

**PRE-APPLICATION BASIC ASSESSMENT REPORT
IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107
OF 1998) AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS
AMENDED)**

October 2017

PROJECT TITLE

PROPOSED ERICA DRIVE EXPANSION, BELHAR

| REPORT TYPE CATEGORY | REPORT REFERENCE NUMBER | DATE OF REPORT |
|--|--------------------------------|-----------------------|
| Pre-Application Basic Assessment Report (if applicable) ¹ | 16/3/3/6/7/1/A8/13/3302/17 | 5 March 2018 |
| Draft Basic Assessment Report ² | - | |
| Final Basic Assessment Report ³ or, if applicable Revised Basic Assessment Report ⁴ (strikethrough what is not applicable) | - | |

Notes:

- In terms of Regulation 40(3) potential or registered interested and affected parties, including the Competent Authority, may be provided with an opportunity to comment on the Basic Assessment Report prior to submission of the application but must again be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority. The Basic Assessment Report released for comment prior to submission of the application is referred to as the "Pre-Application Basic Assessment Report". The Basic Assessment Report made available for comment after submission of the application is referred to as the "Draft Basic Assessment Report". The Basic Assessment Report together with all the comments received on the report which is submitted to the Competent Authority for decision-making is referred to as the "Final Basic Assessment Report".
- In terms of Regulation 19(1)(b) if significant changes have been made or significant new information has been added to the Draft Basic Assessment Report, which changes or information was not contained in the Draft Basic Assessment Report consulted on during the initial public participation process, then a Final Basic Assessment Report will not be submitted, but rather a "Revised Basic Assessment Report", which must be subjected to another public participation process of at least 30 days, must be submitted to the Competent Authority together with all the comments received.

DEPARTMENTAL REFERENCE NUMBER(S)

| | |
|--------------------------------------|----------------------------|
| Pre-application reference number: | 16/3/3/6/7/1/A8/13/3302/17 |
| File reference number (EIA): | |
| NEAS reference number (EIA): | |
| File reference number (Waste): | |
| NEAS reference number (Waste): | |
| File reference number (Air Quality): | |
| NEAS reference number (Air Quality): | |
| File reference number (Other): | |
| NEAS reference number (Other): | |

CONTENT AND GENERAL REQUIREMENTS

Note that:

1. The content of the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended), any subsequent Circulars, and guidelines must be taken into account when completing this Basic Assessment Report Form.
2. This Basic Assessment Report is the standard report format which, in terms of Regulation 16(3) of the EIA Regulations, 2014 (as amended) must be used in all instances when preparing a Basic Assessment Report for Basic Assessment applications for an environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the EIA Regulations, 2014 (as amended) and/or a waste management licence in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("NEM:WA"), and/or an atmospheric emission licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA") when the Western Cape Government: Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority/Licensing Authority.
3. This report form is current as of October 2017. It is the responsibility of the Applicant/ Environmental Assessment Practitioner ("EAP") to ascertain whether subsequent versions of the report form have been released by the Department. Visit the Department's website at <http://www.westerncape.gov.za/eadp> to check for the latest version of this checklist.
4. The required information must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The tables may be expanded where necessary.
5. The use of "not applicable" in the report must be done with circumspection. All applicable sections of this report form must be completed. Where "not applicable" is used, this may result in the refusal of the application.
6. While the different sections of the report form only provide space for provision of information related to one alternative, if more than one feasible and reasonable alternative is considered, the relevant section must be copied and completed for each alternative.
7. Unless protected by law, all information contained in, and attached to this report, will become public information on receipt by the competent authority. If information is not submitted with this report due to such information being protected by law, the applicant and/or EAP must declare such non-disclosure and provide the reasons for believing that the information is protected.
8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this report 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.
9. This Report must be submitted to the Department and the contact details for doing so are provided below.
10. Where this Department is also identified as the Licencing Authority to decide applications under NEM:WA or 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: 021-483-2756 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 2798 and fax: 021 483 3254) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

| CAPE TOWN OFFICE | | GEORGE REGIONAL OFFICE |
|---|---|---|
| REGION 1 (City of Cape Town & West Coast District) | REGION 2 (Cape Winelands District & Overberg District) | REGION 3 (Central Karoo District & Eden District) |
| Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000 Registry Office 1 st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 1) at: Tel.: (021) 483-5829 Fax: (021) 483-4372 | Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 2) Private Bag X 9086 Cape Town, 8000 Registry Office 1 st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 2) at: Tel.: (021) 483-5842 Fax: (021) 483-3633 | Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4 th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel.: (044) 805-8600 Fax: (044) 805 8650 |

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ACRONYMS USED IN THIS BASIC ASSESSMENT REPORT AND APPENDICES:

| | |
|----------|---|
| BAR | Basic Assessment Report |
| CBA | Critical Biodiversity Area |
| DEA | National Department of Environmental Affairs |
| DEA&DP | Western Cape Government: Environmental Affairs and Development Planning |
| DWS | National Department of Water and Sanitation |
| EIA | Environmental Impact Assessment |
| EMPr | Environmental Management Programme |
| ESA | Ecological Support Area |
| HWC | Heritage Western Cape |
| I&APs | Interested and Affected Parties |
| NEMA | National Environmental Management Act, 1998 (Act No. 107 of 1998) |
| NEM:AQA | National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) |
| NEM:ICMA | National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) |
| NEM:WA | National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) |
| NHRA | National Heritage Resources Act, 1999 (Act No. 25 of 1999) |
| PPP | Public Participation Process |

DETAILS OF THE APPLICANT

| | | | |
|--|---|--------------|----------------|
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DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

| | | | |
|----------------------------------|--|--------------|----------------|
| Name of the EAP organisation: | Eco Impact Legal Consulting (Pty) Ltd | | |
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| EAP Qualifications: | <p>EAP for Eco Impact Legal Consulting since March 2009</p> <p>Johmandie Pienaar (Giliomee) holds a Baccalaureus Technologiae Degree (Cum Laude) in Nature Conservation from the Cape Peninsula University of Technology and has also completed the following short courses at the Centre for Environmental Management:</p> <ul style="list-style-type: none"> • Implementing Environmental Management Systems (ISO 14001) (2009); • Occupational Health and Safety Law for Managers (2010); • Implementing an OHS Management System based on OHSAS 18001 (2010) and; • Occupational Health and Safety Management System OHSAS 18001 Audit: A Lead Auditor Course Based on ISO 19011 and ISO 17021 (2011). <p>Short course presented by Executive Coaching & Facilitation:</p> <ul style="list-style-type: none"> • Conduct Outcome Based Assessments (May 2015). | | |

Please provide details of the lead EAP, including details on the expertise of the lead EAP responsible for the Basic Assessment process. Also attach his/her Curriculum Vitae to this BAR.

Refer to Appendix K1: EAP CV

EXECUTIVE SUMMARY OF THE PRE-APPLICATION BASIC ASSESSMENT REPORT:

Proposed Project and Site Description:

Project - The proposed Erica Drive / Belhar Main Road extension is approximately 3,24km in length. Erica Road will link to the R300 with an interchange which will give access to the north only. The first section of Erica Drive between Belhar Drive and New Nooiensfontein Road will be known as Erica Drive and the section between New Nooiensfontein Road and Highbury Road will be known as Belhar Main Road. The planned road is a dual carriageway with a median that varies in width between 2m and 5m. The planned cross-section comprises of two 3,4m lanes, a 2,4m surfaced shoulder and a 0,3m channel on both the shoulder side and the median side per direction of travel. This is a 9,8m kerb to kerb width per direction. On either side of the dual carriageway will be a 2m sidewalk. The 2,4m surfaced shoulders will be utilized as cycle ways (both sides of the road).

