p> <p>(hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.</p> |  <p>A section of the proposed 110mm pipeline is considered to be outside the urban area whilst it crosses a mapped non-perennial drainage line and a channelled valley-bottom wetland (figure below – yellow oval).</p>  <p>According to the aquatic specialist, this feature lacks the attributes required to classify it as a watercourse under the NWA and is best described as a flow path. Nonetheless, given NEMA's broader definition of a watercourse, this activity is included in the Application.</p> <p>This section is mapped as CBA2: Wetland.</p> |
| <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted.</li> <li>Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

List the applicable waste management listed activities in terms of the NEM:WA

| Activity No(s): | Provide the relevant <b>Basic Assessment Activity(ies)</b> as set out in <b>Category A</b> | Describe the portion of the proposed development to which the applicable listed activity relates. |
|-----------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|                 |                                                                                            |                                                                                                   |

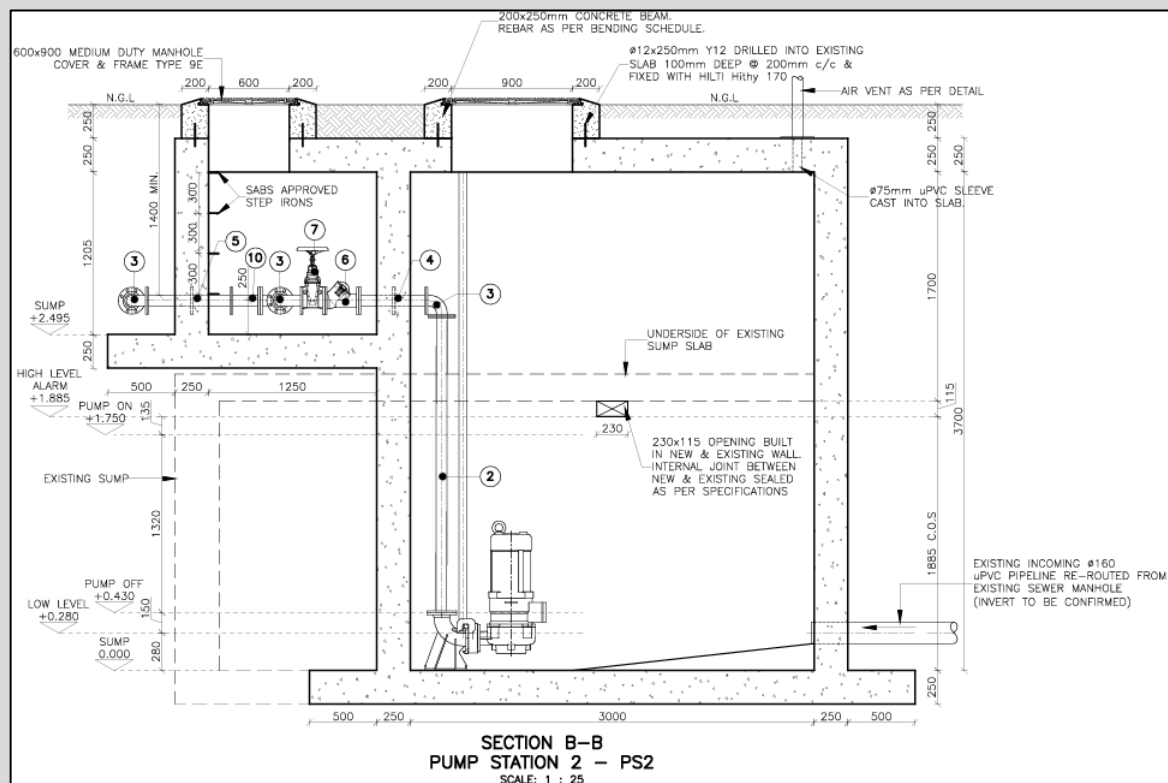
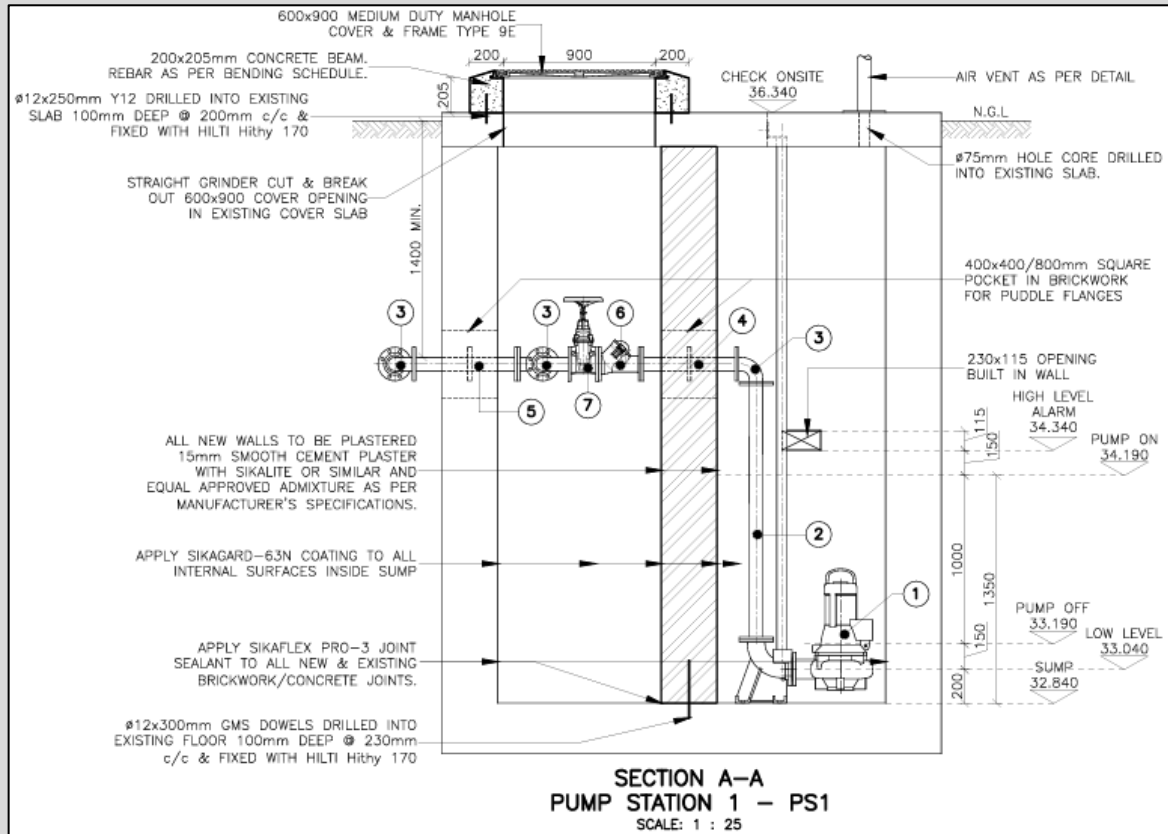
List the applicable listed activities in terms of the NEM:AQA

| Activity No(s): | Provide the relevant <b>Listed Activity(ies)</b> | Describe the portion of the proposed development to which the applicable listed activity relates. |
|-----------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------|
|                 |                                                  |                                                                                                   |

## SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                     |
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| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Provide a description of the preferred alternative. |
| <p><u>Preferred Activity Alternative</u></p> <ul style="list-style-type: none"> <li>• Upgrading of two (2) existing conservancy tanks by converting them into fully operational pump stations (Eekhoring Street &amp; Bitou Street Conservancy Tanks)</li> <li>• Installation of new sewer pipeline sections to support the conservancy tank upgrades.</li> </ul> <p><u>Preferred Site Alternative</u></p> <ul style="list-style-type: none"> <li>• Sewer Lines (Sections 01, 02 &amp; 03) <ul style="list-style-type: none"> <li>◦ Erf 4127 (Private Property)</li> <li>◦ Street Parcel ID: RE/2699 (Provincial Road Reserve)</li> <li>◦ Street Parcel ID: RE/2176 (Provincial Road Reserve)</li> <li>◦ Portion 7 of Farm SEARLES no. 252 (Private Property)</li> <li>◦ Street Parcel ID: RE/476 (Provincial Road Reserve)</li> <li>◦ Erf 507 (Private Property)</li> <li>◦ Erf 516 (Private Property)</li> <li>◦ Remainder of Erf 840 (Private Property)</li> <li>◦ Farm 373 (Private Property)</li> <li>◦ Street Parcel ID: 465 (Provincial Road Reserve)</li> <li>◦ Erf 610 (Private Property)</li> <li>◦ Street Parcel ID: 798 (Provincial Road Reserve)</li> <li>◦ Street Parcel ID: RE/66/251 (Municipal Road Reserve)</li> </ul> </li> <li>• Conservancy Tank Upgrades <ul style="list-style-type: none"> <li>◦ Street Parcel ID: RE/66/251 (Municipal Road Reserve)</li> <li>◦ Erf 554 (Municipal Property)</li> </ul> </li> </ul> <p><u>Preferred Installation Alternative</u></p> <ul style="list-style-type: none"> <li>• Pipe Cracking <ul style="list-style-type: none"> <li>◦ The proposal is to replace the existing old asbestos water pipeline with the new sewer pipeline.</li> </ul> </li> <li>• Pipe Jacking <ul style="list-style-type: none"> <li>◦ The pipe jacking method will be used where the pipeline crosses Morrison Road.</li> </ul> </li> <li>• Standard Trenching <ul style="list-style-type: none"> <li>◦ Standard trenching will be limited to areas where the pipe-cracking method cannot be applied.</li> </ul> </li> </ul> <p><u>Preferred Design Alternative</u></p> <ul style="list-style-type: none"> <li>• Eekhoring Street Pump Station (Figure 23) <ul style="list-style-type: none"> <li>◦ Internal works by dividing the existing tank into chambers with masonry walls</li> <li>◦ Installation of mechanical sewer pumps and associated pipework</li> <li>◦ Pumps will be located in the underground pump sumps</li> <li>◦ Electrical supply via an existing miniature substation in Eekhoring Street</li> </ul> </li> <li>• Bitou Street Pump Station (Figure 23) <ul style="list-style-type: none"> <li>◦ Addition of a new pump sump and valve chamber next to the existing tank</li> <li>◦ Pipework and sewer manhole modifications within the municipal property</li> <li>◦ Pumps will be located in the underground pump sumps</li> <li>◦ Electrical supply via existing substation at Manatoka Lane</li> </ul> </li> <li>• Sewer Lines <ul style="list-style-type: none"> <li>◦ Section 01: Underground Ø90mm Class 12 HDPE/uPVC pipe</li> </ul> </li> </ul> |                                                     |

- Section 02: Underground Ø160mm Class uPVC pipe
- Section 03: Underground Ø110mm Class 12 HDPE / uPVC pipe



**Figure 23: Preliminary Cross-Section Design of Pump Station 1 (Eekhorng Street) & Pump Station 2 (Bitou Street).**

2. Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.

The proposed pipelines will be located within road reserves and along building lines of private properties, in areas where municipal infrastructure is permitted. The Eekhorng Street Pump Station will be positioned within the road reserve of Eekhorng Street, while the Bitou Street Pump Station will be situated on municipal property.

|    |                                                                                                                                                                                            |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. | Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved. |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Existing approvals: Not to the knowledge of the EAP.

Potential conflict: Not applicable.

|    |                                                                          |
|----|--------------------------------------------------------------------------|
| 4. | Explain how the proposed development will be in line with the following? |
|----|--------------------------------------------------------------------------|

|     |                                               |
|-----|-----------------------------------------------|
| 4.1 | The Provincial Spatial Development Framework. |
|-----|-----------------------------------------------|

The Western Cape Provincial Spatial Development Framework (WCPSDF) was approved in 2014 by the Western Cape Parliament and serves as a strategic spatial planning tool that "communicates the provinces spatial planning agenda".

The proposed activity aligns with:

**Policy R1 - Protect Biodiversity and Ecosystem Services.**

- The project area consists predominantly of transformed habitat.
- The proposal will not affect any natural watercourses.
- The proposal will not result in impacts on Fauna Species of Conservation Concern (SCC).
- The proposal will not impact heritage, archaeological or palaeontological resources.
- The proposal will not impact on agricultural resources.

**Policy E3 – Revitalise and strengthen urban space-economies as the engine of growth.**

The proposed activity strengthens the Municipality's ability to provide services to its residents and businesses as part of its service delivery mandate.

|     |                                                            |
|-----|------------------------------------------------------------|
| 4.2 | The Integrated Development Plan of the local municipality. |
|-----|------------------------------------------------------------|

The installation of new sewer pipelines & upgrading of conservancy tanks into pump stations do not conflict with the 2022 – 2027 IDP of the municipality.

|      |                                                              |
|------|--------------------------------------------------------------|
| 4.3. | The Spatial Development Framework of the local municipality. |
|------|--------------------------------------------------------------|

The upgrading of a portion of the Great Brak Sewer System is in line with the Mossel Bay SDF.

|      |                                                                |
|------|----------------------------------------------------------------|
| 4.4. | The Environmental Management Framework applicable to the area. |
|------|----------------------------------------------------------------|

Not applicable.

|    |                                                                                                                                                |
|----|------------------------------------------------------------------------------------------------------------------------------------------------|
| 5. | Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development. |
|----|------------------------------------------------------------------------------------------------------------------------------------------------|

Comments received during the public participation process from relevant authorities and/or specialists will be included in the Final BAR.

|    |                                                                                                                                            |
|----|--------------------------------------------------------------------------------------------------------------------------------------------|
| 6. | Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development. |
|----|--------------------------------------------------------------------------------------------------------------------------------------------|

The Western Cape Biodiversity Spatial Plan (WCBSBP) is a map that shows priority areas for protecting and conservation. The plan was updated in 2023, replacing the 2017 version. While the two (2) versions look similar overall, some important changes were made.

In the 2023 plan, most of the urban area is no longer marked for conservation, because the area has already been transformed by development. Some natural areas are still recognised as "Critical Biodiversity Areas" (CBA1), but certain forest areas that were previously included are no longer

designated. Within the project area, parts of the proposed sewer route do cross CBA1 zones, specifically:

- Along Morrison Road near the railway, and
- At the eastern end of the alignment.

These sections are sensitive and need careful planning to avoid impacts during construction. The findings of the WCBSP match closely with the 2024 National Vegetation Map, which shows that while most of site is already developed and of low biodiversity value, the sewer route does intersect areas of remaining natural vegetation. These are mainly patches of Milkwood Thicket and Coastal Forest, which are important to avoid / minimise disturbance. In short: most of the project area has low biodiversity sensitivity, but certain sections require careful management to protect the natural vegetation that remains.

To limit impacts in sensitive areas, pipe cracking is the preferred method, especially near the railway line (short section of the proposed new Ø110 mm rising main on Portion 7 of Farm Searles No. 252). If pipe cracking cannot be used in this section, the pipeline alignment will be shifted to follow the Morrison Road reserve, avoiding dense patches of Milkwood Thicket. Both approaches (pipe cracking near the railway or standard trenching along Morrison Road) are expected to result in only minor residual impacts.

In addition, the botanical specialist has identified four (4) “search-and-rescue” areas along the pipeline route (Figure 24). Plant species such as grasses, succulents and geophytes, or any species with a good chance of surviving after construction, will be rescued and relocated.