The dual carriageway will be constructed within a road reserve which varies between 32m and

40m. A section of the road reserve adjacent to Kuils River is 50m wide. On the western end of the proposed road it will tie into the existing Erica Drive at the Belhar Drive intersection. On the eastern end it will tie into the existing Highbury Road Intersection. The existing Highbury Road intersection and Belhar Main Road further to east are being designed by another consultant. The first section of the project between Belhar Drive and the R300 (western side) lies within an open field and are owned by council and zoned as road reserve. The section between the R300 road reserve and the Reuter Street intersection is an open field. As part of the neighbouring development most of the road reserve has been determined and zoned as road reserve. There is however areas which needs to be rezoned as road reserve (current zoning = agricultural). The existing Erica Drive / Belhar Road between the Reuter Street Intersection and Highbury Road crosses Kuils River and falls within an existing road reserve. Duo to site distance requirements splay sizes at intersections do require additional road reserve. The additional road reserve influences a number of residential stands as well as property of the Provincial Government of the Western Cape. The R300 off-ramp is 660m in length and will consist of a 4m lane and 2 x 2m pave shoulders which widens to 2 x 3,7m lanes at the Erica Drive Intersection (terminal). The R300 on-ramp is 890m in length and will consist of a single 4m lane and 2 x 2m paved shoulders. The larger part of the ramps falls within the existing R300 road reserve.

The new Erica Drive / Belhar Drive Intersection will be signalized. The Erica Drive / St Vincent Drive Intersection (T-junction) will have STOP-control on St Vincent Drive. Erica Drive will cross the R300 with a bridge passing over the R300. The R300 Bridge will be widened when Erica Drive becomes a dual carriageway Road. Both interchange terminals (T-junctions) will be signalized. The Erica Drive / Reuter Street Intersection will have STOP-control on Reuter Street. The Erica Drive / Isabel Street/Eland Street Intersection will have STOP-control on Isabel Street and Eland Street. The existing Kuils River Bridge will become the eastbound carriageway bridge and a new second bridge will be constructed for the future westbound carriageway. Minor alterations to the existing Kuils River Bridge will be required for better pedestrian and cycle accommodation. The Erica Drive / Nooiensfontein Road Intersection will be changed into a partial intersection (left-in / left-out) when Erica Drive becomes a dual carriageway road. The Erica Drive / Belhar Main Road / New Nooiensfontein Road Intersection will be changed into a double lane roundabout when Erica Drive / Belhar Main Road becomes a dual carriageway road. The existing school access in Belhar Main Road will be changed to a partial intersection (left-in / left-out) when Belhar Main Road becomes a dual carriageway road.

Significantly degraded indigenous vegetation remnants of Critically Endangered - Cape Flats Sand Fynbos and Endangered - Cape Flats Dune Strandveld remains within the proposed development area and surrounds. It is expected that the proposed development will lead to the clearance of less than 2ha of homogenous indigenous vegetation species and no species of conservation concern.

Several transformed wetlands and the Kuils River tributary also occurs on the site and surrounds which will be impacted upon by the proposed development. The project layout would result in infilling of portions of at least three wetlands as identified on site leading to the permanent encroachment into an total area of approximately 1.7ha of the larger identified wetlands (out of a total wetland area of approximately 5ha).

Construction phasing:

Construction of the road is planned in two phases. The **first phase** is to construct the westbound carriageway of Erica Drive (10,2m kerb to kerb road width) with 2m sidewalks on either side between Belhar Drive and Reuter Street which will include a bridge over the R300. This section of road is approximately 1,75km in length. The **first phase** will include the second carriageway between Reuter Street and New Nooiensfontein as well as a new double lane roundabout at the Erica Road / New Nooiensfontein Road intersection.

The **second phase** will be the construction of the eastbound carriageway between Belhar Drive and Reuter Street including the widening of the R300 Bridge / second bridge over the R300. The **second phase** will include the westbound carriageway of Belhar Main Road up to Highbury Road intersection on the eastern side.

Footprint:

The construction footprint for the full project is estimated to be 125 000 square metres (12.5Ha). The final development footprint is estimated to be 100 000 square metres (10.0Ha) for the full project.

Site - The development area west and immediately east of the R300 is undulating with sand dunes. These dunes have however been heavily disturbed and are more likely man-made to the most extent due to land excavations and stock piling that occurred while establishing the surrounding urban developments and landfill site. Most of the development area east of the R300 is flat with gradual slopes.

The site is located within dense urban residential areas. The area west of the R300 is also bordered by a landfill site. The channelled Kuils River tributary crosses the eastern half of the development site along Belhar Road and the R300 crosses the western half. As previously mentioned the site has been significantly disturbed and transformed due to urban development. Ongoing illegal waste dumping is taking place at various locations within the area west of the R300 adjacent to the landfill site. Several transformed wetlands also occur throughout the proposed development site. Refer to Botanical and Freshwater Ecosystems Impact Assessments as available under Appendix G for detailed site descriptions.

Summary of Specialist/s Conclusions and Recommendations:**Botanical Impact Assessment, November 2017, Eco Impact:****Concluding Remarks and Recommendations**

The vegetation and ecology within the study area has been heavily disturbed for a long time, and no significant patches of intact natural vegetation remain within the non-wetland areas. Terrestrial botanical diversity is generally very low compared to what it was prior to human disturbance.

Two vegetation types would originally have been present in the area, all of which are now regarded as threatened on a national basis (one Critically Endangered and one Endangered).

Of the Critically Endangered Cape Flats Sand Fynbos vegetation mainly none to very little indigenous vegetation remains, therefore these areas have been indicated as Low terrestrial botanical sensitivity, presenting no constraints to the proposed development. Loss of this area would be of negligible botanical significance at a regional scale.

The remaining proposed development area represents significantly disturbed secondary Endangered Cape Flats Dune Strandveld vegetation. Limited indigenous vegetation diversity remains within the areas marked as Medium terrestrial botanical sensitivity areas, with no plant Species of Conservation Concern. The loss of the Medium sensitivity vegetation in the study area is likely to be of Medium to Low negative significance at a regional scale, before and after mitigation.

No specific botanical mitigation is required for this project, other than demarcating and restricting the proposed development area throughout the construction phase and ongoing alien invasive vegetation management and removal in the disturbed areas around the development footprints.

It is expected that the proposed development will lead to the clearance of less than 2ha of homogenous indigenous vegetation species and no species of conservation concern.

Although development of the Medium terrestrial botanical sensitivity area has been rated as having a potential Medium negative significance at a regional scale if other factors such as ongoing human disturbances and urban development, alien plant encroachment, low ecological connectivity etc. are taken into consideration it is believed that the entire proposed development will have a Low negative significance on the terrestrial habitat of the site and surrounds. It is therefore concluded that the proposed development could therefore be authorised without causing significant negative terrestrial botanical impacts.

Summary of recommendations as listed in the report and additional general impact mitigation measures to be implemented:

Planning considerations and constraints-

- The construction and final development footprints should be demarcated and all proposed activities should be restricted to the proposed development area.

Construction, Operational and Rehabilitation phases -

- The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer, both during the construction, operational and decommission/rehabilitation phases.
- Undertake development activities only in identified and specifically demarcated areas as proposed.
- Demarcate no-go areas before any land clearing occurs under the supervision of an ECO. Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase.
- Personnel should be restricted to the construction camp site and immediate construction areas only.
- Remove and conserve topsoil layer and overburden material for rehabilitation after construction activities have ceased
- No construction related disturbance should be allowed within the remaining adjacent indigenous vegetation and wetland areas. This includes no dumping of fill, no roads, and all forms of temporary disturbance.
- Implement site specific erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the development footprint area and surrounds.
- Rehabilitate impacted indigenous vegetation areas outside of the development areas immediately if disturbed with indigenous vegetation species.
- Proper waste bins to be provided during construction and operation and all waste to be regularly (at least once a week) removed to municipal landfill site.
- If any fuel or hazardous materials is spilled on site it must be treated as according to EMP requirements.
- The cement mixing area must be at least 32m away from the edge of the wetlands and is only to take place within demarcated cement mixing area that is impermeable and has a berm so that no cement mix runoff water escapes from cement mixing area.
- The landowner/s must adhere to his/her legal obligations to actively eradicate and manage alien vegetation infestations present on the applicable and surrounding properties.
- Monitor soil erosion on a regular basis and rehabilitate impacted areas as soon as possible under supervision of appointed ECO.
- Storm water discharge flow must be managed and restricted in such a manner that it does not cause erosion.
- Only use topsoil as derived and conserved from the proposed development areas to be rehabilitated after development activities have ceased on the property.
- Only use vegetation indigenous to the area to rehabilitate impacted/decommissioned areas and implement ongoing monitoring of the rehabilitated areas until successful rehabilitation has taken place.
- After topsoil has been replaced ongoing monitoring and removal of alien vegetation regrowth must be conducted to ensure effective rehabilitation of indigenous vegetation.
- Decommissioned areas must be rehabilitated and planted with indigenous vegetation immediately after built structures have been removed.
- Engineered contour structures reinstated and maintained.
- Monitor rehabilitation of areas impacted outside of the proposed development areas or decommissioned areas on a 6 monthly basis until effective/successful rehabilitation has been obtained.
- If erosion is detected during or after rehabilitation implement erosion rectification and

preventions measures as guided by an ECO

Eco Impact is of the opinion, and based on the survey and desk study done, that the proposed development activities; if designed and implemented according to the recommendations as provided in this report, will not have an unacceptable significantly negative impact on the environmental aspects of the site and surrounds as assessed in this report.

Freshwater Ecological Impact Assessment, November 2017, Eco Impact:

POTENTIAL IMPACTS ON THE KUILS RIVER

The affected Kuils River area is significantly degraded/transformed and has been channelled. There is also an existing bridge structure located on and next to the proposed bridge/road development over the Kuils River tributary. The overall significance of the potential impacts on the Kuils River is therefore expected to be of low significance due to the existing transformed state of the affected areas.

Proposed Mitigation Measures during Construction, Operational and Decommissioning Phases:

- The construction disturbance zone must be limited to 10m up- and downstream of the end of the new road footprint and this edge must be demarcated on site.
- No work camps or construction phase stockpiling may be located within 50m of the channel of the River or such that construction associated material or waste will flow, blow or leach into the channel.
- Any activities involving cement must be tightly controlled to prevent its passage into the river – uncured cement will increase pH and thus potentially affect ammonia toxicity.
- All refuelling areas must be adequately bunded.

POTENTIAL IMPACTS ON THE WETLANDS

Expansion and dualling of Erica Drive would have the following definite, permanent and irreversible impacts on the identified aquatic ecosystems:

The project layout would result in the complete and portions infilling of Wetlands 1, 2, 3, 4, 7 and 8 as identified and account for permanent encroachment into a total wetland area of approximately 1.23ha of the larger identified wetlands (out of a total wetland area of approximately 4.12ha).

The affected portions of the wetlands would be permanently destroyed. The ecological significance of this loss is considered of **medium negative significance** – a rating that takes account of the existing level of degradation and fragmentation of the system, but also of the rapid rate of degradation of the identified wetlands.

The following impacts are likely to occur within the wetland depressions in the area:

- Degradation as a result of compaction, excavation, passage of vehicles over wetland areas.
- Dumping of construction waste (old tar, paving, rubble) in wetland area.
- Visual degradation associated with litter (e.g. cement bags, litter from workers).
- Permanent destruction of soil function as a result of spillage of oils, fuels other contaminants from refuelling areas.
- Permanent loss of existing wetland habitat due to proposed road developments.

Without mitigation, these measures would be permanent, and would be of medium negative significance, with a medium cumulative significance rating as well, given that they are additional impacts on wetland areas that have already been shrunken as a result of the proposed layout.

Proposed Mitigation Measures during Construction, Operational and Decommissioning Phases:

- Due to the location of the proposed activities being site specific direct mitigation/prevention of impacts is not possible. It is recommended however that on - or off-site wetland offset mitigation should be implemented, to create seasonally inundated wetland depression habitat of at least the area lost or greater, and of a similar or better quality. The existing wetlands have been completely cut off from all other aquatic ecosystems and are unlikely to play any significant

future role in terms of biodiversity conservation. It is therefore recommended that the existing degraded wetland areas that will not be impacted upon be rehabilitated as offset mitigation focus, with allowance made for at least area-for-area wetland replacement and that this be incorporated into the site specific stormwater management structures that must be designed for the proposed development. A wetland ecologist must have input into the final design, extent and landscaping of the recommended wetland offsets and associated stormwater management measures on site.

- The disturbance zone must be kept to a maximum of 10m beyond the edge of the new road – this must be fenced off/demarcated along the full wetland width, using wire fencing and shade cloth and access by personal and machinery beyond the demarcation may not take place, other than for purposes of daily litter collection which must take place on foot.
- Litter must be collected from the abutting wetlands on a daily basis and by foot. All litter must be stored in suitable containers and disposed of at a licensed landfill site on at least a weekly basis.
- No vehicles may be refuelled within 30m of the mapped wetland edges, and any refuelling areas must be appropriately bunded.
- Site camps and areas for the storage of construction equipment and / or waste may not be located within 30m of the edge of any demarcated wetland.
- Construction that requires infilling of a wetland must take place from the terrestrial edge, and not from the wetland edge, to minimise unnecessary damage;
- At the end of construction, allowance must be made for landscaping the area of disturbed wetland abutting the construction area plus a 10m setback area.

RECOMMENDATIONS AND CONCLUDING REMARKS

The Kuils River flows through the proposed Erica Drive dualling from north to south. The freshwater ecological features on the site have been totally modified and channelled. On the site, surrounding land use, the channelling of the river and the existing constructed bridge has resulted in all of the indigenous riparian vegetation being removed from the river and streams. In terms of the importance and sensitivity of the features, the numerous impacts have greatly reduced their species richness and diversity. In order to maintain what remains of the ecological functioning of the systems on the site, it is recommended that construction methodology be provided by the civil contractor to the freshwater ecologist and approval first be granted before construction commences to ensure that the construction activities are mitigated and to prevent any further degradation of the Kuils River. The construction activities must be monitored by an Environmental Control Officer. The pillars of the expanded bridge must be in line with the existing bridge pillars in order to not affect or impact on the existing hydrology or river flow.

Six of the identified wetlands on site will be impacted upon. The impacted wetlands have largely modified wetland integrity as a large loss of natural habitat, biota and basic ecosystem functions has occurred. The Wetland Health Present Ecological Status of the impacted wetlands was assessed to be largely modified and in a moderate ecological importance state and sensitivity.

It is clear that the route will definitely impact, on a permanent basis, on an extent of depression wetlands. The former impacts are not mitigatable, and this report has recommended offset mitigation to account for wetland loss. A no-development alternative is not considered a necessary or useful recommendation to avoid these impacts, taking into account the level of degradation and fragmentation of the affected wetlands, as well as the opportunity for offset mitigation to create a better quality of habitat than that lost.

Summary of Need and Desirability

The proposed activity has been included in the City of Cape Town's 2017 - 2018 Service Delivery Implementation Plan as manifested by the Integrated Development Plan 2017 - 2022. The proposed activity has been planned to alleviate traffic congestion of Erica Drive, through expansion of the road network. This is in line with the strategic objectives of the Municipality.

Summary of Alternatives Assessed during Draft Scoping Phase:

Location alternatives – The location of the proposed activity is site specific as it has to link with existing road infrastructure and the purpose of the proposed development is to alleviate traffic congestion on a specific road within a specific area therefore no other feasible or reasonable

location alternatives exists.

Activity alternatives- The proposed lengthening and expansion of existing road infrastructure within the Belhar – Kuilsrivier area is the only reasonable and feasible activity alternative assessed as it is what is needed to alleviate traffic congestion within a specific area.

Layout alternatives - Two layout alternatives have been assessed thus far:

Layout Alternative 1 – Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going underneath the R300.