**Figure 24: Four (4) search-and-rescue areas identified by the botanical/biodiversity specialist.**

All mitigation measures / management actions recommended by the specialists are included in the EMMP to avoid / minimise potential impacts.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.                                                                                             |
| <p>Approximately 180m of Section 03 will fall within both the Coastal Management Line (CML), the Coastal Protection Zone (CPZ) and Estuarine Functional Zone (EFZ). This particular section also falls within the 1:50 and 1:100 flood lines of the Great Brak Estuary. The Bitou Street Pump Station itself will also be located inside the CML. It is therefore recommended by the aquatic specialist to include the following design mitigation measures to reduce the likelihood of any spillage of sewage during flood events:</p> <ul style="list-style-type: none"> <li>• Air valves along sewer lines must be elevated above the 1:100-year flood line.</li> <li>• Sewer manhole covers must not be made of metal because of the risk of theft.</li> <li>• Manholes must be designed to be watertight.</li> </ul> <p>Care must be taken when converting the Bitou Street Conservancy Tank into a pump station to ensure that untreated sewage does not spill into the flow path, onto the beach or into the ocean.</p> <ul style="list-style-type: none"> <li>• Spill kits must be on site during construction</li> <li>• A check dam must be constructed if a large amount of spillage is expected</li> </ul> <p>The project aligns with the objectives of the Great Brak River Estuary Management Plan and supports improved wastewater management in the area while maintaining the ecological integrity of the surrounding aquatic systems.</p> |                                                                                                                                                                                                                      |
| 8.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.                                                     |
| The screening tool has not changed. It is still the same screening tool submitted with the application form.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                      |
| 9.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Explain how the proposed development will optimise vacant land available within an urban area.                                                                                                                       |
| Not applicable. The proposed development is not on vacant land.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                      |
| 10.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Explain how the proposed development will optimise the use of existing resources and infrastructure.                                                                                                                 |
| <p><b>Upgrading existing conservancy tanks</b></p> <p>Two (2) existing conservancy tanks (Eekhorning Street and Bitou Street) will be converted into pump stations. Instead of building entirely new facilities, the project reuses existing municipal infrastructure, adding pump sumps, valve chambers and associated pipework.</p> <p><b>Using existing electrical supply</b></p> <p>Both pump stations will connect to existing substations in Eekhorning Street and Manatoka Lane, avoiding the need for new substations.</p> <p><b>Using existing road reserves</b></p> <p>Pipelines are routed along Morrison Road reserve and within municipal property / private property building lines, ensuring that land already designated for infrastructure is used. This reduces disturbance to sensitive habitats.</p> <p><b>Pipe cracking method</b></p> <p>The project proposes replacing the existing old asbestos water pipeline with new sewer lines using trenchless pipe cracking. This reuses the footprint of the old pipeline, minimises excavation and reduces soil disturbance.</p> <p><b>Linking with existing municipal sewer network</b></p> <p>The new pipelines will connect directly into the existing municipal system at Dolphins Creek Golf Estate.</p>                                                                                                                                                                              |                                                                                                                                                                                                                      |
| 11.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16). |

Comment from the local authority will be included in the Final BAR.

The Department of Infrastructure (Chief Directorate: Road Planning) granted approval for the installation of the sewer pipeline within Morrison Road reserve and across Morrison Road subject to the following standard conditions (Appendix M):

- |     |                                                                                                                                                                                                                                                                                            |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.1 | Mossel Bay Municipality, the service owner, must undertake in writing to remain responsible for all the installation and maintenance costs towards this sewer pipe.                                                                                                                        |
| 3.2 | All connecting (to MR00348) roads, streets, servitudes etc must be crossed by means of a trenchless method (within a 160mmØ HDPE sleeve pipe).                                                                                                                                             |
| 3.3 | All exposed (by means of trenching) redundant sections of AC pipes within the road reserve of MR00348 must be cut out, removed from the road reserve and disposed of in the appropriate legal and safe manner.                                                                             |
| 3.4 | All the trenched sections must be pre-marked on site with chalk or a similar method, after which those sections must be cleared with the District Roads Engineer in terms of location and specific construction methods.                                                                   |
| 3.5 | A set of construction drawings, each with a signature thereon, must be submitted to both this Branch (Attention: Ms V Stoffels) and the District Roads Engineer.                                                                                                                           |
| 3.6 | Before any construction activities may commence, the handing over of the site must be accepted in writing from the District Roads Engineer (Attention: Ms W Havenga; e-mail: <a href="mailto:DREtechnical.Oudtshoorn@westerncape.gov.za">DREtechnical.Oudtshoorn@westerncape.gov.za</a> ). |
| 3.7 | Your temporary construction traffic accommodation must be approved in writing by the District Roads Engineer prior to this approved pipeline's construction commences.                                                                                                                     |
| 3.8 | After completion of the construction phase, the District Roads Engineer must accept in writing the handing over of the site from you.                                                                                                                                                      |
| 3.9 | As-built drawings must be sent to both this Branch (Attention: Ms V Stoffels) and the District Roads Engineer.                                                                                                                                                                             |

- |     |                                                                                                                                                                                                                                                                                                                                |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12. | In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as <u>Appendix K</u> . |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

'Need', as defined by DEADP refers to the timing of the proposal and the 'Desirability' refers to the 'placing' of the proposed development.

#### NEED

- The existing conservancy tanks at Eekhorning and Bitou Streets are no longer adequate. They frequently exceed capacity during peak holiday seasons, requiring daily emptying instead of weekly, which leads to pollution risks and inconvenience for residents.
- The Bitou Street Conservancy Tank already services 95 homes plus 32 future properties. With ongoing development in Great Brak River, demand will only increase, making the current system unsustainable.
- Overflowing conservancy tanks pose risks of contamination, odour, and exposure to untreated sewage. Upgrading to pump stations ensures reliable sanitation services, reducing health hazards.

#### DESIRABILITY

- The project aligns with the NEMA principle of sustainable development, ensuring infrastructure is ecologically, socially and economically justified.
- Most of the pipeline runs through already transformed road reserves, avoiding sensitive ecosystems. Where intact vegetation exists (milkwood dune thicket), specialists confirmed that either pipe cracking or standard trenching would result in only minor impacts (with mitigation).

- The use of trenchless methods (pipe cracking & pipe jacking) minimises soil disturbance, traffic disruption, and biodiversity impacts compared to conventional standard trenching which will be limited to areas where pipe cracking would not be feasible.
- Reliable sewer infrastructure supports urban growth, improves quality of life, and prevents pollution in a coastal town where tourism and environmental quality are essential.

### **Questions to be engaged with when considering need & desirability**

#### How will this development impact on the ecological integrity of the area?

- According to the **fauna specialist**, there is very little natural vegetation and habitat and there is a low likelihood of occurrence of terrestrial animal SCC within the project footprint for all alternatives. No animal SCC were found on the site. Therefore, the proposed development will not impact on any fauna SCC.
- According to the **aquatic specialist**, most of the proposed infrastructure are within areas that are either terrestrial or have no natural aquatic habitat that could be considered as a watercourse (i.e., low aquatic sensitivity). The exception area is sewer pipelines being located within the Estuarine Functional Zone within the 1:50 and 1:100 year floodline (i.e., high aquatic sensitivity). However, the significance of impact can be mitigated from **minor to negligible** provided that the mitigation measures recommended be implemented. Although sections of the project occur within the Estuarine Functional Zone and mapped flood lines of the Great Brak Estuary, the implementation of appropriate erosion control, watertight infrastructure design and routine maintenance will ensure that potential impacts remain minimal. Overall, the project aligns with the objectives of the Great Brak Estuary Management Plan and supports improved wastewater management in the area while maintaining the ecological integrity of surrounding aquatic systems.
- According to CapeFarmMapper (2025), sections of the proposed sewer lines contain Hartenbos Dune Thicket (CR). According to the **botanical/biodiversity specialist**, the Terrestrial Biodiversity sensitivity of the proposed sewer line alignment is considered Low sensitivity, as the majority of construction activities will occur within the existing disturbed road reserve within an established residential area. While screening tool outputs flagged portions of Critical Biodiversity Areas and Red-Listed ecosystems, these areas largely fall outside the direct footprint. No impacts anticipated from a Terrestrial Biodiversity Perspective.
- According to the **botanical/biodiversity specialist**, the plant species theme is confirmed as a High sensitivity in specific locations, particularly where intact thicket and strandveld intersect the alignment. Notable areas include the new Ø90 mm rising main, where remnant thicket and strandveld persist, and the eastern section of the Ø110 mm rising main, along the railway, where *Hermannia lavandulifolia* (Vulnerable) and another sensitive species were recorded. These localised patches of high conservation value will require careful management to minimise impacts during construction, despite the broader alignment being dominated by lower-sensitivity, transformed areas.

To limit impacts in sensitive areas, pipe cracking is the preferred method, especially near the railway line (short section of the proposed new Ø110 mm rising main on Portion 7 of Farm Searles No. 252). If pipe cracking cannot be used in this section, the pipeline alignment will be shifted to follow the Morrison Road reserve, avoiding dense patches of Milkwood Thicket. Both approaches (pipe cracking near the railway or standard trenching along Morrison Road) are expected to result in only minor residual impacts.

In addition, the botanical specialist has identified four (4) "search-and-rescue" areas along the pipeline route. Plant species such as grasses, succulents and geophytes, or any species with a good chance of surviving after construction, will be rescued and relocated.

The botanical/biodiversity specialist confirmed that all potential impacts can be minimised to **minor negative** (with mitigation).

How will this development enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to avoid negative impacts and enhance positive impacts?

All specialists (fauna, botany, biodiversity, aquatic, heritage and archaeology) provided a list of mitigation measures to avoid any negative impacts on the surrounding environment. These mitigation measures are included in the Environmental Management & Maintenance Programme (EMMP). An Environmental Control Officer (ECO) will be appointed to monitor compliance with the EMMP.

How will this development pollute and/or degrade the biophysical environment? What measures were explored to avoid or minimise these impacts.

An experienced and suitably qualified Environmental Control Officer will be appointed to oversee as-so-far-as the construction phase of the proposed pipeline to ensure that the biophysical environment will not be polluted by construction activities.

What waste will be generated by this development? Measures to avoid waste.

Construction waste will be generated during the construction phase and operational phase (maintenance / repair work). All waste must either be within a designated / demarcated area to be taken away at the end of the day or a skip. Additional measures are provided by the aquatic specialist to avoid any impacts on the watercourse crossings (included in the EMMP).

Normal waste will also be generated when construction staff bring their lunch (food, chip packets, cans, plastic bottles). The contractor must provide bins and toilets when working on site. Ensure that there are enough bins on-site at each working locality and enough toilets (1 per 15 people).

How will the ecological impacts result from this development impact on people's environmental right.

- Upgrading conservancy tanks into pump stations reduces overflow risks, protecting water quality and preventing pollution that could harm community health.
- Routing pipelines mostly along road reserves avoid unnecessary disturbance of private properties.
- Using trenchless will minimise traffic disruption during construction.
- By connecting to existing municipal infrastructure, the project ensures reliable sewage treatment.
- Noise, dust and temporary disruption may affect residents' well-being. However, mitigation measures to avoid / reduce these potential impacts are included in the EMMP.
- If erosion control or watertight infrastructure is not properly implemented (as per the EMMP), estuarine and groundwater systems could be polluted, undermining community health. An ECO will be appointed to ensure compliance with the EMMP to avoid negative impacts on the estuarine and groundwater systems.

## SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that If the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

|       |                                                                                                                                                                                                                                                                                                         |     |           |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------|
| (a)   | fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of -                                                                                                                                                                   |     |           |
| (i)   | the site where the activity to which the application relates is or is to be undertaken; and                                                                                                                                                                                                             | YES | EXEMPTION |
| (ii)  | any alternative site.                                                                                                                                                                                                                                                                                   | YES | EXEMPTION |
| (b)   | giving written notice, in any manner provided for in section 47D of the NEMA, to -                                                                                                                                                                                                                      |     |           |
| (i)   | the occupiers of the site and, if the applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | YES | EXEMPTION |
| (ii)  | owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;                                                                                                               | YES | EXEMPTION |
| (iii) | the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;                                                                                                                                     | YES | EXEMPTION |
| (iv)  | the municipality (Local and District Municipality) which has jurisdiction in the area;                                                                                                                                                                                                                  | YES | EXEMPTION |
| (v)   | any organ of state having jurisdiction in respect of any aspect of the activity; and                                                                                                                                                                                                                    | YES | EXEMPTION |
| (vi)  | any other party as required by the competent authority;                                                                                                                                                                                                                                                 | N/A | YES       |
| (c)   | placing an advertisement in -                                                                                                                                                                                                                                                                           |     |           |
| (i)   | one local newspaper; or                                                                                                                                                                                                                                                                                 | YES | EXEMPTION |
| (ii)  | any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;                                                                                                                                 | N/A | YES       |
| (d)   | placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken.                                                    | N/A | YES       |
| (e)   | using reasonable alternative methods, as agreed to by the Department, in those instances where a person is desirous of but unable to participate in the process due to—<br>(i) illiteracy; (ii) disability; or (iii) any other disadvantage.                                                            | N/A | YES       |

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

The Public Participation Plan as indicated in the application form has been complied with:

- Affected & neighbouring property owners were identified using CapeFarmMapper,
- Selected property owners were compiled into a list and sent to the Mossel Bay Municipality for confirmation of contact details,
- Key Authorities were identified according to whether they have a mandated interest in the area/site,
- Local Councillor was verified with the Mossel Bay Municipality,
- Site Notices were placed on site calling for I&APs to register and review the DBAR,
- Written notifications were sent to all potential I&APs via email/post/hand delivery informing of the availability of the DBAR and the opportunity to register as an I&AP.
- Advert appeared in the Mossel Bay Advertiser for I&APs to register and submit comment on the DBAR.

Comments received during the Public Participation Process will be considered and included in the Final Basic Assessment Report.

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

Mossel Bay Municipality (Carel Venter, Eric Louw, Dick Naidoo and Rudi Mini)  
BOCMA (Mr Carlo Abrahams)  
CapeNature (Megan Simons)  
Garden Route District Municipality (Ms Nina Viljoen)  
Heritage Western Cape (Emily-Jane Vowles)  
Department of Agriculture (Cor vd Walt & Brandon Layman)  
Department of Forestry (Melanie Koen)  
Department of Health (Nathan Jacobs)  
DEA&DP: Biodiversity & Coastal Management (Ileptieshaam Bekko)  
Department of Transport/Roads (Evan Burger)  
DFFE: Oceans & Coast (OCEAI@dffe.gov.za)  
SACAA (environment@caa.co.za)

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

Department of Defence – The EAP is of the opinion that this theme is not applicable to this application. Since there is no provision in the Protocols for 'not applicable' the lowest possible rating level of Low remains. There are no reasonable grounds to conduct any specialists' studies to affirm this and further consultation with the Department of Defence is not necessary.

5. If any of the State Departments and Organs of State did not respond, indicate which.

All comments received in response to the DBAR will be reflected in the Final BAR and information will then be available as to which State Departments, if any, did not respond within the prescribed 30-day commenting period.

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

Issues raised by I&APs during the Public Participation Period will be reflected in the Final BAR.

**Note:**

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that "Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
  - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
  - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
  - if a facsimile was sent, a copy of the facsimile Report;
  - if an electronic mail was sent, a copy of the electronic mail sent; and
  - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

## SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

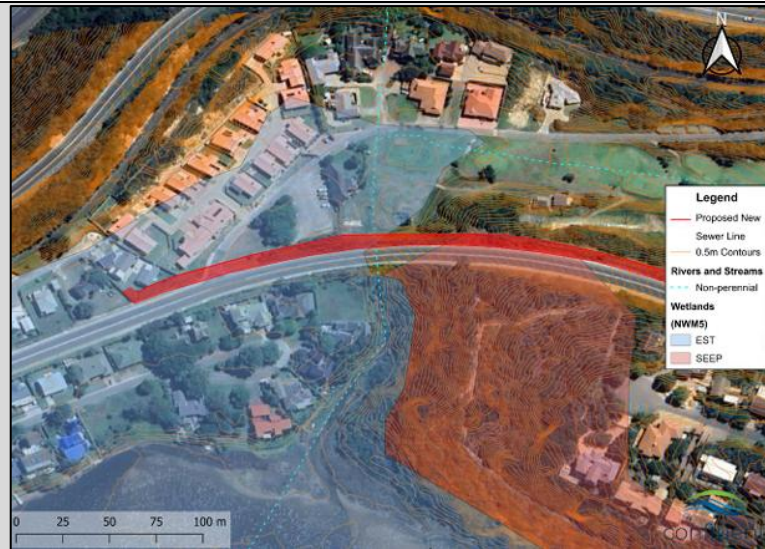
All specialist studies must be attached as Appendix G.

### 1. Groundwater

|      |                                                                                                                                                       |     |    |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 1.1. | Was a specialist study conducted?                                                                                                                     | YES | NO |
| 1.2. | Provide the name and or company who conducted the specialist study.                                                                                   |     |    |
| 1.3. | Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.                 |     |    |
| 1.4. | Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development. |     |    |

### 2. Surface water

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                           |     |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----|----|
| 2.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Was a specialist study conducted?                                                                                         | YES | NO |
| 2.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Provide the name and/or company who conducted the specialist study.                                                       |     |    |
| Confluent Environmental (Aquatic Impact Assessment)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                           |     |    |
| 2.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development. |     |    |
| <p>According to the aquatic specialist, the entire pipeline route intersects three mapped watercourses:</p> <ul style="list-style-type: none"><li>• The first crossing falls within the mapped Estuarine Functional Zone of the Great Brak Estuary, traversing a mapped non-perennial watercourse near the entrance to Dolphin's Creek Golf Course, approximately 1.7 km east of the N2 off-ramp (Figure 25).</li><li>• The second crossing is situated approximately 3.8 km east of the N2 off-ramp, mapped as flowing southwards and ultimately discharging into the sea (Figure 26).</li><li>• The third crossing lies approximately 5 km east of the N2 off-ramp, mapped as flowing in a south-westerly direction and terminating adjacent to Thys Olivier Street (Figure 27).</li></ul> |                                                                                                                           |     |    |



**Figure 25: The proposed sewer pipeline at the first crossing of mapped watercourses (Confluent Environmental, 2025).**



**Figure 26: The proposed sewer pipeline at the second crossing of mapped watercourses (Confluent Environmental, 2025).**



**Figure 27: The proposed sewer pipeline at the third crossing of mapped watercourses (Confluent Environmental, 2025).**

The specialist's on-site field assessment confirmed that all three (3) watercourse crossings are characterised as poorly defined flow paths, lacking the attributes required to classify them as formal watercourses under the National Water Act. As such, no formal watercourses will be affected by the proposal. It is important to note that the Great Brak River is classified as an estuary, not a watercourse, in terms of the NWA.

### 3. Coastal Environment

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                      |     |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 3.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Was a specialist study conducted?                                                                                                                    | YES | NO |
| 3.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Provide the name and/or company who conducted the specialist study.                                                                                  |     |    |
| Confluent Environmental (Aquatic Impact Assessment)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                      |     |    |
| 3.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development. |     |    |
| <p>Section 63 of the Integrated Coastal Management Act (ICMA) requires that any development within the Coastal Management Line (CML) or Coastal Protection Zone (CPZ) must take into account the need to protect coastal ecosystems, maintain public access and ensure that development does not compromise the long-term sustainability of the coastal environment.</p> <p>Approximately 180m of Section 03 (proposed 110mm sewer pipeline within Morrison Road reserve adjacent to Dolphin Creek Golf Estate) will fall within the Coastal Management Line (CML), the Coastal Protection Zone (CPZ) and Estuarine Functional Zone (EFZ) of the Great Brak Estuary. This particular section also falls within the 1:50 and 1:100 flood lines of the Great Brak Estuary. The Bitou Street Pump Station itself will also be located inside the CML. It is therefore recommended by the aquatic specialist to include the following design mitigation measures to reduce the likelihood of any spillage of sewage during flood events:</p> <ul style="list-style-type: none"> <li>• Air valves along sewer lines must be elevated above the 1:100-year flood line.</li> <li>• Sewer manhole covers must not be made of metal because of the risk of theft.</li> <li>• Manholes must be designed to be watertight.</li> </ul> <p>Care must be taken when converting the Bitou Street Conservancy Tank into a pump station to ensure that untreated sewage does not spill into the flow path, onto the beach or into the ocean.</p> <ul style="list-style-type: none"> <li>• Spill kits must be on site during construction</li> <li>• A check dam must be constructed if a large amount of spillage is expected</li> </ul> |                                                                                                                                                      |     |    |
| 3.4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Explain how estuary management plans (if applicable) has influenced the proposed development.                                                        |     |    |
| <p>For the Great Brak River, an Estuary Management Plan (EMP) was prepared in 2018. This plan describes the current condition of the estuary and sets clear goals for how it should be managed. The shared vision is: <i>"The Great Brak River estuary is managed in a transparent, accountable and cooperative way to balance biodiversity conservation, recreation, human safety and development, now and in the future."</i></p> <p>The proposed sewer project supports this vision. By replacing old conservancy tanks and connecting homes to the main municipal sewer system, the project will improve water quality near the Estuary. Cleaner water means healthier ecosystems, safer recreation, and better living conditions for the community.</p> <p>Refer to the below screenshot from the Aquatic Impact Assessment where objectives relevant to the proposed sewer infrastructure are highlighted in bold.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                      |     |    |

| Description                                                                    | Management Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Conservation of estuarine biodiversity                                      | <ul style="list-style-type: none"> <li>• Zonation plan for the estuary approved and implemented.</li> <li>• Great Brak River EMP integrated within local, district and provincial level planning documents (IDPs and SDFs).</li> <li>• Alien vegetation clearing and monitoring operations in place.</li> <li>• <b>Future development on the estuary is constrained to ensure that it does not compromise estuary health, ecosystem functioning and/or sensitive species (e.g. no development in the 1:50 year flood line).</b></li> <li>• Harvesting of living marine resources (fish and bait) on the estuary remains within sustainable limits, resource users do not exceed applicable size and bag limits</li> </ul> |
| 2. Restoration of estuary health                                               | <ul style="list-style-type: none"> <li>• Freshwater environmental reserve for the Great Brak River estuary implemented; revised dam operating rules for the Wolwedans are in force and respected.</li> <li>• Quantity and quality of freshwater reaching the estuary adequate to restore and maintain estuary health.</li> <li>• <b>Sewage and storm water entering the estuary monitored and controlled</b></li> </ul>                                                                                                                                                                                                                                                                                                   |
| 3. Effective and efficient mouth Management                                    | <ul style="list-style-type: none"> <li>• Mouth Management Plan (MMP) accepted and signed off by all relevant authorities (DWS, Disaster Management, Weather SA, Eden and Mossel Bay Municipalities).</li> <li>• Beaching protocols are implemented in accordance with the accepted Mouth Management</li> <li>• Plan &amp; approved Maintenance Management Plan (MMP).</li> </ul>                                                                                                                                                                                                                                                                                                                                          |
| 4. Water quality management                                                    | <ul style="list-style-type: none"> <li>• Water quality samples collected and analysed in accordance with EMP requirements.</li> <li>• Bacteriological (Faecal coliforms, E. coli and Enterococci) and physico-chemical parameters (nitrate, nitrite, ammonia, phosphorus, silica, suspended sediment, toxic substances) from water quality samples taken in the estuary.</li> </ul>                                                                                                                                                                                                                                                                                                                                       |
| 5. Visitor management                                                          | <ul style="list-style-type: none"> <li>• Informative and educational signage erected at key points access points that highlights the conservation importance and value of the Great Brak River estuary.</li> <li>• Visitors are sensitive to and aware of activities affecting health and functioning of the estuary, and management regulations governing use of the estuary.</li> <li>• Quality and quantity of visitor facilities (ablutions, parking, etc.) sufficient to meet visitor expectations and requirements.</li> </ul>                                                                                                                                                                                      |
| 6. Development planning                                                        | <ul style="list-style-type: none"> <li>• <b>Future development on the estuary is constrained to ensure that it does not compromise the existing sense of place, conservation value and/or cultural heritage resources associated with the Great Brak River estuary</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. Harmonious and effective Governance                                         | <ul style="list-style-type: none"> <li>• Great Brak River Estuary Advisory Forum convened and meets regularly.</li> <li>• Manager for the Great Brak River estuary appointed and capacitated</li> <li>• Arrangements for co-operative governance of the Great Brak River estuary defined and agreed to by all participating agencies.</li> <li>• Finance required for implementation of the Great Brak River estuary EMP secured and available.</li> <li>• Adequate capacity and resources available for implementation of the EMP amongst participating agencies</li> </ul>                                                                                                                                              |
| 8. Enhanced public awareness and appreciation for the Great Brak River estuary | <ul style="list-style-type: none"> <li>• Functional and effective stakeholder communication, education and awareness programmes are in place.</li> <li>• Informative and educational signage erected at key access points that highlights the conservation importance and value of the Great Brak River estuary</li> <li>• Great Brak River estuary recognised as an important local ecotourism destination.</li> </ul>                                                                                                                                                                                                                                                                                                   |
| 9. Research and monitoring                                                     | <ul style="list-style-type: none"> <li>• Adequate research and monitoring is being conducted that allows for quantification of utilisation patterns, changes in abiotic and biotic health, and benefits accruing to local communities and national economy.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

The development is consistent with the objectives of the Great Brak Estuarine Management Plan (EMP), which promotes improved water quality and infrastructure maintenance to prevent pollution.

3.5.

Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.

Approximately 180 m of Section 03 of the pipeline (proposed 110mm sewer pipeline within Morrison Road reserve adjacent to Dolphin Creek Golf Estate) will fall within both the Coastal Management Line (CML) and the Coastal Protection Zone (CPZ), while the Bitou Street Pump Station will also be located inside the CML. This section lies within the 1:50-year and 1:100-year flood lines of the Grea Brak Estuary, which means careful management is needed to prevent sewage spills during flood events. The aquatic specialist has therefore recommended several design measures: air valves along the sewer lines must be raised above the 1:100-year flood line, manhole covers must be made of non-metal materials to avoid theft, and all manholes must be watertight. When converting the Bitou Street Conservancy Tank into a pump station, care must be taken to ensure untreated sewage does not spill into the estuary, onto the beach, or into the ocean. During construction, spill kits must be available on site, and a check dam should be built if large spillages are expected. Together, these measures will help safeguard the estuary and surrounding environment while allowing the project to proceed responsibly.

Potential impacts during construction include erosion, sedimentation, and disturbance of estuarine habitat, while operational phase impacts may include pollution risks from sewage leaks or blockages. These impacts were assessed as Minor to Negligible with effective mitigation. Key mitigation measures include strict erosion and sediment control, demarcation of no-go zones, installation of watertight manholes and elevated air valves within flood-prone areas in the Estuarine Functional Zone, frequent inspections for leaks, and rapid response protocols for potential sewage spills.

| Impact                                                                                   | SEI without Mitigation | SEI with Mitigation |
|------------------------------------------------------------------------------------------|------------------------|---------------------|
| Sewer line design within the flood line                                                  | Minor (-50)            | Minor (-40)         |
| Disturbance of Estuarine habitat caused by construction activities                       | Minor (-60)            | Negligible (-24)    |
| Pollution of Estuarine habitat caused by pipeline blockages during the operational phase | Minor (-60)            | Minor (-54)         |
| No-Go Impact                                                                             | Moderate (-90)         | Minor (-45)         |

#### 4. Biodiversity

|                                                                    |                                                                                                                                                                                                  |     |    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 4.1.                                                               | Were specialist studies conducted?                                                                                                                                                               | YES | NO |
| 4.2.                                                               | Provide the name and/or company who conducted the specialist studies.                                                                                                                            |     |    |
| Confluent Environmental (Botanical/Biodiversity Impact Assessment) |                                                                                                                                                                                                  |     |    |
| 4.3.                                                               | Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development. |     |    |

- The DFFE Screening Tool.
- SANBI's Botanical Research and Herbarium Management System.
- iNaturalist.
- The 2018 updated South African National Vegetation Map from SANBI's Biodiversity GIS database.
- Shapefiles for the Western Cape Biodiversity Spatial Plan.
- Cape Farm Mapper.
- Chief Directorate: National Geo-spatial Information Geospatial Portal and Google Earth.
- Revised National List of Ecosystems.

The botanical/biodiversity specialists used the above-mentioned biodiversity informants to compile a detailed Botanical and Terrestrial Biodiversity Assessment.

4.4.

Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.

The Western Cape Biodiversity Spatial Plan (WCBSP) is a map that shows priority areas for protecting and conservation. The plan was updated in 2023, replacing the 2017 version. While the two (2) versions look similar overall, some important changes were made.

In the 2023 plan, most of the urban area is no longer marked for conservation, because the area has already been transformed by development. Some natural areas are still recognised as "Critical Biodiversity Areas" (CBA1), but certain forest areas that were previously included are no longer designated. Within the project area, parts of the proposed sewer route do cross CBA1 zones, specifically:

- Along Morrison Road near the railway, and
- At the eastern end of the alignment.

These sections are sensitive and need careful planning to avoid unnecessary impacts during construction. The findings of the WCBSP match closely with the 2024 National Vegetation Map, which shows that while most of site is already developed and of low biodiversity value, the sewer route does intersect areas of remaining natural vegetation. These are mainly patches of Milkwood Thicket and Coastal Forest, which are important to avoid / minimise disturbance. In short: most of the project area has low biodiversity sensitivity, but certain sections require special attention to protect the natural vegetation that remains.

To limit impacts in sensitive areas, pipe cracking is the preferred method, especially near the railway line. If pipe cracking cannot be used in this section, the pipeline alignment will be shifted to follow the Morrison Road reserve, avoiding dense patches of Milkwood Thicket. Both approaches (pipe cracking near the railway or standard trenching along Morrison Road) are expected to result in only minor residual impacts.

In addition, the botanical specialist has identified four "search-and-rescue" areas along the pipeline route (Figure 28). Plant species such as grasses, succulents and geophytes, or any species with a good chance of surviving after construction, will be rescued and relocated.



**Figure 28: Four (4) search-and-rescue areas identified by the botanical/biodiversity specialist.**

All mitigation measures / management actions recommended by the specialists are included in the EMMPr to avoid / minimise potential impacts.

4.5. Explain what impact the proposed development will have on the site-specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.

The Biodiversity Spatial Plan (BSP) assessment shows that the proposed sewer infrastructure will mostly run through already transformed areas such as road reserves, which are categorised as low sensitivity. However, certain sections of the alignment intersect Critical Biodiversity Areas (CBA1) and sensitive vegetation types like Milkwood Thicket and Coastal Forest, which play an important role in stabilising dunes and supporting biodiversity. These site-specific features mean that the project could fragment habitats or disturb protected vegetation if not carefully managed.

To address this, the development design was directly influenced by the BSP categories: the alignment was shifted into road reserves wherever possible, pipe cracking was chosen as the preferred method in sensitive areas to minimise excavation, and search-and-rescue of plant species was included to protect Species of Conservation Concern. As a result, the project balances infrastructure needs with biodiversity protection, ensuring that impacts are kept to a minor residual level and remain acceptable under the BSP framework.