*Reasons why Layout Alternative 1 is **not** preferred:*

- There are existing wetland areas to the east and west of the R300 road and if the proposed new road should be constructed crossing underneath the R300 this will potentially lead to the creation of a “dam” which will require significant stormwater infrastructure developments within the wetland areas.
- Construction underneath the R300 will also cause significant traffic congestion on the R300 during the construction phase.

Layout Alternative 2 - Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going over the R300.

*Reasons why Layout Alternative 1 is **preferred**:*

- There are existing wetland areas to the east and west of the R300 road and constructing the new road over the R300 will have the least significant negative impact on the surrounding wetland areas and associated stormwater management impacts.
- Construction over the R300 will also cause less significant traffic congestion on the R300 during the construction phase.

Technology alternatives – The most up to date technology alternatives will be incorporated into the approved layout and design of the proposed development during the time of development.

Operational alternatives – No operational alternatives were considered as the proposed activity is for the construction of a road to be maintained by the municipality after construction completion.

The No-Go Option- The No-Go option will result in the site remaining as it is - degraded vacant municipal land. The proposed activity will result in the expansion of the City's road network, thus alleviating congestion and making areas more accessible. The Municipality is mandated in terms of the PSDF to provide and maintain road infrastructure and networks. The activity is therefore in line with the objectives manifested in the PSDF and local Service Delivery Implementation Plan.

Summary of Impact Assessment during Pre-Application Basic Assessment Phase:

LAYOUT ALTERNATIVE 1

CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 1

- Disturbance to subsurface geological layers (high negative impact before mitigation and high negative impact with mitigation measures);
- Disturbance to the Kuils River riverbed and banks (low negative impact before mitigation and low negative impact with mitigation measures);
- Impact of construction work on river hydrology/flow (medium negative impact before mitigation and low negative impact with mitigation measures);
- Disturbance to wetland depressions and hydrology (high negative impact before mitigation and medium negative impact with mitigation measures);
- Soil erosion (high negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of construction activities on the water quality of surface and underground water resources (high negative impact before mitigation and low negative impact with mitigation measures);
- Increase in and accumulation of storm water runoff (high negative impact before mitigation and medium negative impact with mitigation measures);

- Impact of proposed development activities on identified aquatic wetland Critical Ecological Support Areas ("CESA") (high negative impact before mitigation and medium negative impact with mitigation measures);
- Impact on the Kuils River riparian habitat (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impact on the naturally occurring terrestrial and aquatic fauna and avifauna occurring on the site and surrounds (high negative impact before mitigation and medium negative impact with mitigation measures);
- Impact on the indigenous terrestrial flora present in the area (medium negative impact before mitigation and medium negative impact with mitigation measures);
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increased temporary construction job opportunities (medium positive impact)
- Traffic impacts due to construction on and along urban roads with high traffic volumes (high negative impact before mitigation and medium negative impact with mitigation measures)
- Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures)
- The potential impact of the proposed development on archaeological, palaeontological and heritage remains (low negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures)
- Impact of construction activities on the surrounding land users/owners and tourist's visual landscape of the area (low negative impact before mitigation and low negative impact with mitigation measures)

OPERATIONAL PHASE- LAYOUT ALTERNATIVE 1

- Increase in stormwater runoff and accumulation due to cleared and transformed/ developed vegetation and wetland areas (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact on hydrology/flow due to impedance (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of operational and maintenance activities of proposed development on remaining indigenous vegetation and wetland areas (medium negative impact before mitigation and low negative impact with mitigation measures);
- Expansion and upgrade of existing road infrastructure within the Belhar – Kuilsrivier area (high positive impact on traffic congestion within the area);
- Noise due to traffic along proposed roads (high negative impact before mitigation and medium negative impact with mitigation measures);
- Impact of development on the surrounding land users / owners and tourists visual landscape of the area (low negative impact before mitigation and low negative impact with mitigation measures);
- Impact on planning policies (low negative impact before mitigation and low negative impact with mitigation measures);

DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 1

- The decommissioning of the infrastructure developments are not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All

concrete introduced must be removed off site to a licensed waste facility.

LAYOUT ALTERNATIVE 2

CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 2

- Disturbance to subsurface geological layers (high negative impact before mitigation and high negative impact with mitigation measures);
- Disturbance to the Kuils River riverbed and banks (low negative impact before mitigation and low negative impact with mitigation measures);
- Impact of construction work on river hydrology/flow (medium negative impact before mitigation and low negative impact with mitigation measures);
- Disturbance to wetland depressions and hydrology (high negative impact before mitigation and medium negative impact with mitigation measures);
- Soil erosion (high negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of construction activities on the water quality of surface and underground water resources (high negative impact before mitigation and low negative impact with mitigation measures);
- Increase in and accumulation of storm water runoff (high negative impact before mitigation and medium negative impact with mitigation measures);
- Impact of proposed development activities on identified aquatic wetland Critical Ecological Support Areas ("CESA") (high negative impact before mitigation and medium negative impact with mitigation measures);
- Impact on the Kuils River riparian habitat (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impact on the naturally occurring terrestrial and aquatic fauna and avifauna occurring on the site and surrounds (high negative impact before mitigation and medium negative impact with mitigation measures);
- Impact on the indigenous terrestrial flora present in the area (medium negative impact before mitigation and medium negative impact with mitigation measures);
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increased temporary construction job opportunities (medium positive impact)
- Traffic impacts due to construction on and along urban roads with high traffic volumes (high negative impact before mitigation and medium negative impact with mitigation measures)
- Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures)
- The potential impact of the proposed development on archaeological, palaeontological and heritage remains (low negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures)
- Impact of construction activities on the surrounding land users/owners and tourist's visual landscape of the area (low negative impact before mitigation and low negative impact with mitigation measures)

OPERATIONAL PHASE- LAYOUT ALTERNATIVE 2

- Increase in stormwater runoff and accumulation due to cleared and transformed/ developed vegetation and wetland areas (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact on hydrology/flow due to impedance (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of operational and maintenance activities of proposed development on remaining indigenous vegetation and wetland areas (medium negative impact before mitigation and low negative impact with mitigation measures);
- Expansion and upgrade of existing road infrastructure within the Belhar – Kuilsrivier area (high positive impact on traffic congestion within the area);
- Noise due to traffic along proposed roads (high negative impact before mitigation and

- medium negative impact with mitigation measures);
- Impact of development on the surrounding land users / owners and tourists visual landscape of the area (low negative impact before mitigation and low negative impact with mitigation measures);
- Impact on planning policies (low negative impact before mitigation and low negative impact with mitigation measures);

DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 2

- The decommissioning of the infrastructure developments are not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility.

NO-GO/NO-DEVELOPMENT ALTERNATIVE

CONSTRUCTION PHASE- NO-GO/NO-DEVELOPMENT ALTERNATIVE

- Increased temporary construction job opportunities (medium negative impact as no temporary construction jobs will be created)

OPERATIONAL PHASE- NO-GO/NO-DEVELOPMENT ALTERNATIVE

- Expansion and upgrade of existing road infrastructure within the Belhar – Kuilsrivier area (high negative significance - ongoing successful services provision and traffic congestion alleviation cannot be ensured/promoted);