4.6. If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.

The proposed development is not located in a protected area.

4.7. Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.

The fauna specialist confirmed that no Fauna Species of Conservation Concern (SCC) were recorded during the site inspection, and their likelihood of occurrence within the study area are assessed as very low and low.

Although sections of natural vegetation along the proposed pipeline alignment provide suitable habitat for *Bradypterus sylvaticus*, *Aloeides thyra orientis*, *Aloeides trimeni southeyae*, and *Circellium bacchus*, their likelihood of occurrence has been confirmed as **low** for the following reasons:

- *Bradypterus sylvaticus*: Superior habitats for *Bradypterus sylvaticus* exist outside the project footprint that provide better protection from human disturbance and noise. As a result, the likelihood of the SCC occurring within the relative small project area is considered **low**.
- *Aloeides thyra orientis*: The project area comprises sandy, unsurfaced ground where Cape Sugar Ants are present. While vegetation within the development footprint is not entirely removed, the specific larval food plants (*Aspalathus acuminata*, *A. laricifolia*, and *A. cymbiformis*) required for the persistence of the Species of Conservation Concern are absent. Furthermore, the site lies east of Hartenbos, beyond the documented eastern limit of the species' distribution. Accordingly, the conditions necessary to support the SCC are not met at this location. Likelihood of occurrence is **low**.
- *Aloeides trimeni southeyae*: While some potential larval food plants could occur in the area, the SCC itself is unlikely to be present because its overall distribution is disjunct. In other words, the site lies in a gap between the SCC's western and eastern populations, outside the areas where it is normally found. Likelihood of occurrence is **low**.
- *Circellium bacchus*: Suitable mammal dung is present to support the life processes of the SCC. It is, however, noted that both habitat of superior quality and greater amounts of suitable mammal dung (since mammals are likely deterred from the area due to the road) are likely to be present in the greater landscape. The presence of superior habitat and resources to support the SCC outside of the project area means that its likelihood of occurring in the relatively small project area is **low**.

## 5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.

No geographical aspects will be affected by the proposed development.

## 6. Heritage Resources

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                       |     |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----|----|
| 6.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Was a specialist study conducted?                                                                     | YES | NO |
| 6.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Provide the name and/or company who conducted the specialist study.                                   |     |    |
| A Notice of Intent to Develop, together with a Background Information Document, was submitted to Heritage Western Cape (HWC). HWC confirmed that no further studies to the NHRA are required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                       |     |    |
| 6.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Explain how areas that contain sensitive heritage resources have influenced the proposed development. |     |    |
| The proposed sewer infrastructure was designed to avoid impacts on sensitive heritage resources by keeping construction within already transformed areas and using trenchless methods. Adjacent archaeological surveys confirmed only low-density Stone Age scatters with “low archaeological sensitivity, with no indication of heritage resources”, while adjacent palaeontological assessments found the sandy soils to have poor fossil potential. Historical research also showed no significant heritage features in the study area, which has long been urbanised. As a result, the project relies on pipe cracking and pipe jacking to minimise disturbance, aligning pipelines within existing road reserves and redundant water line. Standard trenching will be limited to areas where pipe cracking is not feasible. |                                                                                                       |     |    |

## 7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.

There are no culturally or historically significant elements that will be affected by the proposed activity.

## 8. Socio/Economic Aspects

8.1. Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.

The community surrounding the proposed sewer infrastructure site in Great Brak River is urbanised by residential development. Situated within the urban edge, the area contains established housing, municipal services, and supporting infrastructure such as fibre, electricity, water pipelines, and stormwater channels. Socially, it comprises both permanent residents and seasonal holidaymakers, which places added pressure on conservancy tanks during peak holiday periods. Economically, dependence on municipal services to empty tanks has become costly and inefficient, underscoring the need for sustainable infrastructure. The community is service-dependent, with its economy and social well-being closely tied to reliable municipal systems.

8.2. Explain the socio-economic value/contribution of the proposed development.

The proposed sewer infrastructure offers clear socio-economic value to the Great Brak River community. By replacing the conservancy tank system with pump stations and pipelines, the project will reduce the high costs and inefficiencies of weekly (and sometimes daily) tank emptying, especially during peak holiday seasons. This ensures more reliable service delivery, which directly supports the well-being of both permanent residents and seasonal visitors. Improved sewer management also enhances public health, reduces environmental risks from overflows, and strengthens the area's appeal as a residential and holiday destination. Economically, the project lowers municipal operating costs, supports sustainable growth within the urban edge, and contributes to long-term infrastructure resilience, thereby safeguarding the community's social stability and economic viability.

8.3. Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.

Local residents will benefit from employment opportunities through short-term jobs and skills transfer linked to construction activities. The municipality will also ensure health and safety measures are in place, including dust control, proper sanitation facilities for workers, and clear communication with residents to minimise disruption. In addition, the applicant will prioritise the use of locally sourced material wherever possible.

8.4. Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.

The proposed sewer infrastructure development is not expected to negatively impact people's health and well-being, as the design specifically addresses potential concerns such as noise, odours, visual character, and sense of place.

The key social issues associated with the proposed activity may include some temporary negative impacts during the construction phase:

- Negative: Security and safety risk posed by workers when conducting the work.
- Negative: Temporary noise impacts for residents.

The EMMPr include mitigation measures to avoid/minimise the above impacts.

## SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

### 1. Details of the alternatives identified and considered.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 1.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts. |
| Provide a description of the preferred property and site alternative.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                |
| <p><u>Preferred Property &amp; Site Alternative</u></p> <ul style="list-style-type: none"> <li>• Sewer Lines (Sections 01, 02 &amp; 03) <ul style="list-style-type: none"> <li>○ Erf 4127 (Building Line of Private Property)</li> <li>○ Street Parcel ID: RE/2699 (Provincial Road Reserve)</li> <li>○ Street Parcel ID: RE/2176 (Provincial Road Reserve)</li> <li>○ Portion 7 of Farm SEARLES no. 252 (Building Line of Private Property)</li> <li>○ Street Parcel ID: RE/476 (Provincial Road Reserve)</li> <li>○ Erf 507 (Building Line of Private Property)</li> <li>○ Erf 516 (Building Line of Private Property)</li> <li>○ Remainder of Erf 840 (Building Line of Private Property)</li> <li>○ Farm 373 (Building Line of Private Property)</li> <li>○ Street Parcel ID: 465 (Provincial Road Reserve)</li> <li>○ Erf 610 (Building Line of Private Property)</li> <li>○ Street Parcel ID: 798 (Provincial Road Reserve)</li> <li>○ Street Parcel ID: RE/66/251 (Municipal Road Reserve)</li> </ul> </li> <li>• Conservancy Tank Upgrades <ul style="list-style-type: none"> <li>○ Street Parcel ID: RE/66/251 (Municipal Road Reserve)</li> <li>○ Erf 554 (Municipal Property)</li> </ul> </li> </ul> |                                                                                                                                |
| Provide a description of any other property and site alternatives investigated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                |
| <p>Two (2) site and subsequent installation method alternatives were investigation for a short section of the proposed new Ø110 mm rising main which required further investigation from a biodiversity &amp; botanical perspective due to the presence of intact natural thicket vegetation. During the site sensitivity verification, the specialist highlighted that the section of the alignment that deviates from the Morrison Road reserve, crosses a steep dune dominated by milkwood trees. This section traverses Portion 7 of Farm Searles No. 252 (Figure 29). Trenching through this area is expected to result in additional impacts, arising both from the challenges of excavation in steep terrain and the number of trees that would need to be removed. These impacts warrant consideration of alternative routing and/or alternative installation options.</p>                                                                                                                                                                                                                                                                                                                              |                                                                                                                                |
|  <p><b>Figure 29: Section across farm property 7/252 Searles where the pipeline deviates from Morrison Road reserve to follow the alignment of an old water pipeline, as per Municipal As-Built Plans. RED rectangle: Approximate Entry/Exit Pits. ORANGE square: Approximate Inspection Holes.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                |

On 04 March 2026, a meeting with the botanical/biodiversity specialist and the engineer confirmed that the **proposed alignment** for this sewer line section, follows the alignment of an **abandoned Municipal water pipeline** (Municipal As-Built Plans), with the intention to install the new sewer pipeline via Pipe Cracking along this old waterline (Preferred Installation Alternative). The engineers noted that the actual alignment **may differ from as-built plans**, so as a precautionary step, specialists were tasked to assess potential and actual impacts of Pipe Cracking across the defined area as indicated in Figure 30. The exact alignment will only be verified prior to construction through CCTV inspection (once pits have been opened along the waterline cameras will be used to trace the pipeline route).



**Figure 30: Expanded study area that was assessed by the specialists considering that there is a likelihood that the old water pipeline might not follow the municipal As-Built Plans.**

According to the engineers:

- Three (3) setup positions will be required at the bend points (entry / exit pits), each measuring approximately **9m in length by 1.5m in width** (Figure 30).
- Four (4) inspection holes will be required along the pipeline alignment, each measuring **4m x 4m**, to allow for assessment of the existing line.
- Entry & exit pits, as well as the inspection holes will be excavated by hand.

Taking the above information into account, the botanical/biodiversity specialist has confirmed that applying the Pipe Cracking method anywhere within the defined area (Figure 30) would result in a **minor negative impact**, which is considered acceptable from a botanical and biodiversity perspective although Forestry Permit may be required for trimming/removal of protected trees.

If Pipe Cracking cannot be implemented (following outcome of CCTV inspection prior to construction), it is then recommended to install the pipeline via standard trenching along Morrison Road, as indicated in Figure 31. Standard trenching along Morrison Road (Figure 31) is also expected to result in a **minor negative impact** acceptable from a botanical and biodiversity perspective.

Standard trenching along the old water pipeline route (Figure 30) was also assessed as an Alternative, however, would lead to a **moderate negative impact**, which is less acceptable from a biodiversity standpoint. Accordingly, this alternative is **not-preferred**.



**Figure 31: Preferred Standard Trenching Route Alignment.**

In conclusion, the condition of the old water pipeline along this short section will first be assessed using CCTV inspection to determine whether pipe cracking will work prior to construction. If the CCTV results indicate that pipe cracking cannot be implemented, the new sewer pipeline will instead be installed through standard trenching, limited to the area shown in Figure 13. After mitigation, both preferred installation methods (pipe cracking **or** standard trenching) are expected to result in a minor negative impact.

Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.

The Applicant proposes to upgrade the sewer system in Great Brak River. Two (2) existing conservancy tanks in Eekhorng Street and Bitou Street will be converted into pump stations. These tanks often overflow during busy holiday periods, causing pollution and inconvenience.

New supporting sewer pipelines will be laid along Morrison Road to connect the upgraded pump stations to the main municipal system at Dolphins Creek Golf Estate. Most of the activities will take place in existing road reserves, using trenchless methods that limit excavation and reduce disturbance.

The site selection matrix compared existing services, environmental sensitivity, accessibility, and alignment with Need and Desirability. Its outcome confirmed that the preferred property and alignment are the best environmental option because:

#### Existing Conservancy Tanks

- The conservancy tanks already service 20 and 95 + future 32 residential properties. Seasonal demand has made these conservancy tanks inadequate, leading to pollution risks. Conversion to pump stations addresses urgent public health and service delivery needs.

#### Supporting Sewer Pipelines

- The alignment follows municipal reserves and an abandoned water pipeline, enabling trenchless methods that reduce excavation and vegetation disturbance.
- The Morrison Road reserve does not overlap with threatened ecosystems, Critical Biodiversity Areas, or Ecological Support Areas. Aquatic specialists verified that mapped watercourses lack formal classification under the NWA, meaning impacts are minimal with proper mitigation.

Provide a full description of the process followed to reach the preferred alternative within the site.

### **Identification**

The Mossel Bay Municipality identified that the existing conservancy tanks in Eekhorning Street and Bitou Street were inadequate. During peak holiday seasons, they overflowed, causing pollution and inconvenience. This created a clear need to upgrade the sewer system to ensure reliable service delivery and protect public health.

### **Specialist Investigations & Site Sensitivity Verifications**

The Site Sensitivity Verification confirmed that most of the proposed alignment fell within already transformed residential and road reserve areas. Only the short deviation across Farm Searles required further investigation, which identified areas of higher botanical sensitivity. These potential impacts were effectively reduced through the evaluation and application of alternative installation methods along specific sections of the site alignment.

### **Assessment of Installation Methods**

- Pipe Jacking underneath existing roads.
- Pipe cracking along the asbestos municipal water pipeline, reducing excavation and disturbance.
- Standard trenching along Morrison Road if pipe cracking proves unfeasible along certain sections.

### **Site Selection Matrix**

The outcome of the site selection matrix revealed that the preferred site is the best environmental option when considering services, environmental sensitivities, accessibility and alignment with need and desirability.

Provide a detailed motivation if no property and site alternatives were considered.

List the positive and negative impacts that the property and site alternatives will have on the environment.

### **Positive**

- Use of existing infrastructure: Most of the pipeline alignment follows the Morrison Road reserve and an asbestos municipal water pipeline, reducing the need for new disturbance.
- Trenchless installation methods: Pipe cracking and pipe jacking minimise excavation, soil disturbance, and vegetation clearing.
- Reduced risk of pollution: Upgrading conservancy tanks into pump stations prevents seasonal overflows, protecting nearby residents and the estuary.
- Minor biodiversity impact: Specialists confirmed that most of the alignment avoids threatened ecosystems, Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs).
- Improved service delivery: Reliable sewer infrastructure supports sustainable urban development and public health.

### **Negative**

- Vegetation disturbance: A short deviation across Portion 7 of Farm Searles No. 252 may affect intact thicket vegetation and require trimming/removal of protected milkwood trees.
- Construction footprint: Entry/exit pits and inspection holes (for pipe cracking) will temporarily disturb soil and vegetation, even if excavated by hand.
- Aquatic sensitivity: Sections of the pipeline fall within mapped flood lines and the Estuarine Functional Zone (EFZ). Without proper erosion control and watertight design, risks to water quality could increase. Mitigation measures recommended by the specialists are included in the EMMPr in order to reduce potential impacts from moderate to minor.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>Noise and odour: Although pumps are located underground, construction and operation may generate temporary noise and odour impacts to nearby residents.</li> <li>Moderate biodiversity impact of non-preferred alternative: Standard trenching through the Farm Searles dune area (non-preferred alternative) would cause moderate negative impacts, deemed less acceptable from a botanical/biodiversity perspective.</li> </ul> |
| 1.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.                                                                                                                                                                                                                                                                                                                                                    |
| Provide a description of the preferred activity alternative.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p><b><u>Preferred Activity Alternative</u></b></p> <ul style="list-style-type: none"> <li>Upgrading of two (2) existing conservancy tanks by converting them into fully operational pump stations.</li> <li>Installation of new sewer pipelines to support the conservancy tank upgrades.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Provide a description of any other activity alternatives investigated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p>Although assessed, the no-go option considers the scenario where the sewer line and conversion of the conservancy tanks are not approved. In this case, the use of the sewer system would continue under the present conditions and would continue to overflow during peak holiday seasons.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Provide a motivation for the preferred activity alternative.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p>The preferred activity alternative was selected because it is practical, cost-effective and environmentally responsible. It directly addresses existing problems, supports future development, and ensures long-term protection of the Great Brak Estuary.</p> <ul style="list-style-type: none"> <li>The upgrade ensures that the sewer system can accommodate growth in Great Brak River, alleviating pressure on existing conservancy tanks.</li> <li>By eliminating frequent overflows and leakages, the activity reduces contamination risks near the Great Brak Estuary.</li> <li>Connecting erven directly to the municipal system addresses the operational inefficiencies of conservancy tanks, which often require costly, frequent emptying and show signs of leakage.</li> <li>The use of trenchless methods (pipe cracking and pipe jacking) limits excavation, reduces disturbance, and avoids sensitive ecosystems.</li> <li>The risk matrix confirmed that this activity alternative is the best environmental option, balancing service efficiency, accessibility and minimal biodiversity/aquatic/botanical/faunal impact.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Provide a detailed motivation if no activity alternatives exist.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| List the positive and negative impacts that the activity alternatives will have on the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p><b><u>Preferred Activity Alternative</u></b></p> <p>Positive</p> <ul style="list-style-type: none"> <li>Ensure adequate and reliable services to current properties and future demands.</li> <li>No conservancy tanks and associated maintenance.</li> <li>Unlock development potential in Great Brak which could contribute to municipal rates and taxes.</li> </ul> <p>Negative</p> <ul style="list-style-type: none"> <li>Temporary noise impacts during construction.</li> <li>Temporary safety impacts during construction.</li> <li>Temporary access restrictions for affected landowners when the pipelines are installed through roads/driveways.</li> </ul> <p><b><u>No-Go Activity Alternative</u></b></p> <p>Positive</p> <ul style="list-style-type: none"> <li>No temporary noise &amp; safety impacts during installation of the sewer pipeline.</li> </ul>                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

- No temporary access restrictions for affected landowners.

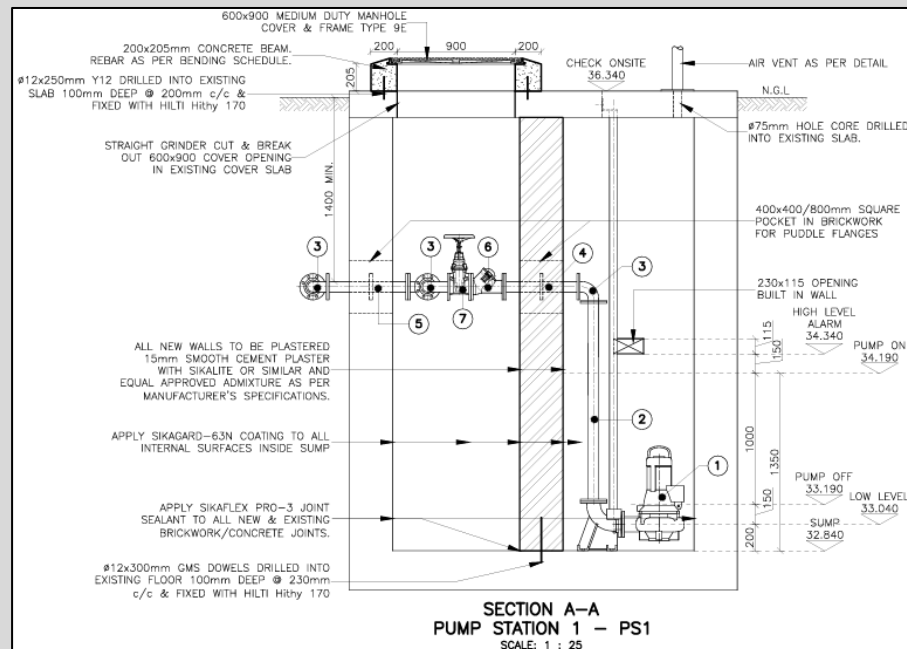
#### Negative

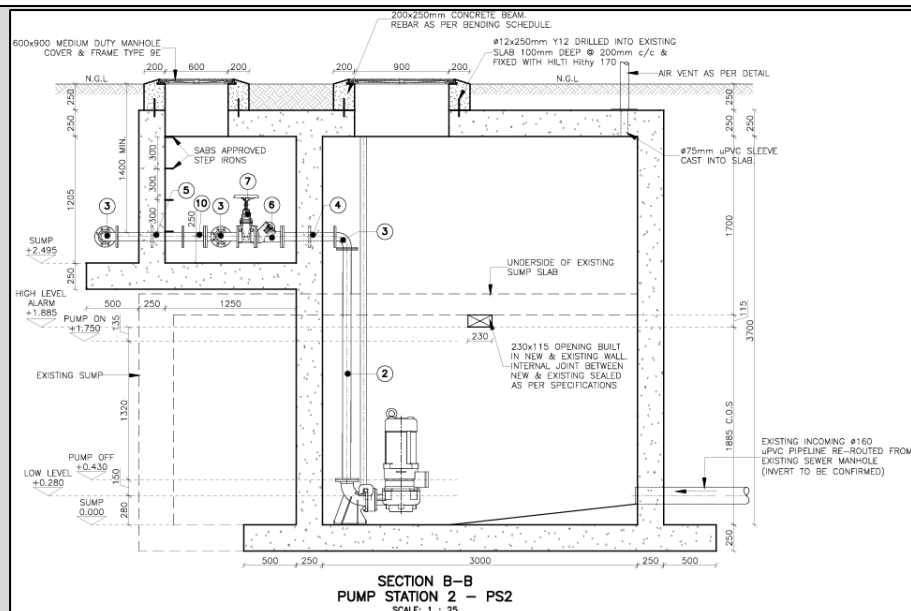
- Cost implications because of more frequent maintenance and repair work.
- The No-Go Activity Alternative would result in no sewer system upgrades and would therefore limit development in Great Brak River.
- Continued risk of contamination close to the sea and the Estuary.

|      |                                                                                                                              |
|------|------------------------------------------------------------------------------------------------------------------------------|
| 1.3. | Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts |
|------|------------------------------------------------------------------------------------------------------------------------------|

#### Preferred Design Alternative

- Eekhorng Street Pump Station (Figure 32)
  - Internal works by dividing the existing tank into chambers with masonry walls
  - Installation of mechanical sewer pumps and associated pipework
  - Pumps will be located in the underground pump sumps
  - Electrical supply via an existing miniature substation in Eekhorng Street
- Bitou Street Pump Station (Figure 32)
  - Addition of a new pump sump and valve chamber next to the existing tank
  - Pipework and sewer manhole modifications within the municipal property
  - Pumps will be located in the underground pump sumps
  - Electrical supply via existing substation at Manatoka Lane
- Sewer Lines
  - Section 01: Underground Ø90mm Class 12 HDPE/uPVC pipe
  - Section 02: Underground Ø160mm Class uPVC pipe
  - Section 03: Underground Ø110mm Class 12 HDPE / uPVC pipe





Provide a description of the preferred design or layout alternative.

Provide a motivation for the preferred design or layout alternative.

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Provide a detailed motivation if no design or layout alternatives exist.

List the positive and negative impacts that the design alternatives will have on the environment.

- Upgrading the Eekhorng and Bitou conservancy tanks into pump stations reuses existing municipal infrastructure, minimising new disturbance.
- Properly designed pump stations and sealed pipelines minimise leakage, overflow, and contamination risks.
- Reliable sewer connections support sustainable urban growth and reduce support on failing conservancy tanks.
- With the implementation of watertight manholes, elevated air valves, and non-metal manhole covers to prevent theft and maintain system security, the impact is minimised to acceptable levels (included in the EMMPr).

Negative

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
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| 1.4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.                                      |
| Provide a description of the preferred technology alternative:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |
| Not applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
| Provide a description of any other technology alternatives investigated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |
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| Provide a motivation for the preferred technology alternative.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |
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| Provide a detailed motivation if no alternatives exist.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
| List the positive and negative impacts that the technology alternatives will have on the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
| 1.5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.                                                                                                            |
| Provide a description of the preferred operational alternative.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
| No applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |
| Provide a description of any other operational alternatives investigated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                     |
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| Provide a motivation for the preferred operational alternative.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
| Provide a detailed motivation if no alternatives exist.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
| List the positive and negative impacts that the operational alternatives will have on the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |
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| 1.6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The option of not implementing the activity (the 'No-Go' Option).                                                                                                                                                                   |
| Provide an explanation as to why the 'No-Go' Option is not preferred.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                     |
| The No-Go Option is not preferred because it fails to solve existing problems, poses ongoing risks to the sea, the nearby estuary and community health, and cannot accommodate future development. The preferred design alternative (pump station upgrades + new supporting pipelines) is therefore the only viable option to ensure environmental sustainable service delivery.                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                     |
| 1.7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Provide an explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |
| 1.8.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.                                                                                                             |
| <p>The preferred alternatives for the Pienaarstrand Sewer Infrastructure project include the upgrade of the Eekhorning Street and Bitou Street conservancy tanks into pump stations, supported by new sewer pipelines along Morrison Road reserve connecting to the municipal system at Dolphins Creek Golf Estate.</p> <p>This layout was selected because it reuses existing municipal infrastructure, avoids sensitive ecosystems, and ensures reliable service delivery for current and future developments in Great Brak River, Mossel Bay Municipal District.</p> <p>After specialist input and site selection matrix evaluation, this location and design were confirmed as the most practical, cost-effective, and environmentally sustainable option.</p> |                                                                                                                                                                                                                                     |

## 2. “No-Go” areas

Explain what “no-go” area(s) have been identified during identification of the alternatives and provide the co-ordinates of the “no-go” area(s).

The development footprint and working area will be demarcated. All areas outside the demarcation are considered as “No-Go” areas during the construction phase.

## 3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.

### **Criteria for Assessment**

These criteria are drawn from the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989.

These criteria include:

- **Nature of the impact**

This is the appraisal of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how.

- **Extent of the impact**

Describe whether the impact will be local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region or will have an impact on a national scale or across international borders.

- **Duration of the impact**

The specialist / EAP should indicate whether the lifespan of the impact would be short term (0-5 years), medium term (5-15 years), long term (16-30 years) or permanent.

- **Intensity**

The specialist / EAP should establish whether the impact is destructive or benign and should be qualified as low, medium or high. The study must attempt to quantify the magnitude of the impacts and outline the rationale used.

- **Probability of occurrence**

The specialist / EAP should describe the probability of the impact occurring and should be described as improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of any prevention measures).

The impacts should also be assessed in terms of the following aspects:

- **Legal requirements**

The specialist / EAP should identify and list the relevant South African legislation and permit requirements pertaining to the development proposals. He / she should provide reference to the procedures required to obtain permits and describe whether the development proposals contravene the applicable legislation.

- **Status of the impact**

The specialist / EAP should determine whether the impacts are negative, positive or neutral ("cost – benefit" analysis). The impacts are to be assessed in terms of their effect on the project and the environment. For example, an impact that is positive for the proposed development may be negative for the environment. It is important that this distinction is made in the analysis.

- **Accumulative impact**

Consideration must be given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts must be evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact.

- **Degree of confidence in predictions**

The specialist / EAP should state what degree of confidence (low, medium or high) is there in the predictions based on the available information and level of knowledge and expertise.

Based on a synthesis of the information contained in the above-described procedure, you are required to assess the potential impacts in terms of the following significance criteria:

**No significance:** the impacts do not influence the proposed development and/or environment in any way.

**Low significance:** the impacts will have a minor influence on the proposed development and/or environment. These impacts require some attention to modification of the project design where possible, or alternative mitigation.

**Moderate significance:** the impacts will have a moderate influence on the proposed development and/or environment. The impact can be ameliorated by a modification in the project design or implementation of effective mitigation measures.

**High significance:** the impacts will have a major influence on the proposed development and/or environment and will result in the "no-go" option on the development or portions of the development regardless of any mitigation measures that could be implemented. This level of significance must be well motivated.

#### 4. Assessment of each impact and risk identified for each alternative.

**Note:** The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as Appendix J to this BAR.

##### Aquatic Impact Assessment

| Alternative:                                                                                          | Preferred Alternative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Layout &amp; Design Phase</b>                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Potential impact and risk:</b>                                                                     | Sewer line design in the flood line<br>Potential leakage of sewage during flood events that could pollute the estuary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Extent and duration of impact:                                                                        | Extend: Local (with & without mitigation)<br>Duration: Brief (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Consequence of impact or risk:                                                                        | Potential leakage of sewage during flood events that could pollute the estuary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Probability of occurrence:                                                                            | Likely (without mitigation)<br>Probably (with mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Low (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Degree to which the impact can be reversed:                                                           | High (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Degree to which the impact can be managed:                                                            | EMMP <sub>r</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Degree to which the impact can be mitigated:                                                          | From Minor (-50) to Minor (-40)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Proposed mitigation:                                                                                  | <ul style="list-style-type: none"> <li>• Air valves along sewer lines must be elevated above the 1:100-year flood line</li> <li>• Sewer manhole covers should not be made of metal because of the risk of theft.</li> <li>• Manholes must be designed to be watertight to prevent environmental contamination from leaking sewage and to avoid ingress of surface water during rainfall and flood events. Watertight manholes achieve this seal using components like gaskets on the manhole cover, proper joint sealing between sections, and leak-resistant pipe-to-manhole connections, which are essential for system integrity and cost efficiency.</li> </ul> |
| Residual impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Cumulative impact post mitigation:                                                                    | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)    | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Alternative:                                                                                          | Preferred Alternative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Construction Phase</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Potential impact and risk:</b>                                                                     | Disturbance of estuarine habitat caused by construction activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Extent and duration of impact:                                                                        | Extend: Limited (without mitigation)<br>Very Limited (with mitigation)<br>Duration: Short term (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Consequence of impact or risk:                                                                        | Negative impact on estuarine habitat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Probability of occurrence:                                                                            | Almost certain (without mitigation)<br>Unlikely (with mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Low (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Degree to which the impact can be reversed:                                                           | High (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be managed:                                                            | EMMPr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Degree to which the impact can be mitigated:                                                          | From Minor (-60) to Negligible (-24)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Proposed mitigation:                                                                                  | <ul style="list-style-type: none"> <li>• An Environmental Control Officer (ECO) must be appointed for the duration of the construction phase to monitor and report back on compliance with conditions of the environmental authorisation.</li> <li>• Consult weather forecasts daily and weekly. Do not work during rainfall and minimise the storage of mobile materials in low-lying areas. Plan the construction area as if it could be inundated with floodwaters in the event of a significant rainfall event.</li> <li>• The width of the working area through must be as narrow as possible and must be clearly demarcated. The stream outside of this demarcated area must be considered as a No-Go area.</li> <li>• Revegetation of the pipeline area must be actively supported by planting kweek grass: <i>Cynodon dactylon</i>.</li> <li>• Open trenching for sewer lines should be done in as short a stretch as possible and backfilled with material as soon as possible to reduce the likelihood of material loss in the event of flooding. Excavated soil should be placed on the northern side of the trench.</li> <li>• Keep a skip on site so that any waste materials can be conveniently discarded and removed. This includes small amounts of dirty water, such as that used for mixing concrete.</li> <li>• Equipment and materials lay-down areas should be located at the proposed site camp only.</li> <li>• Post-construction site clean-up must be completed to ensure the entire site footprint and the surrounding area have been cleared of litter and any waste materials associated with</li> </ul> |

|                                                                                                       |                                                              |
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|                                                                                                       | construction. The ECO should be informed of the construction |
| Residual impacts:                                                                                     | None                                                         |
| Cumulative impact post mitigation:                                                                    | None                                                         |
| Significance rating of impact after mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High) | Negligible Negative                                          |