SECTION A: PROJECT INFORMATION

1. ACTIVITY LOCATION

| | |
|---|--|
| Location of all proposed sites: | Erica Drive (M71) runs through the centre of Belhar towards Kuils River Road (R300). Erica Drive is to be extended further east towards the R300, which will run adjacent to the southern boundary of the Bellville South Landfill Site. The road expansion will cross the R300 and connect to Belhar Road and end at the Highbury Rd cross section. |
| Development footprint size(s) in m ² : | The construction footprint for the full project is estimated to be 125 000 square metres (12.5Ha). The final development footprint is estimated to be 100 000 square metres (10.0Ha) for the full project. |

| Proposed Development Properties Details | | | | | |
|--|------------------------|---------------------------------------|---------------------------|----------------------------|--------------------|
| Property No | Landowner | Postal Address | Area m² | SG Code | Zoning |
| 27039 | Eskom Holdings SOC Ltd | P O Box 2100 Bellville 7535 | 19513.91 | C0160002000270390000000000 | Utility |
| 20880-RE | City of Cape Town | P O Box 60 Kuilsriver 7579 | 155240.5251 | C01600020002088000000000RE | TR2:Road reserve |
| 14791-RE | City of Cape Town | P O Box 60 Kuilsriver 7579 | 1204516.35 | C01600020001479100000000RE | Utility |
| 13106-RE | City of Cape Town | P O Box 25 Kraaifontein 7569 | 31986.73 | C01600730001310600000000RE | TR2:Road reserve |
| 13108-RE | City of Cape Town | P O Box 25 Kraaifontein 7569 | 84838.18 | C01600730001310800000000RE | Agricultural |
| 13109-RE | City of Cape Town | P O Box 25 Kraaifontein 7570 | 22678.74 | C01600730001310900000000RE | TR2:Road reserve |
| 25544 | City of Cape Town | P O Box 68 Kuilsriver 7579 | 19152.83 | C016007300025544000000000 | Community 1: Local |
| 25545 | City of Cape Town | P O Box 68 Kuilsriver 7580 | 9273.88 | C016007300025545000000000 | TR2:Road reserve |
| 12483-RE | City of Cape Town | | 28322.12 | C01600730001248300000000RE | TR2:Road reserve |
| 12484-RE | City of Cape Town | 62 Keerom Str Kleinvele Eerster River | 26340.6 | C01600730001248400000000RE | TR2:Road reserve |

| | | | | | |
|---------|---|--|----------|-----------------------------|-----------------------|
| 25546 | City of Cape Town | 62 Keerom Str Kleinvlei Eerster River | 54258.67 | C0160073000255460000000000 | Public Open Space |
| 12836 | Mrs S Chu | Postnet Suite 021 Private Bag X19 Kuilsriver | 668.15 | C0160073000128360000000000 | General Business |
| 12797 | Mnr JB Hess | 20 Magda Str Kalkfontein 7580 | 331.48 | C0160073000127970000000000 | Single Residential |
| 12796 | Mnr LA & Mrs U Christoffels | 22 Magda Str Kalkfontein 7580 | 175.85 | C0160073000127960000000000 | Single Residential |
| 12749 | Provincial Government of the Western Cape | 9 Dorp Str Cape Town 8000 | 14894.74 | C0160073000127490000000000 | Community 1: Local |
| 8179 | City of Cape Town | | 6743.91 | C0670013000081790000000000 | TR2:Road reserve |
| 7807-RE | City of Cape Town | | 1228.85 | C067001300007807000000000RE | TR2:Road reserve |
| 6266-RE | City of Cape Town | | 4036.3 | C067001300006266000000000RE | TR2:Road reserve |
| 6054 | City of Cape Town | | 2916.71 | C0670013000060540000000000 | TR2:Road reserve |
| 651 | Tanin Trading 89 Pty Ltd | 7 Windblom Rd BloubergStrand 7441 | 6126.86 | C0670013000006510000000000 | Single Residential |
| 25577 | City of Cape Town | | 9183.46 | C0670013000255770000000000 | TR2:Road reserve |
| 25576 | City of Cape Town | | 1269.04 | C0670013000255760000000000 | TR2:Road reserve |
| 9261_RE | City of Cape Town | Private Bag X9083 Cape Town 8000 | 38458.3 | C0670013000092650000000000 | TR2:Road reserve |

2. PROJECT DESCRIPTION

(a) Is the project a new development? If "NO", explain:

| | | |
|----|-----|----|
| | YES | NO |
| NA | | |

(b) Provide a detailed description of the scope of the proposed development (project).

The proposed Erica Drive / Belhar Main Road extension is approximately 3,24km in length. Erica Road will link to the R300 with an interchange which will give access to the north only. The first section of Erica Drive between Belhar Drive and New Nooiensfontein Road will be known as Erica Drive and the section between New Nooiensfontein Road and Highbury Road will be known as Belhar Main Road. The planned road is a dual carriageway with a median that varies in width between 2m and 5m. The planned cross-section comprises of two 3,4m lanes, a 2,4m surfaced shoulder and a 0,3m channel on both the shoulder side and the median side per direction of travel. This is a 9,8m kerb to kerb width per direction. On either side of the dual carriageway will be a 2m sidewalk. The 2,4m surfaced shoulders will be utilized as cycle ways (both sides of the road).

The dual carriageway will be constructed within a road reserve which varies between 32m and 40m. A section of the road reserve adjacent to Kuils River is 50m wide. On the western end of the proposed road it will tie into the existing Erica Drive at the Belhar Drive intersection. On the eastern end it will tie into the existing Highbury Road Intersection. The existing Highbury Road intersection and Belhar Main Road further to east are being designed by another consultant. The first section of the project between Belhar Drive and the R300 (western side) lies within an open field and are owned by council and zoned as road reserve. The section between the R300 road reserve and the Reuter Street intersection is an open field. As part of the neighbouring development most of the road reserve has been determined and zoned as road reserve. There is however areas which needs to be rezoned as road reserve (current zoning = agricultural). The existing Erica Drive / Belhar Road between the Reuter Street Intersection and Highbury Road crosses Kuils River and falls within an existing road reserve. Duo to site distance requirements splay sizes at intersections do require additional road reserve. The additional road reserve influences a number of residential stands as well as property of the Provincial Government of the Western Cape. The R300 off-ramp is 660m in length and will consist of a 4m lane and 2 x 2m pave shoulders which widens to 2 x 3,7m lanes at the Erica Drive Intersection (terminal). The R300 on-ramp is 890m in length and will consist of a single 4m lane and 2 x 2m paved shoulders. The larger part of the ramps falls within the existing R300 road reserve.

The new Erica Drive / Belhar Drive Intersection will be signalized. The Erica Drive / St Vincent Drive Intersection (T-junction) will have STOP-control on St Vincent Drive. Erica Drive will cross the R300 with a bridge passing over the R300. The R300 Bridge will be widened when Erica Drive becomes a dual carriageway Road. Both interchange terminals (T-junctions) will be signalized. The Erica Drive / Reuter Street Intersection will have STOP-control on Reuter Street. The Erica Drive / Isabel Street/Eland Street Intersection will have STOP-control on Isabel Street and Eland Street. The existing Kuils River Bridge will become the eastbound carriageway bridge and a new second bridge will be constructed for the future westbound carriageway. Minor alterations to the existing Kuils River Bridge will be required for better pedestrian and cycle accommodation. The Erica Drive / Nooiensfontein Road Intersection will be changed into a partial intersection (left-in / left-out) when Erica Drive becomes a dual carriageway road. The Erica Drive / Belhar Main Road / New Nooiensfontein Road Intersection will be changed into a double lane roundabout when Erica Drive / Belhar Main Road becomes a dual carriageway road. The existing school access in Belhar Main Road will be changed to a partial intersection (left-in / left-out) when Belhar Main Road becomes a dual carriageway road.

Significantly degraded indigenous vegetation remnants of Critically Endangered - Cape Flats Sand Fynbos and Endangered - Cape Flats Dune Strandveld remains within the proposed development area and surrounds. It is expected that the proposed development will lead to the clearance of less than 2ha of homogenous indigenous vegetation species and no species of conservation concern.

Several transformed wetlands and the Kuils River tributary also occurs on the site and surrounds which will be impacted upon by the proposed development. The project layout would result in infilling of portions of at least three wetlands as identified on site leading to the permanent encroachment into an total area of approximately 1.7ha of the larger identified wetlands (out of a total wetland area of approximately 5ha).