| Alternative:                                                                                             | Preferred Alternative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Operational Phase                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Potential impact and risk:                                                                               | Pollution of estuarine habitat caused by pipeline blockages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Nature of impact:                                                                                        | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Extent and duration of impact:                                                                           | Extend: Local(with & without mitigation)<br>Duration: Brief (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Consequence of impact or risk:                                                                           | Pollution entering the estuary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Probability of occurrence:                                                                               | Almost certain (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Degree to which the impact may cause irreplaceable loss of resources:                                    | Low (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be reversed:                                                              | High (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Indirect impacts:                                                                                        | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Cumulative impact prior to mitigation:                                                                   | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Significance rating of impact prior to mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Degree to which the impact can be avoided:                                                               | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Degree to which the impact can be managed:                                                               | EMMPr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact can be mitigated:                                                             | From Minor (-60) to Minor (-54)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Proposed mitigation:                                                                                     | <ul style="list-style-type: none"> <li>• When blockages to sewerage infrastructure within the EFZ occur, the maintenance team should ensure a honey-sucker is on standby to mop up any spills or overflows for removal and disposal at the Wastewater Treatment Works.</li> <li>• Any serious sewage spills that result in large quantities of sewage leaking from a manhole must be contained in a temporary coffer dam, which can be constructed using sandbags for the walls and plastic sheeting as a base. From here, honey-suckers can collect sewage for removal.</li> <li>• Any water-tight seals around manholes, joints or other access points that must be broken for maintenance should be replaced thereafter to ensure the mitigation measures to prevent water ingress or sewage leakage are maintained under flood scenarios.</li> <li>• Keep sewer line servitudes clear of dense vegetation to facilitate access and reduce the risk of roots cracking sewer lines.</li> </ul> |
| Residual impacts:                                                                                        | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Cumulative impact post mitigation:                                                                       | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Significance rating of impact after mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High)    | Negligible Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Alternative:                                                                                          | No-Go Alternative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Phase                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Potential impact and risk:</b>                                                                     | Decrease in water quality caused by sewage leaks from overflowing conservancy tanks                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Extent and duration of impact:                                                                        | Extend: Local(with & without mitigation)<br>Duration: Permanent (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Consequence of impact or risk:                                                                        | Decline in water quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Probability of occurrence:                                                                            | Almost certain (without mitigation)<br>Unlikely (with mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Low (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact can be reversed:                                                           | High (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Moderate Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Degree to which the impact can be managed:                                                            | EMMPr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Degree to which the impact can be mitigated:                                                          | From Moderate (-90) to Minor (-45)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Proposed mitigation:                                                                                  | <ul style="list-style-type: none"> <li>• Conduct frequent inspections for any potential leaks during operation (twice a year).</li> <li>• Test water quality monthly to detect any possible leaks.</li> <li>• Report leaks as soon as possible to the municipality.</li> <li>• Have spill containment measures and emergency response procedures in place in case of accidental leakage.</li> <li>• Empty the conservancy tanks more frequently with honey-suckers (increase frequency as the usage increases).</li> </ul> |
| Residual impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Cumulative impact post mitigation:                                                                    | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)    | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

### **Botanical/Biodiversity Impact Assessment**

This botanical and biodiversity impact assessment covers the full sewage pipeline layout within the Morrison Road reserve, as well as three alternatives (Options 01, 02 and 03) for a short section that crosses Farm Searles No. 252 outside the reserve.

The specialist has divided the Farm Searles No. 252 section into two sensitivity zones:

- Section A – Railway Corridor Zone: Dense thicket vegetation and steep slopes, rated as highly sensitive (Figure 33 – Red Polygon).
- Section B – Morrison Road Corridor Zone: Transformed or partially disturbed vegetation, rated as moderate to low sensitivity (Figure 33 – Green Polygon).

The three alternatives through Farm Searles No. 252 are:

- Option 01: Pipe cracking within either Railway Corridor Zone or Morrison Road Corridor Zone (Section A or Section B).
- Option 02: Standard trenching within Morrison Road Corridor Zone (Section B).
- Option 03: Standard trenching within Railway Corridor Zone (Section A).



**Figure 33: Sensitivity Corridor Zones across Farm Searles No. 252. RED Polygon: Section A (Railway Corridor Zone. GREEN Polygon: Section B (Morrison Road Corridor).**

| Alternative:                                                                                             | Preferred Alternative<br>Sewage Layout & Option 01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Layout & Design Phase                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Potential impact and risk:                                                                               | Disturbance of a Milkwood Thicket                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Nature of impact:                                                                                        | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Extent and duration of impact:                                                                           | Extent: Very Limited(with & without mitigation)<br>Duration: Long term (without mitigation)<br>Medium term (with mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Consequence of impact or risk:                                                                           | Negative impact on Milkwood Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Probability of occurrence:                                                                               | Certain (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact may cause irreplaceable loss of resources:                                    | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Degree to which the impact can be reversed:                                                              | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Indirect impacts:                                                                                        | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cumulative impact prior to mitigation:                                                                   | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Significance rating of impact prior to mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Degree to which the impact can be avoided:                                                               | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Degree to which the impact can be managed:                                                               | EMMPr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Degree to which the impact can be mitigated:                                                             | From Minor (-63) to Minor (-49)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Proposed mitigation:                                                                                     | *Restrict construction footprint strictly to the approved disturbance area, including machinery access, pipe-jacking pits, and temporary storage areas. * Protect intact vegetation and mature milkwood trees by erecting temporary no-go fencing around sensitive patches prior to construction. * Minimise soil disturbance and erosion on steep slopes using measures such as temporary ground mats, stabilisation of exposed soil, and construction during low soil moisture periods. * Environmental awareness training for construction staff, highlighting sensitive vegetation, no-go areas, and reporting procedures. |
| Residual impacts:                                                                                        | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Cumulative impact post mitigation:                                                                       | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Significance rating of impact after mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High)    | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Alternative:                                                                                          | Preferred Alternative <sup>2</sup><br>Sewage Layout & Option 02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Layout & Design Phase                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Potential impact and risk:</b>                                                                     | <b>Disturbance of a Milkwood Thicket</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Extent and duration of impact:                                                                        | Extent: Very Limited(with & without mitigation)<br>Duration: Long term (without mitigation)<br>Medium term (with mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Consequence of impact or risk:                                                                        | Negative impact on Milkwood Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Probability of occurrence:                                                                            | Certain (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Degree to which the impact can be reversed:                                                           | Low (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Degree to which the impact can be managed:                                                            | EMMP <sup>r</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Degree to which the impact can be mitigated:                                                          | From Minor (-70) to Minor (-56)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Proposed mitigation:                                                                                  | *Restrict construction footprint strictly to the approved disturbance area, including machinery access, pipe-jacking pits, and temporary storage areas. * Protect intact vegetation and mature milkwood trees by erecting temporary no-go fencing around sensitive patches prior to construction. * Minimise soil disturbance and erosion on steep slopes using measures such as temporary ground mats, stabilisation of exposed soil, and construction during low soil moisture periods. * Environmental awareness training for construction staff, highlighting sensitive vegetation, no-go areas, and reporting procedures. |
| Residual impacts:                                                                                     | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Cumulative impact post mitigation:                                                                    | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)    | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

<sup>2</sup> The condition of the old water pipeline along the railway line (through Farm 7/252) will first be assessed using CCTV inspection to determine whether pipe cracking will work prior to construction (Preferred Alternative – Option 01). If the CCTV results indicate that pipe cracking cannot be implemented, the new sewer pipeline will instead be installed through standard trenching, limited to the area along Morrison Road Reserve (Preferred Alternative - Option 02). After mitigation, both preferred installation methods (pipe cracking or standard trenching) are expected to result in a minor negative impact.

| Alternative:                                                                                             | Non-Preferred Alternative<br>Sewage Layout & Option 03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Layout & Design Phase                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Potential impact and risk:</b>                                                                        | <b>Disturbance of a Milkwood Thicket</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Nature of impact:                                                                                        | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Extent and duration of impact:                                                                           | Extent: Very Limited(with & without mitigation)<br>Duration: Ongoing (without mitigation)<br>Long term (with mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Consequence of impact or risk:                                                                           | Negative impact on Milkwood Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Probability of occurrence:                                                                               | Certain (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact may cause irreplaceable loss of resources:                                    | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Degree to which the impact can be reversed:                                                              | Low (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Indirect impacts:                                                                                        | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cumulative impact prior to mitigation:                                                                   | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Significance rating of impact prior to mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High) | Moderate Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Degree to which the impact can be avoided:                                                               | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Degree to which the impact can be managed:                                                               | EMMPr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Degree to which the impact can be mitigated:                                                             | From Minor (-98) to Minor (-77)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Proposed mitigation:                                                                                     | *Restrict construction footprint strictly to the approved disturbance area, including machinery access, pipe-jacking pits, and temporary storage areas. * Protect intact vegetation and mature milkwood trees by erecting temporary no-go fencing around sensitive patches prior to construction. * Minimise soil disturbance and erosion on steep slopes using measures such as temporary ground mats, stabilisation of exposed soil, and construction during low soil moisture periods. * Environmental awareness training for construction staff, highlighting sensitive vegetation, no-go areas, and reporting procedures. |
| Residual impacts:                                                                                        | Moderate Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cumulative impact post mitigation:                                                                       | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Significance rating of impact after mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High)    | Moderate Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Alternative:                                                                                          | Preferred Alternative<br>Sewage Layout & Option 01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction Phase                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Potential impact and risk:                                                                            | Loss of Plant Species of Conservation Concern (SCC) and Ecologically Important Plant Taxa from Excavation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Extent and duration of impact:                                                                        | Extent: Very Limited(with & without mitigation)<br>Duration: Medium term (without mitigation)<br>Short term (with mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Consequence of impact or risk:                                                                        | Negative impact on Plant SCC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Probability of occurrence:                                                                            | Certain (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Degree to which the impact can be reversed:                                                           | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Degree to which the impact can be managed:                                                            | EMMPr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Degree to which the impact can be mitigated:                                                          | From Minor (-70) to Minor (-49)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Proposed mitigation:                                                                                  | <p>*Delineate the footprint of disturbance and mark protected tree species.* Obtain the necessary permits for activities affecting these protected species from DFFE.* Integrate effective erosion control and waste management strategies (refer to the aquatic specialist report for further details) where trees will be affected.* Make use of visible signage and danger tape to indicate the work area. No-Go signage to indicate limits of disturbance.* ECO to inspect signage and placement.* Rescue grasses, succulent, and geophyte plant species, or any species that could have a high likelihood of survival post construction.* Monitor staff helping to ensure plants are removed for maximum survivability.* Record the species and location of all rescued plants.* Preferably store the plants nearby or alternatively at an agreed upon location / nursery where they can be watered regularly. * Undertake weeding of the rescued plants every second month. * ECO to record all rescued plants that go missing or that die during their time in the nursery. * Ensure that the construction follows a clear plan. Hold weekly briefing meetings with staff and check ahead for rainfall predictions. * Installing erosion control blankets during construction can help manage soil movement in areas identified as vulnerable to erosion and sediment runoff. * Turning and parking for construction vehicles and stockpiling of materials must be in areas that are already cleared and disturbed. Avoid activity in natural</p> |

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                    | vegetation outside of the footprint layout. * Label topsoil & subsoil stockpiles clearly. * Ensure topsoil is appropriately covered and banded.* Halt excavation during significant rainfall events.* Once construction is finished, ensure topsoil is replaced on top of subsoils to keep seed bank intact. * Have bins and skips on the construction site and ensure that staff remove rubbish weekly. Have weekly inspections to ensure no waste in the surrounding landscape. |
| Residual impacts:                                                                                  | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Cumulative impact post mitigation:                                                                 | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Alternative:                                                                                          | Preferred Alternative<br>Sewage Layout & Option 02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction Phase                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Potential impact and risk:                                                                            | Loss of Plant Species of Conservation Concern (SCC) and Ecologically Important Plant Taxa from Excavation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Extent and duration of impact:                                                                        | Extent: Very Limited(with & without mitigation)<br>Duration: Long term (without mitigation)<br>Medium term (with mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Consequence of impact or risk:                                                                        | Negative impact on Plant SCC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Probability of occurrence:                                                                            | Certain (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Degree to which the impact can be reversed:                                                           | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Degree to which the impact can be managed:                                                            | EMMPr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Degree to which the impact can be mitigated:                                                          | From Minor (-63) to Minor (-42)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Proposed mitigation:                                                                                  | *Delineate the footprint of disturbance and mark protected tree species.* Obtain the necessary permits for activities affecting these protected species from DFFE.* Integrate effective erosion control and waste management strategies (refer to the aquatic specialist report for further details) where trees will be affected.* Make use of visible signage and danger tape to indicate the work area. No-Go signage to indicate limits of disturbance.* ECO to inspect signage and placement.* Rescue grasses, succulent, and geophyte plant species, or any species that could have a high likelihood of survival post construction.* Monitor staff helping to ensure plants are removed for maximum survivability.* Record the species and location of all rescued |

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                                                                                                    | plants.* Preferably store the plants nearby or alternatively at an agreed upon location / nursery where they can be watered regularly. * Undertake weeding of the rescued plants every second month. * ECO to record all rescued plants that go missing or that die during their time in the nursery. * Ensure that the construction follows a clear plan. Hold weekly briefing meetings with staff and check ahead for rainfall predictions. * Installing erosion control blankets during construction can help manage soil movement in areas identified as vulnerable to erosion and sediment runoff. * Turning and parking for construction vehicles and stockpiling of materials must be in areas that are already cleared and disturbed. Avoid activity in natural vegetation outside of the footprint layout. * Label topsoil & subsoil stockpiles clearly. * Ensure topsoil is appropriately covered and bunded.* Halt excavation during significant rainfall events.* Once construction is finished, ensure topsoil is replaced on top of subsoils to keep seed bank intact. * Have bins and skips on the construction site and ensure that staff remove rubbish weekly. Have weekly inspections to ensure no waste in the surrounding landscape. |
| Residual impacts:                                                                                  | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Cumulative impact post mitigation:                                                                 | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Alternative:                                                                                          | Non-Preferred Alternative<br>Sewage Layout & Option 03                                                                                               |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction Phase                                                                                    |                                                                                                                                                      |
| Potential impact and risk:                                                                            | Loss of Plant Species of Conservation Concern (SCC) and Ecologically Important Plant Taxa from Excavation                                            |
| Nature of impact:                                                                                     | Negative                                                                                                                                             |
| Extent and duration of impact:                                                                        | Extent: Limited (without mitigation)<br>Very Limited (with mitigation)<br>Duration: Medium term (without mitigation)<br>Short term (with mitigation) |
| Consequence of impact or risk:                                                                        | Negative impact on Plant SCC                                                                                                                         |
| Probability of occurrence:                                                                            | Certain (with & without mitigation)                                                                                                                  |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Moderate (with & without mitigation)                                                                                                                 |
| Degree to which the impact can be reversed:                                                           | Moderate (with & without mitigation)                                                                                                                 |
| Indirect impacts:                                                                                     | None                                                                                                                                                 |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                 |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Moderate Negative                                                                                                                                    |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                 |
| Degree to which the impact can be managed:                                                            | EMMPr                                                                                                                                                |
| Degree to which the impact can be mitigated:                                                          | From Moderate (-91) to Minor (-70)                                                                                                                   |

|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Proposed mitigation:                                                                                  | <p>*Delineate the footprint of disturbance and mark protected tree species.* Obtain the necessary permits for activities affecting these protected species from DFFE.* Integrate effective erosion control and waste management strategies (refer to the aquatic specialist report for further details) where trees will be affected.* Make use of visible signage and danger tape to indicate the work area. No-Go signage to indicate limits of disturbance.* ECO to inspect signage and placement.* Rescue grasses, succulent, and geophyte plant species, or any species that could have a high likelihood of survival post construction.* Monitor staff helping to ensure plants are removed for maximum survivability.* Record the species and location of all rescued plants.* Preferably store the plants nearby or alternatively at an agreed upon location / nursery where they can be watered regularly. * Undertake weeding of the rescued plants every second month. * ECO to record all rescued plants that go missing or that die during their time in the nursery. * Ensure that the construction follows a clear plan. Hold weekly briefing meetings with staff and check ahead for rainfall predictions. * Installing erosion control blankets during construction can help manage soil movement in areas identified as vulnerable to erosion and sediment runoff. * Turning and parking for construction vehicles and stockpiling of materials must be in areas that are already cleared and disturbed. Avoid activity in natural vegetation outside of the footprint layout. * Label topsoil &amp; subsoil stockpiles clearly. * Ensure topsoil is appropriately covered and banded.* Halt excavation during significant rainfall events.* Once construction is finished, ensure topsoil is replaced on top of subsoils to keep seed bank intact. * Have bins and skips on the construction site and ensure that staff remove rubbish weekly. Have weekly inspections to ensure no waste in the surrounding landscape.</p> |
| Residual impacts:                                                                                     | Moderate Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cumulative impact post mitigation:                                                                    | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Significance rating of impact after mitigation<br>(e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Alternative:                                                                                          | Preferred Alternative<br>Sewage Layout & Option 01                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Phase                                                                                     |                                                                                                                                                                                                                                        |
| Potential impact and risk:                                                                            | The Negative Impact of Edge Effects and Invasive Species on the Natural Vegetation on and Around the Pipeline Route                                                                                                                    |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                               |
| Extent and duration of impact:                                                                        | Extent: Limited (without mitigation)<br>Very Limited (with mitigation)<br>Duration: Ongoing (without mitigation)<br>Medium term (with mitigation)                                                                                      |
| Consequence of impact or risk:                                                                        | Invasive and exotic taxa may displace recovering natural vegetation.                                                                                                                                                                   |
| Probability of occurrence:                                                                            | Almost Certain (with & without mitigation)                                                                                                                                                                                             |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Moderate (with & without mitigation)                                                                                                                                                                                                   |
| Degree to which the impact can be reversed:                                                           | Moderate (with & without mitigation)                                                                                                                                                                                                   |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                   |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                   |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                         |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                   |
| Degree to which the impact can be managed:                                                            | EMMP <sub>r</sub>                                                                                                                                                                                                                      |
| Degree to which the impact can be mitigated:                                                          | From Minor (-72) to Minor (-42)                                                                                                                                                                                                        |
| Proposed mitigation:                                                                                  | *Record plants successfully replanted & plants that died before replanting.* Target areas prone to erosion.* Include results in ECO reporting.* Monitor the route to ensure sufficient vegetation cover with indigenous plant species. |
| Residual impacts:                                                                                     | Minor Negative                                                                                                                                                                                                                         |
| Cumulative impact post mitigation:                                                                    | None                                                                                                                                                                                                                                   |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)    | Minor Negative                                                                                                                                                                                                                         |

| Alternative:                                                                                          | Preferred Alternative<br>Sewage Layout & Option 02                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Phase                                                                                     |                                                                                                                                                                                                                                                                                                                                                       |
| Potential impact and risk:                                                                            | The Negative Impact of Edge Effects and Invasive Species on the Natural Vegetation on and Around the Pipeline Route                                                                                                                                                                                                                                   |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                              |
| Extent and duration of impact:                                                                        | Extent: Limited (without mitigation)<br>Very Limited (with mitigation)<br>Duration: Ongoing (without mitigation)<br>Medium term (with mitigation)                                                                                                                                                                                                     |
| Consequence of impact or risk:                                                                        | Invasive and exotic taxa may displace recovering natural vegetation.                                                                                                                                                                                                                                                                                  |
| Probability of occurrence:                                                                            | Almost Certain (with & without mitigation)                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be reversed:                                                           | Low (with & without mitigation)                                                                                                                                                                                                                                                                                                                       |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                  |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                  |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                        |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be managed:                                                            | EMMPr                                                                                                                                                                                                                                                                                                                                                 |
| Degree to which the impact can be mitigated:                                                          | From Minor (-66) to Minor (-42)                                                                                                                                                                                                                                                                                                                       |
| Proposed mitigation:                                                                                  | *Record plants successfully replanted & plants that died before replanting.* Target areas prone to erosion.* Include results in ECO reporting.* Undertake every 4 months, or when the road reserve maintenance occurs according to an approved clearing plan.* Monitor the route to ensure sufficient vegetation cover with indigenous plant species. |
| Residual impacts:                                                                                     | Minor Negative                                                                                                                                                                                                                                                                                                                                        |
| Cumulative impact post mitigation:                                                                    | None                                                                                                                                                                                                                                                                                                                                                  |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)    | Minor Negative                                                                                                                                                                                                                                                                                                                                        |

| Alternative:                                                                                          | Non-Preferred Alternative<br>Sewage Layout & Option 03                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Phase                                                                                     |                                                                                                                                                                                                                                                                                                                                                       |
| Potential impact and risk:                                                                            | The Negative Impact of Edge Effects and Invasive Species on the Natural Vegetation on and Around the Pipeline Route                                                                                                                                                                                                                                   |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                              |
| Extent and duration of impact:                                                                        | Extent: Limited (without mitigation)<br>Very Limited (with mitigation)<br>Duration: Ongoing (without mitigation)<br>Medium term (with mitigation)                                                                                                                                                                                                     |
| Consequence of impact or risk:                                                                        | Invasive and exotic taxa may displace recovering natural vegetation.                                                                                                                                                                                                                                                                                  |
| Probability of occurrence:                                                                            | Almost Certain (with & without mitigation)                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be reversed:                                                           | Low (with & without mitigation)                                                                                                                                                                                                                                                                                                                       |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                  |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                  |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Moderate Negative                                                                                                                                                                                                                                                                                                                                     |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be managed:                                                            | EMMP                                                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be mitigated:                                                          | From Moderate (-78) to Minor (-54)                                                                                                                                                                                                                                                                                                                    |
| Proposed mitigation:                                                                                  | *Record plants successfully replanted & plants that died before replanting.* Target areas prone to erosion.* Include results in ECO reporting.* Undertake every 4 months, or when the road reserve maintenance occurs according to an approved clearing plan.* Monitor the route to ensure sufficient vegetation cover with indigenous plant species. |
| Residual impacts:                                                                                     | Moderate Negative                                                                                                                                                                                                                                                                                                                                     |
| Cumulative impact post mitigation:                                                                    | None                                                                                                                                                                                                                                                                                                                                                  |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)    | Minor Negative                                                                                                                                                                                                                                                                                                                                        |

| Alternative:                                                                                          | No-Go Alternative                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Phase                                                                                     |                                                                                                                                                                                                                                                                                                                                                       |
| Potential impact and risk:                                                                            | The Negative Impact of Edge Effects and Invasive Species on the Natural Vegetation on and Around the Pipeline Route                                                                                                                                                                                                                                   |
| Nature of impact:                                                                                     | Negative                                                                                                                                                                                                                                                                                                                                              |
| Extent and duration of impact:                                                                        | Extent: Very Limited (with & without mitigation)<br>Duration: Ongoing (without mitigation)<br>Medium term (with mitigation)                                                                                                                                                                                                                           |
| Consequence of impact or risk:                                                                        | Invasive and exotic taxa may displace recovering natural vegetation.                                                                                                                                                                                                                                                                                  |
| Probability of occurrence:                                                                            | Almost Certain (with & without mitigation)                                                                                                                                                                                                                                                                                                            |
| Degree to which the impact may cause irreplaceable loss of resources:                                 | Moderate (with & without mitigation)                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be reversed:                                                           | High (with & without mitigation)                                                                                                                                                                                                                                                                                                                      |
| Indirect impacts:                                                                                     | None                                                                                                                                                                                                                                                                                                                                                  |
| Cumulative impact prior to mitigation:                                                                | None                                                                                                                                                                                                                                                                                                                                                  |
| Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High) | Minor Negative                                                                                                                                                                                                                                                                                                                                        |
| Degree to which the impact can be avoided:                                                            | None                                                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be managed:                                                            | EMMP                                                                                                                                                                                                                                                                                                                                                  |
| Degree to which the impact can be mitigated:                                                          | Minor (-60) to Minor (-42)                                                                                                                                                                                                                                                                                                                            |
| Proposed mitigation:                                                                                  | *Record plants successfully replanted & plants that died before replanting.* Target areas prone to erosion.* Include results in ECO reporting.* Undertake every 4 months, or when the road reserve maintenance occurs according to an approved clearing plan.* Monitor the route to ensure sufficient vegetation cover with indigenous plant species. |
| Residual impacts:                                                                                     | Minor Negative                                                                                                                                                                                                                                                                                                                                        |
| Cumulative impact post mitigation:                                                                    | None                                                                                                                                                                                                                                                                                                                                                  |
| Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)    | Minor Negative                                                                                                                                                                                                                                                                                                                                        |

## SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                     |
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| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development. |
| <p><u>Botanical/Biodiversity Findings</u></p> <ul style="list-style-type: none"> <li>Vegetation type in study area <ul style="list-style-type: none"> <li>Mostly Southeastern Strandveld (LC)</li> <li>Small sections cross Hartenbos Dune Thicket (EN)</li> <li>Historical mapping shows more extensive endangered vegetation, but much of the area is now transformed by urban development.</li> </ul> </li> <li>CBA's <ul style="list-style-type: none"> <li>The WCBSP (2023) excludes most of the urban area, but sections of the sewer alignment intersect CBA1 areas (notably near the railway line and the eastern alignment). These remnants require careful management.</li> </ul> </li> <li>SCC's <ul style="list-style-type: none"> <li>Presence confirmed on site <ul style="list-style-type: none"> <li><i>Hermannia lavandulifolia</i> (V)</li> <li><i>Cullumia carlinoides</i> (NT)</li> <li><i>Sensitive Species 1</i></li> </ul> </li> <li>Protected trees <ul style="list-style-type: none"> <li><i>Sideroxylon inerme</i> (Milkwood)</li> <li><i>Pittosporum viridiflorum</i> (Cheesewood)</li> </ul> </li> <li>Screening Tool flagged additional SCC, but only the above were confirmed on site.</li> </ul> </li> <li>Site Sensitivity <ul style="list-style-type: none"> <li>Terrestrial Biodiversity: Low sensitivity overall (mostly disturbed road reserves).</li> <li>Botanical/Plant Species: High sensitivity in localised patches (railway corridor, remnant thicket)</li> </ul> </li> <li>Impact Assessment <ul style="list-style-type: none"> <li>No-Go Option (not supported – current conservancy tanks leaking, causing pollution)</li> <li>Impact Assessment Outcome <ul style="list-style-type: none"> <li>Sewage Layout &amp; Option 01: Minor Negative Residual Impact</li> <li>Sewage Layout &amp; Option 02: Minor Negative Residual Impact</li> <li>Sewage Layout &amp; Option 03: Moderate Negative Residual Impact</li> </ul> </li> </ul> </li> <li>Concluding Statement <ul style="list-style-type: none"> <li>Sewage Layout &amp; Option 01 and Option 02 are Preferred.</li> <li>Sewage Layout &amp; Option 03 is Not-Preferred</li> <li>With mitigation, residual impacts are reduced to acceptable levels (Options 01 &amp; 02).</li> </ul> </li> </ul> <p><u>Aquatic Impact Assessment Findings</u></p> <ul style="list-style-type: none"> <li>Site Sensitivity <ul style="list-style-type: none"> <li>Confirmed as Very High Aquatic Biodiversity Sensitivity</li> <li>Alignment overlaps with: <ul style="list-style-type: none"> <li>Aquatic CBA1</li> <li>Great Brak Estuary's Estuarine Functional Zone</li> <li>Two (2) mapped wetlands</li> </ul> </li> </ul> </li> <li>Site Verification <ul style="list-style-type: none"> <li>Only one (1) crossing is a non-perennial stream</li> <li>Other crossings are flow paths, not wetlands</li> <li>The mapped watercourses could not be validated under the NWA definition</li> </ul> </li> <li>Impact Assessment</li> </ul> |                                                                                                                                                                                                     |

- Construction phase: erosion, sedimentation, disturbance of estuarine habitat
- Operational phase: risk of sewage leaks, blockages, pollution
- Impacts assessed as Minor to Negligible with mitigation
- National Water Act
  - DWS Risk Assessment: development falls outside regulated watercourses
  - No authorisation required under Section 21(c) or (i) of the NWA
  - Consistent with the Great Brak Estuarine Management Plan
- Concluding Statement
  - The project has a low aquatic risk
  - Impacts are management with mitigation
  - Project supports long-term estuarine management objectives by reducing sewage overflow risks.

### Fauna Findings

- Screening Tool Sensitivity
  - The DFFE Screening Tool flagged the project area as High sensitivity for terrestrial animal species.
  - Several Species of Conservation Concern (SCC) were highlighted, including:
    - *Bradypterus sylvaticus* (Knysna Warbler – Vulnerable)
    - *Hydroprogne caspia* (Caspian Tern – Vulnerable)
    - *Neotis denhami* (Denham's Bustard – Vulnerable)
    - *Circus ranivorus* (African Marsh Harrier – Endangered)
    - Sensitive Species 8 (Mammal – Vulnerable)
    - *Aloeides thyra orientis* (Eastern Red Russet Butterfly – Endangered)
    - *Aneuryphymus montanus* (Yellow-winged Agile Grasshopper – Vulnerable)
- Habitat
  - Vegetation types: Hartenbos Dune Thicket (Endangered) in the east, Southeastern Strandveld (Least Concern) in the west.
  - Road reserves are mostly disturbed, but railway reserve sections contain dense bush and higher ecological value.
  - The temporary storage site (Erf 554) is maintained lawn, sloping steeply to the coast.
- Field observations
  - Avifauna: Common species observed include Greater Double-collared Sunbird, Streaky-headed Seedeater, European Starling, and Cape Bulbul.
  - Mammals: Ungulate droppings found, possibly linked to Sensitive Species 8.
  - Invertebrates: Cape Sugar Ants, butterflies (*Cacyreus fracta*, *Lampides boeticus*, *Zizeeria knysna*, *Dixeia charina charina*) recorded.
  - Amphibians & reptiles: No SCC confirmed, but suitable habitat exists.
  - Overall faunal diversity is moderate, with SCC presence considered possible but not confirmed during the October 2025 survey.
- Site Sensitivity Verification
  - Despite the screening tool's High sensitivity rating, field verification downgraded most of the route to Low sensitivity, given disturbance along Morrison Road.
- Concluding Statement
  - The sewer pipeline project poses low faunal risk overall.