Construction phasing:

Construction of the road is planned in two phases. The **first phase** is to construct the westbound carriageway of Erica Drive (10,2m kerb to kerb road width) with 2m sidewalks on either side between Belhar Drive and Reuter Street which will include a bridge over the R300. This section of road is approximately 1,75km in length. The **first phase** will include the second carriageway between Reuter Street and New Nooiensfontein as well as a new double lane roundabout at the Erica Road / New Nooiensfontein Road intersection.

The **second phase** will be the construction of the eastbound carriageway between Belhar Drive and Reuter Street including the widening of the R300 Bridge / second bridge over the R300. The **second phase** will include the westbound carriageway of Belhar Main Road up to Highbury Road intersection on the eastern side.

Footprint:

The construction footprint for the full project is estimated to be 125 000 square metres (12.5Ha). The final development footprint is estimated to be 100 000 square metres (10.0Ha) for the full project.

Site - The development area west and immediately east of the R300 is undulating with sand dunes. These dunes have however been heavily disturbed and are more likely man-made to the most extent due to land excavations and stock piling that occurred while establishing the surrounding urban developments and landfill site. Most of the development area east of the R300 is flat with gradual slopes.

The site is located within dense urban residential areas. The area west of the R300 is also bordered by a landfill site. The channelled Kuils River tributary crosses the eastern half of the development site along Belhar Road and the R300 crosses the western half. As previously mentioned the site has been significantly disturbed and transformed due to urban development. Ongoing illegal waste dumping is taking place at various locations within the area west of the R300 adjacent to the landfill site. Several transformed wetlands also occur throughout the proposed development site. Refer to Botanical and Freshwater Ecosystems Impact Assessments as available under Appendix G for detailed site descriptions.

Please note: This description must relate to the listed and specified activities in paragraph (d) below.

(c) Please indicate the following periods that are recommended for inclusion in the environmental authorisation:

| | | |
|-------|---|--|
| (i) | the period within which commencement must occur, | Within 5 years of obtaining Environmental Authorisation |
| (ii) | the period for which the environmental authorisation should be granted and the date by which the activity must have been concluded, where the environmental authorisation does not include operational aspects; | Within 10 years of obtaining Environmental Authorisation |
| (iii) | the period that should be granted for the non-operational aspects of the environmental authorisation; and | Within 10 years of obtaining Environmental Authorisation |
| (iv) | the period that should be granted for the operational aspects of the environmental authorisation. | Ongoing maintenance of infrastructure and implementation of EMP until decommissioning. |

Please note: The Department must specify the abovementioned periods, where applicable, in an environmental authorisation. In terms of the period within which commencement must occur, the period must not exceed 10 years and must not be extended beyond such 10 year period, unless the process to amend the environmental authorisation contemplated in regulation 32 is followed.

(d) List all the listed activities triggered and being applied for.

Please note: The onus is on the applicant to ensure that all the applicable listed activities are applied for and assessed as part of the EIA process. Please refer to paragraph (b) above.

EIA Regulations Listing Notices 1 and 3 of 2014 (as amended):

| Listed Activity No(s): | Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 1 (GN No. R. 983) | Describe the portion of the development that relates to the applicable listed activity as per the project description. | Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational. |
|------------------------|--|--|--|
| 19 | 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 | Several transformed wetlands and the Kuils River tributary occurs on the site and surrounds which will be impacted upon by the proposed development. The project layout would result in infilling of portions of at least three wetlands as identified on site leading to the permanent encroachment into an total area of approximately 1.7ha of the larger identified wetlands (out of a total wetland area of approximately 5ha). | Development, expansion and operational/maintenance |
| Listed Activity No(s): | Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 3 (GN No. R. 985) | Describe the portion of the development that relates to the applicable listed activity as per the project description. | Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational. |
| 4 | The development of a road wider than 4 metres with a reserve less than 13,5 metres. i. Western Cape i. Areas zoned for use as public open space or | Erf 25546 is zoned as Public Open Space and will be impacted upon by the development of the proposed road infrastructure. | Development |

| | | | |
|----|---|--|---------------------------|
| | equivalent zoning; | | |
| 12 | <p>The clearance of an area of 300 square metres 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>Western Cape</p> <p>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004</p> | <p>Significantly degraded indigenous vegetation remnants of Critically Endangered - Cape Flats Sand Fynbos and Endangered - Cape Flats Dune Strandveld remains within the proposed development area and surrounds. It is expected that the proposed development will lead to the clearance of less than 2ha (but more than 300m²) of homogenous indigenous vegetation species and no species of conservation concern.</p> | Development and expansion |

Waste management activities in terms of the NEM: WA (GN No. 921):

| | | |
|-----------------------------------|--|---|
| Category A Listed Activity No(s): | Describe the relevant <u>Category A</u> waste management activity in writing as per GN No. 921 | Describe the portion of the development that relates to the applicable listed activity as per the project description |
| NA | | |

Note: If any waste management activities are applicable, the **Listed Waste Management Activities Additional Information Annexure** must be completed and attached to this Basic Assessment Report as **Appendix I**.

Atmospheric emission activities in terms of the NEM: AQA (GN No. 893):

| | | |
|------------------------|--|--|
| Listed Activity No(s): | Describe the relevant atmospheric emission activity in writing as per GN No. 893 | Describe the portion of the development that relates to the applicable listed activity as per the project description. |
| NA | | |

(e) Provide details of all components (including associated structures and infrastructure) of the proposed development and attach diagrams (e.g., architectural drawings or perspectives, engineering drawings, process flowcharts, etc.).

| | | |
|---|-----|----|
| Buildings Provide brief description below: | YES | NO |
| NA | | |
| Infrastructure (e.g., roads, power and water supply/ storage) Provide brief description below: | YES | NO |
| <p>The proposed Erica Drive / Belhar Main Road extension is approximately 3,24km in length. Erica Road will link to the R300 with an interchange which will give access to the north only. The first section of Erica Drive between Belhar Drive and New Nooiensfontein Road will be known as Erica Drive and the section between New Nooiensfontein Road and Highbury Road will be known as Belhar Main Road. The planned road is a dual carriageway with a median that varies in width between 2m and 5m. The planned cross-section comprises of two 3,4m lanes, a 2,4m surfaced shoulder and a 0,3m channel on both the shoulder side and the median side per direction of travel. This is a 9,8m kerb to kerb width per direction. On either side of the dual carriageway will be a 2m sidewalk. The 2,4m surfaced shoulders will be utilized as cycle ways (both sides of the road).</p> <p>The dual carriageway will be constructed within a road reserve which varies between 32m and 40m. A section of the road reserve adjacent to Kuils River is 50m wide. On the western end of the proposed road it will tie into the existing Erica Drive at the Belhar Drive intersection. On the eastern end it will tie into the existing Highbury Road Intersection. The existing Highbury Road intersection and Belhar Main Road further to east are being designed by another consultant. The first section of the</p> | | |

project between Belhar Drive and the R300 (western side) lies within an open field and are owned by council and zoned as road reserve. The section between the R300 road reserve and the Reuter Street intersection is an open field. As part of the neighbouring development most of the road reserve has been determined and zoned as road reserve. There is however areas which needs to be rezoned as road reserve (current zoning = agricultural). The existing Erica Drive / Belhar Road between the Reuter Street Intersection and Highbury Road crosses Kuils River and falls within an existing road reserve. Duo to site distance requirements splay sizes at intersections do require additional road reserve. The additional road reserve influences a number of residential stands as well as property of the Provincial Government of the Western Cape. The R300 off-ramp is 660m in length and will consist of a 4m lane and 2 x 2m pave shoulders which widens to 2 x 3,7m lanes at the Erica Drive Intersection (terminal). The R300 on-ramp is 890m in length and will consist of a single 4m lane and 2 x 2m paved shoulders. The larger part of the ramps falls within the existing R300 road reserve.