### Heritage Findings

- Study area

- Already transformed and urbanised, dominated by residential development and service infrastructure (fibre, electrical, water, stormwater).
- Historical imagery shows progressive transformation from natural thicket (1939) to full urbanisation (2025).
- Sensitive vegetation patches exist in the broader vicinity but mostly outside the project footprint.
- Civil engineers confirmed existing underground services, further reducing new disturbance.
- Visual impact
  - Infrastructure is underground; pump stations are small and within existing footprints.
  - No transformation of the visual character of Morrison Road reserve expected.
- Archaeological resources
  - Area already disturbed by urban development and service networks.
  - Previous surveys (Nilssen 2007) found only low-density Stone Age scatters, with low archaeological sensitivity.
  - Heritage Western Cape confirmed no further action required under Section 38 of the NHRA.
  - Significant archaeological sites (e.g., Pinnacle Point) are located far outside the study area.
- Palaeontological sensitivity
  - SAHRIS palaeo-map flagged high sensitivity, but field verification found no palaeontological resources due to disturbed sandy soils.
  - Geological mapping (Strandveld Formation sands) indicates poor fossil potential.
  - Pipe-cracking method further reduces soil disturbance, lowering risk.
- Historic background
  - Area historically used for grazing and agriculture (18th–19th century farms).
  - Morrison Road forms part of early colonial land grants (Lot 1389, Eigendomsgrond).
  - No significant heritage features identified within the project footprint.
- Overall recommendation
  - The project area is already transformed and does not contain significant heritage, archaeological, or palaeontological resources.
  - Sewer infrastructure upgrades are necessary for sustainable wastewater management.
  - No heritage-related objections; project can proceed with standard environmental safeguards.

2. List the impact management measures that were identified by all Specialist that will be included in the EMPr

Summary of impact management measures identified by the specialist and included in the EMMPr:

- Strict demarcation of construction areas to avoid unnecessary clearing.
- Translocation/rescue of SCC and protected trees (Milkwood, Cheesewood) before excavation.
- Ongoing clearing of Rooikrans, Eucalyptus, Castor bean, etc.
- Replanting rescued flora, landscaping with indigenous species, and restoring disturbed areas.
- Stabilisation of soils, especially dune slopes near railway thicket.
- Ongoing monitoring to reduce invasive spread along pipeline edges.
- Use of silt fencing, haybale check dams, and stabilisation in sandy soils.
- Demarcation of sensitive estuarine/floodplain areas to prevent disturbance.
- Watertight manholes and elevated air valves in flood-prone EFZ areas.
- Frequent inspections, rapid spill response protocols for sewage leaks.
- Limiting disturbance to mapped 7m envelope.
- Avoid clearing dense thicket and coastal habitats unnecessarily.
- Capture and move small mammals, reptiles, and amphibians where possible.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• Ongoing monitoring for SCC presence during construction.</li> <li>• Limiting construction noise and activity near sensitive habitats.</li> <li>• Fossil Find Protocol to be included in the EMMPr.</li> </ul>       |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | List the specialist investigations and the impact management measures that will <b>not</b> be implemented and provide an explanation as to why these measures will not be implemented.                                                                       |
| All the impact management measures that were identified by all specialists are included in the EMPr (Section I # 1).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                              |
| 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Explain how the proposed development will impact the surrounding communities.                                                                                                                                                                                |
| <p>Positive</p> <ul style="list-style-type: none"> <li>• Improved Sanitation <ul style="list-style-type: none"> <li>◦ Upgrading conservancy tanks into pump stations and installing bulk sewer pipelines will eliminate frequent overflows and leaks.</li> <li>◦ This reduces health risks from untreated sewage, odours and groundwater contamination.</li> </ul> </li> <li>• Socio-Economic <ul style="list-style-type: none"> <li>◦ Reliable sewer infrastructure supports further residential growth and tourism development.</li> <li>◦ Construction activities create short-term local employment opportunities.</li> <li>◦ Long-term property values may increase due to improved services.</li> </ul> </li> </ul> <p>Negative</p> <ul style="list-style-type: none"> <li>• Construction Disturbance <ul style="list-style-type: none"> <li>◦ Temporary noise, dust along Morrison Road and adjacent erven.</li> <li>◦ Possible inconvenience for residents and businesses during trenching and pipe-jacking.</li> <li>◦ Management actions to reduce impacts are included in the EMMPr.</li> </ul> </li> </ul> |                                                                                                                                                                                                                                                              |
| 5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                              |
| 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.                                                                                                                |
| There are no conflicting recommendations between the specialists.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                              |
| 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development. |
| All findings and recommendations by the specialists have been incorporated into the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                              |
| 8.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.                                                                                                                                                |
| <p><u>1. Avoid Impacts</u></p> <p>Several meetings were held between the engineering and environmental team to discuss potentially sensitive areas of the pipeline route and how these could best be navigated to avoid and minimise impacts.</p> <p><u>2. Minimise Impacts</u></p> <p>By involving an aquatic and botanical &amp; biodiversity specialist to advise on planning and design at an early stage.</p> <p>Appoint an ECO to oversee construction to further minimise the potential unnecessarily direct or indirect impacts.</p> <p>Implement noise control during construction to minimise the impacts on neighbouring property owners.</p> <p>Implement the Environmental Management Plan under ECO supervision.</p>                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                              |

### 3. Rectify

Ongoing removal of alien vegetation during the construction and operational phase.

### 4. Reduce

By implementing the mitigation measures provided by the specialist, all potential impacts will either be avoided or reduced.

### 5. Off-set

No biodiversity off sets are deemed necessary.

## SECTION J: GENERAL

### 1. Environmental Impact Statement

#### 1.1. Provide a summary of the key findings of the EIA.

The combined specialist assessments show that the proposed sewer infrastructure will have limited ecological and heritage impacts while delivering community benefits. From a botanical perspective, the study area is dominated by Southeastern Strandveld (Least Concern), with small sections of Hartenbos Dune Thicket (Endangered) intersected by the alignment. Although historical mapping showed more extensive endangered vegetation, much of the area is now urbanised. Some Critical Biodiversity Area (CBA1) remnants remain near the railway line and eastern alignment, requiring careful management. Species of Conservation Concern confirmed on site include *Hermannia lavandulifolia* (Vulnerable), *Cullumia carlinoides* (Near Threatened), and one sensitive species, along with protected trees such as Milkwood and Cheesewood. Overall terrestrial biodiversity sensitivity is low. Impact assessments found that the Sewer Layout & Options 1 and 2 (pipe cracking and trenching) would result in minor residual impacts, while the Sewer Layout & Option 3 (railway thicket alignment) would cause moderate impacts and is not preferred. With mitigation, impacts are reduced to acceptable levels.

Aquatic site sensitivity verification confirms the high sensitivity rating due to a section of pipeline which crosses the EFZ. Construction impacts include erosion, sedimentation, and estuarine disturbance, while operational impacts involve sewage leaks or blockages. These were assessed as minor to negligible with mitigation, and the aquatic specialist confirmed that the project falls outside regulated watercourses, requiring no authorisation under Section 21(c) or (i). The project aligns with the Great Brak Estuarine Management Plan, supporting long-term water quality improvements.

Faunal assessment flagged high sensitivity for terrestrial animal species, with SCC such as Knysna Warbler, Caspian Tern, Denham's Bustard, African Marsh Harrier, Sensitive Species 8 (mammal), Eastern Red Russet Butterfly, and Yellow-winged Agile Grasshopper potentially present. Field surveys recorded common birds, ungulate droppings, ants, and butterflies, but no SCC were confirmed during the October 2025 survey. Most of the route was downgraded to low sensitivity due to disturbance along Morrison Road reserve. Overall, faunal risk is considered low.

Heritage findings concluded that the study area is already transformed and urbanised, with no significant heritage, archaeological, or palaeontological resources. Previous surveys found only low-density Stone Age scatters, and palaeontological sensitivity was downgraded due to disturbed sandy soils with poor fossil potential. Infrastructure will be underground, with minimal visual impact, and Heritage Western Cape confirmed that no further action is required under Section 38 of the NHRA.

In summary, the project is feasible and necessary to replace inadequate conservancy tanks, reduce pollution, and provide reliable sewer services. With mitigation measures (such as strict footprint control, SCC rescue and relocation, erosion and sediment management, pollution prevention protocols, alien clearing, and monitoring) the residual impacts across biodiversity, aquatic systems, fauna, and

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| heritage are reduced to acceptable levels, ensuring both environmental protection and community benefit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                               |
| 1.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2) |
| Please refer to Appendix B2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                               |
| 1.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.                                                                                                       |
| <p>On the positive side, the project will replace inadequate conservancy tanks, reducing sewage overflows, odours, and pollution risks that currently affect residents. This will improve public health, water quality, and environmental conditions, supporting tourism, property values, and long-term sustainability. By using trenchless methods such as pipe cracking and pipe jacking, the project will minimise soil disturbance and protect sensitive habitats. It also aligns with the Great Brak Estuarine Management Plan, contributing to better ecological resilience and infrastructure reliability. Communities will benefit from more reliable sanitation services, reduced costs of tank emptying, and fewer risks of contamination, while construction may provide short-term employment opportunities.</p> <p>On the negative side, construction activities will cause temporary disturbance through noise, dust, traffic disruptions, and inconvenience to residents. Environmentally, there are risks of vegetation loss, disturbance to habitats, erosion, sedimentation, and the spread of invasive species, particularly in sensitive patches such as the railway thicket and coastal areas. Some Species of Conservation Concern and protected trees are present, requiring careful rescue and relocation. Operational risks include potential sewage leaks or blockages, which could affect natural habitats and community health if not properly managed. Heritage risks are minimal, as the area is already transformed, but chance finds protocols must be followed for archaeology or palaeontology.</p> <p>Overall, the preferred pipeline options (1 and 2) result in only minor residual impacts, while Option 3 (railway thicket alignment) is not recommended due to moderate biodiversity risks. With mitigation measures (such as strict footprint control, SCC rescue, erosion and sediment management, alien clearing, pollution prevention, and monitoring) the residual impacts are reduced to acceptable levels.</p> <p>In conclusion, the project delivers significant community and environmental benefits by improving sanitation and reducing pollution, while its risks are manageable through the Environmental Management &amp; Maintenance Programme (EMMP).</p> |                                                                                                                                                                                                                                                                               |

## 2. Recommendation of the Environmental Assessment Practitioner ("EAP")

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr |
| <p><u>Impact Management Outcomes included in the EMMP.</u></p> <ul style="list-style-type: none"> <li>• Minimise negative impacts of stormwater, sedimentation and erosion.</li> <li>• Ensure no health risk due to emission of dust to the environment.</li> <li>• Ensure nuisance from noise and vibration does not occur.</li> <li>• Manage and minimise the nuisance effect created by construction traffic.</li> <li>• Minimise waste discharged to the environment.</li> <li>• Manage stockpile materials so that dust and sediment in run-off are minimised.</li> <li>• Ensure that fuel and chemical storage is safe, and that any materials that escape do not cause environmental damage.</li> <li>• Minimise soil lost during construction due to land-clearing.</li> <li>• Ensure that degradation to existing botanical/biodiversity components are minimised and that any rehabilitation is undertaken with conservation orientated approach.</li> <li>• Ensure that impacts to fauna species is minimised and / or avoided.</li> </ul> |                                                                                                                                                                              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Ensure equitable, fair and safe interaction on construction sites.</li> <li>• Ensure efficient communication mechanisms in the implementation of environmental performance requirements.</li> </ul> |
| 2.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.                                                       |
| Refer to section 2.1, 2.3 & 2.4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                              |
| 2.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation.           |
| <p>Based on the combined botanical, aquatic, faunal, and heritage specialist assessments, the proposed sewer infrastructure development should be authorised, as the long-term benefits to community health, environmental quality, and infrastructure reliability outweigh the manageable risks. The project will replace inadequate conservancy tanks that currently leak and overflow, causing pollution and health hazards. It will improve sanitation services, reduce contamination of the Great Brak Estuary, and align with the Great Brak Estuarine Management Plan. Most of the alignment is within already transformed urban areas, and trenchless methods (pipe cracking, pipe jacking) will minimise disturbance. While sensitive vegetation patches and aquatic features exist, impacts are assessed as minor to negligible with mitigation. Heritage and palaeontological sensitivity are low, with no significant resources at risk.</p> <p>Conditions to include in the authorisation should ensure that mitigation measures are legally binding and enforceable:</p> <ul style="list-style-type: none"> <li>• ECO Monitoring</li> <li>• Search-and-Rescue Exercise</li> </ul> |                                                                                                                                                                                                                                              |
| 2.4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                              |
| 2.5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised.                                                                                 |
| Five (5) year period to <u>commence</u> with the activity from date of issue of the EA and a <u>further five (5)</u> years to <u>complete</u> the activity from date of commencement. Ten (10) year period inclusive of rehabilitation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                              |

### 3. Water

|                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water. |
| Not applicable.                                                                                                                                                                                                                                                                              |

### 4. Waste

|                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------|
| Explain what measures have been taken to reduce, reuse or recycle waste.                                              |
| Waste must be collected and disposed of at a registered waste facility.<br>No waste material may be left on the site. |

### 5. Energy Efficiency

|                 |                                                                                                                |
|-----------------|----------------------------------------------------------------------------------------------------------------|
| 8.1.            | Explain what design measures have been taken to ensure that the development proposal will be energy efficient. |
| Not applicable. |                                                                                                                |

## SECTION K: DECLARATIONS

### DECLARATION OF THE APPLICANT

**Note:** Duplicate this section where there is more than one Applicant.

I.....**S. NAIDOO**..... ID number .....**6210245252084**.....in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;
- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
  - Legitimate costs in respect of specialist(s) reviews; and
  - the provision of security to ensure compliance with applicable management and mitigation measures;
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

**Note:** If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.



Signature of the Applicant:

**12 June 2026**

Date:

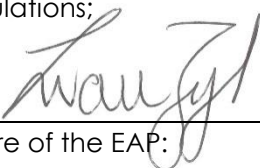
**Mossel Bay Municipality**

Name of company (if applicable):

## DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I .....Louise-Mari van Zyl....., EAP Registration number .....2019/1444..... as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

  
Signature of the EAP:

18 June 2026

Date:

Cape Environmental Assessment Practitioners

Name of company (if applicable):

## DECLARATION OF THE CANDIDATE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I .....**Mariska Byleveld**....., EAP Registration number .....**2023/6593**..... as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

*Mariska Byleveld*

Signature of the EAP:

**18 June 2026**

Date:

**Cape Environmental Assessment Practitioners**

Name of company (if applicable):

## **DECLARATION OF THE REVIEW EAP**

I ....., EAP Registration number ..... as the appointed Review EAP hereby declare/affirm that:

- I have reviewed all the work produced by the EAP;
- I have reviewed the correctness of the information provided as part of this Report;
- I meet all of the general requirements of EAPs as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the specialist (if any), the review specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

---

Signature of the EAP:

Date:

---

Name of company (if applicable):

## DECLARATION OF THE SPECIALIST

**Note:** Duplicate this section where there is more than one specialist.

I **Bianke Fouche** ....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

Signature of the EAP Specialist:



12 June 2026

Date:

Confluent Environmental

Name of company (if applicable):

## DECLARATION OF THE SPECIALIST

**Note:** Duplicate this section where there is more than one specialist.

I Dr. J. Dabrowski....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

|                                                                                                                 |             |
|-----------------------------------------------------------------------------------------------------------------|-------------|
| Signature of the Specialist:  | 2 June 2026 |
|                                                                                                                 |             |

Confluent Environmental (Pty) Ltd

Name of company (if applicable):

## DECLARATION OF THE SPECIALIST

**Note:** Duplicate this section where there is more than one specialist.

I Kim Daniels, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the EAP Specialist:

12 June 2026

Date:

Confluent Environmental

Name of company (if applicable):

## **DECLARATION OF THE REVIEW SPECIALIST**

I ....., as the appointed Review Specialist hereby declare/affirm that:

- I have reviewed all the work produced by the Specialist(s);
- I have reviewed the correctness of the specialist information provided as part of this Report;
- I meet all of the general requirements of specialists as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the review EAP (if applicable), the Specialist(s), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

---

Signature of the EAP: \_\_\_\_\_ Date: \_\_\_\_\_

---

Name of company (if applicable): \_\_\_\_\_