The new Erica Drive / Belhar Drive Intersection will be signalized. The Erica Drive / St Vincent Drive Intersection (T-junction) will have STOP-control on St Vincent Drive. Erica Drive will cross the R300 with a bridge passing over the R300. The R300 Bridge will be widened when Erica Drive becomes a dual carriageway Road. Both interchange terminals (T-junctions) will be signalized. The Erica Drive / Reuter Street Intersection will have STOP-control on Reuter Street. The Erica Drive / Isabel Street/Eland Street Intersection will have STOP-control on Isabel Street and Eland Street. The existing Kuils River Bridge will become the eastbound carriageway bridge and a new second bridge will be constructed for the future westbound carriageway. Minor alterations to the existing Kuils River Bridge will be required for better pedestrian and cycle accommodation. The Erica Drive / Nooiensfontein Road Intersection will be changed into a partial intersection (left-in / left-out) when Erica Drive becomes a dual carriageway road. The Erica Drive / Belhar Main Road / New Nooiensfontein Road Intersection will be changed into a double lane roundabout when Erica Drive / Belhar Main Road becomes a dual carriageway road. The existing school access in Belhar Main Road will be changed to a partial intersection (left-in / left-out) when Belhar Main Road becomes a dual carriageway road.

| | | |
|--|-----|----|
| Processing activities (e.g., manufacturing, storage, distribution) Provide brief description below: | YES | NO |
| NA | | |
| Storage facilities for raw materials and products (e.g., volume and substances to be stored) Provide brief description below: | YES | NO |
| NA | | |
| Storage and treatment facilities for effluent, wastewater or sewage: Provide brief description below: | YES | NO |
| NA | | |
| Storage and treatment of solid waste Provide brief description below: | YES | NO |
| NA | | |
| Facilities associated with the release of emissions or pollution. Provide brief description below: | YES | NO |
| NA | | |
| Other activities (e.g., water abstraction activities, crop planting activities) – Provide brief description below: | YES | NO |
| NA | | |

3. PHYSICAL SIZE OF THE PROPOSED DEVELOPMENT

| | | |
|--|--|----------------|
| (a) Property size(s): Indicate the size of all the properties (cadastral units) on which the development proposal is to be undertaken | Refer to Section A:1 Activity Location Table for sizes of proposed development properties | m ² |
| (b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken | NA | m ² |
| (c) Development footprint: Indicate the area that will be physically altered as a result of undertaking any development proposal (i.e., the physical size of the development together with all its associated structures and infrastructure) | Construction Footprint 12.5ha | ha |

| | | |
|--|--------------------------------------|----------------|
| (d) Size of the activity: Indicate the physical size (footprint) of the development proposal | Final Development Footprint 10 ha | ha |
| (e) For linear development proposals: Indicate the length (L) and width (W) of the development proposal | (L) 3.24km | km |
| | (W) 32-40m | m |
| (f) For storage facilities: Indicate the volume of the storage facility | NA | m ³ |
| (g) For sewage/effluent treatment facilities: Indicate the volume of the facility (Note: the maximum design capacity must be indicated) | NA | m ³ |

4. SITE ACCESS

| | | |
|--|-----|----|
| (a) Is there an existing access road? | YES | NO |
| (b) If no, what is the distance in (m) over which a new access road will be built? | m | |
| (c) Describe the type of access road planned: | | |
| NA | | |

Please note: The position of the proposed access road must be indicated on the site plan.

5. DESCRIPTION OF THE PROPERTY(IES) ON WHICH THE LISTED ACTIVITY(IES) ARE TO BE UNDERTAKEN AND THE LOCATION OF THE LISTED ACTIVITY(IES) ON THE PROPERTY

- 5.1 Provide a description of the property on which the listed activity(ies) is/are to be undertaken and the location of the listed activity(ies) on the property, as well as of all alternative properties and locations (duplicate section below as required).

Erica Drive (M71) runs through the centre of Belhar towards Kuils River Road (R300). Erica Drive is to be extended further east towards the R300, which will run adjacent to the southern boundary of the Bellville South Landfill Site. The road expansion will cross the R300 and connect to Belhar Road and end at the Highbury Rd cross section.

| Coordinates of all the proposed activities on the property or properties (sites): | Latitude (S): (deg.; min.; sec) | | | Longitude (E): (deg.; min.; sec.) | | |
|---|---------------------------------|-----|--------|-----------------------------------|-----|--------|
| | | 33° | 56' | 29.78" | 18° | 38' |
| | 33° | 56' | 27.8" | 18° | 39' | 07.86" |
| | 33° | 56' | 24.71" | 18° | 39' | 25.16" |
| | 33° | 56' | 25.84" | 18° | 39' | 40.80" |
| | 33° | 56' | 28.95" | 18° | 39' | 58.48" |
| | 33° | 56' | 30.92" | 18° | 40' | 12.42" |
| | 33° | 56' | 33.48" | 18° | 40' | 26.45" |
| | 33° | 56' | 33.8" | 18° | 40' | 36.51" |
| | 33° | 56' | 35.78" | 18° | 40' | 44.08" |
| | 33° | 56' | 39.20" | 18° | 40' | 49.82" |
| | 33° | 56' | 43.31" | 18° | 40' | 53.12" |

Note: For land where the property has not been defined, the coordinates of the area within which the development is proposed must be provided in an addendum to this report.

- 5.2 Provide a description of the area where the aquatic or ocean-based activity(ies) is/are to be undertaken and the location of the activity(ies) and alternative sites (if applicable).

NA

| Coordinates of the boundary /perimeter of all proposed aquatic or ocean-based activities (sites) (if applicable): | Latitude (S): (deg.; min.; sec) | | | Longitude (E): (deg.; min.; sec) | | |
|---|---------------------------------|---|---|----------------------------------|---|---|
| | | ° | ' | " | ° | ' |
| | ° | ' | " | ° | ' | " |
| | ° | ' | " | ° | ' | " |
| | ° | ' | " | ° | ' | " |

- 5.3 For a linear development proposal, please provide a description and coordinates of the corridor in which the proposed development will be undertaken (if applicable).

Refer to Appendix A: Locality Map for location of GPS co-ordinates as taken every 250m along the

proposed route –

| Point Nr: | Latitude (S): (deg.; min.; sec) | | | Longitude (E): (deg.; min.; sec) | | |
|-----------|---------------------------------|------|---------|----------------------------------|------|---------|
| | deg. | min. | sec | deg. | min. | sec |
| 1 | E 18° | 38' | 43.357" | S 33° | 56' | 30.470" |
| 2 | E 18° | 38' | 52.950" | S 33° | 56' | 29.092" |
| 3 | E 18° | 39' | 2.544" | S 33° | 56' | 27.715" |
| 4 | E 18° | 39' | 12.138" | S 33° | 56' | 26.337" |
| 5 | E 18° | 39' | 21.731" | S 33° | 56' | 24.959" |
| 6 | E 18° | 39' | 31.397" | S 33° | 56' | 24.382" |
| 7 | E 18° | 39' | 40.963" | S 33° | 56' | 25.879" |
| 8 | E 18° | 39' | 50.518" | S 33° | 56' | 27.433" |
| 9 | E 18° | 40' | 0.073" | S 33° | 56' | 28.986" |
| 10 | E 18° | 40' | 9.628" | S 33° | 56' | 30.539" |
| 11 | E 18° | 40' | 19.184" | S 33° | 56' | 32.091" |
| 12 | E 18° | 40' | 28.754" | S 33° | 56' | 33.574" |
| 13 | E 18° | 40' | 38.412" | S 33° | 56' | 34.76" |
| 14 | E 18° | 40' | 47.397" | S 33° | 56' | 37.438" |
| 15 | E 18° | 40' | 53.539" | S 33° | 56' | 43.658" |
| 16 | E 18° | 40' | 54.964" | S 33° | 56' | 45.499" |

| For linear activities: | Latitude (S): (deg.; min.; sec) | | | Longitude (E): (deg.; min.; sec) | | |
|----------------------------------|---------------------------------|---|---|----------------------------------|---|---|
| • Starting point of the activity | ° | ' | " | ° | ' | " |
| • Middle point of the activity | ° | ' | " | ° | ' | " |
| • End point of the activity | ° | ' | " | ° | ' | " |

Note: For linear development proposals longer than 1000m, please provide an addendum with co-ordinates taken every 250m along the route. All important waypoints must be indicated and the GIS shape file provided digitally.

5.4 Provide a location map (see below) as **Appendix A** to this report that shows the location of the proposed development and associated structures and infrastructure on the property; as well as a detailed site development plan / site map (see below) as **Appendix B** to this report; and if applicable, all alternative properties and locations. The GIS shape files (.shp) for maps / site development plans must be included in the electronic copy of the report submitted to the competent authority.

| | |
|---------------|---|
| Locality Map: | <p>The scale of the locality map must be at least 1:50 000. For linear 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. The map must indicate the following:</p> <ul style="list-style-type: none"> • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; • a linear scale; • the prevailing wind direction (during November to April and during May to October); and • GPS co-ordinates (to indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection). <p>For an 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>Coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94; WGS84 co-ordinate system.</p> |
|---------------|---|

| | |
|------------|--|
| 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"> • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on |
|------------|--|

| | |
|--|--|
| | <p>the site plan.</p> <ul style="list-style-type: none"> • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be indicated on the site plan. • The position of each element of the application as well as any other structures on the site must be indicated on the site plan. • 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 development <u>must</u> be indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): <ul style="list-style-type: none"> ○ Watercourses / Rivers / Wetlands - including the 32 meter set back line from the edge of the bank of a river/stream/wetland; ○ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable); ○ Ridges; ○ Cultural and historical features; ○ Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow <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> <p>The GIS shape file for the site development plan(s) must be submitted digitally.</p> |
|--|--|

6. SITE PHOTOGRAPHS

Colour photographs 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 as **Appendix C** to this report. 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.

SECTION B: DESCRIPTION OF THE RECEIVING ENVIRONMENT

Site/Area Description

For linear development proposals (pipelines, etc.) as well as development proposals that cover very large sites, it may be necessary to complete copies of this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area that is covered by each copy on the Site Plan.

1. GRADIENT OF THE SITE

Indicate the general gradient of the sites (highlight the appropriate box).

| | | | |
|------|-------------------|------------|------------------|
| Flat | Flatter than 1:10 | 1:10 – 1:4 | Steeper than 1:4 |
|------|-------------------|------------|------------------|

2. LOCATION IN LANDSCAPE

(a) Indicate the landform(s) that best describes the site (highlight the appropriate box(es)).

| | | | | | | | | |
|-----------|---------|----------------------------------|------------------|----------------|-------|--|------|-----------|
| Ridgeline | Plateau | Side-slope-of hill / mountain | Closed valley | Open valley | Plain | Undulating plain/low hills/inland dunes | Dune | Sea-front |
|-----------|---------|----------------------------------|------------------|----------------|-------|--|------|-----------|

(b) Provide a description of the location in the landscape.

The development area west and immediately east of the R300 is undulating with sand dunes. These dunes have however been heavily disturbed and are more likely man-made to the most extent due to land excavations and stock piling that occurred while establishing the surrounding urban developments and landfill site. Most of the development area east of the R300 is flat with gradual slopes. The highest elevation of the area west of the R300 is 64m and the lowest 54m, the highest elevation of the area east of the R300 is 54m (dune immediately west of R300) and lowest 40m (the

Kuils River tributary).

The site is located within dense urban residential areas. The area west of the R300 is also bordered by a landfill site. The channelled Kuils River tributary crosses the eastern half of the development site along Belhar Road and the R300 crosses the western half. As previously mentioned the site has been significantly disturbed and transformed due to urban development. Ongoing illegal waste dumping is taking place at various locations within the area west of the R300 adjacent to the landfill site. Several transformed and degraded wetlands also occur throughout the proposed development site.

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

(a) Is the site(s) located on or near any of the following (highlight the appropriate boxes)?

| | | | |
|---|-----|----|--------|
| Shallow water table (less than 1.5m deep) | YES | NO | UNSURE |
| Seasonally wet soils (often close to water bodies) | YES | NO | UNSURE |
| Unstable rocky slopes or steep slopes with loose soil | YES | NO | UNSURE |
| Dispersive soils (soils that dissolve in water) | YES | NO | UNSURE |
| Soils with high clay content | YES | NO | UNSURE |
| Any other unstable soil or geological feature | YES | NO | UNSURE |
| An area sensitive to erosion | YES | NO | UNSURE |
| An area adjacent to or above an aquifer. | YES | NO | UNSURE |
| An area within 100m of a source of surface water | YES | NO | UNSURE |
| An area within 500m of a wetland | YES | NO | UNSURE |
| An area within the 1:50 year flood zone | YES | NO | UNSURE |
| A water source subject to tidal influence | YES | NO | UNSURE |

(b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (Information in respect of the above will often be available at the planning sections of local authorities. The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

(c) Indicate the type of geological formation underlying the site.

| Granite | Shale | Sandstone | Quartzite | Dolomite | Dolerite | Other (describe) |
|---|-------|-----------|-----------|----------|----------|------------------|
| Provide a description. | | | | | | |
| <p>Soil: Grey regic sands and other soils.</p> <p>Geology: Mainly Quaternary calcareous coastal dune sand of the Witzand Formation covering Quaternary quartz sand of the Springfontein.</p> <p>The geology of the area is characterised by loose and gravelly grey sandy top soil highly erodible; and mottled, highly weathered subsoil with signs of wetness within lower lying depressions where wetlands occurs. The soils at Kuils River are underlain by the Kuils River-Helderberg Granite pluton (Theron <i>et al.</i>, 1992).</p> | | | | | | |

4. SURFACE WATER

(a) Indicate the surface water present on and or adjacent to the site and alternative sites (highlight the appropriate boxes)?

| | | | |
|---------------------|-----|----|--------|
| Perennial River | YES | NO | UNSURE |
| Non-Perennial River | YES | NO | UNSURE |
| Permanent Wetland | YES | NO | UNSURE |
| Seasonal Wetland | YES | NO | UNSURE |
| Artificial Wetland | YES | NO | UNSURE |
| Estuarine / Lagoon | YES | NO | UNSURE |

- (b) Provide a description.

The site is located within the G22E quaternary catchment. The primary aquatic features on the site are the Kuils River and a wetland west of the R300 road and two wetlands east of the R300 road.

The study area lies within the Kuils-Eerste River sub-catchment of the Berg Water Management Area and within the City of Cape Town boundaries in the Western Cape Province. The affected properties are located within the urban area of Kuils River, adjacent to Belhar and Oakdene. The Kuils River, which originates in the hills of the Durbanville area, flows in a southerly direction to the urban area of Kuils River where it is joined by the Bottelary River. This river system continues in a southerly direction until its confluence with the Eerste River. The upper to middle reaches of the Kuils River are completely canalised through the Kuils River urban area and are, in general, in a poor condition within the urbanised and industrial areas of the town. At the proposed Erica Drive crossing, the river is completely canalised with all indigenous riparian vegetation removed, and is deemed to be in a severely modified ecological state.

The wetlands vegetation consists largely of *Phragmites australis* reeds, *Zantedeschia aethiopica* and *Kikuyu Pennisetum clandestinum* grass west of the R300 road and *Typha capensis* east of the road. The overall state of the wetland was observed to be in a moderately to largely modified state with some evidence of illegal waste dumping.

5. THE SEAFRONT / SEA

- (a) Is the site(s) located within any of the following areas? (highlight the appropriate boxes).
If the site or alternative site is closer than 100m to such an area, please provide the approximate distance in (m).

| AREA | YES | NO | UNSURE | If "YES": Distance to nearest area (m) |
|---|-----|----|--------|--|
| An area within 100m of the high water mark of the sea | YES | NO | UNSURE | |
| An area within 100m of the high water mark of an estuary/lagoon | YES | NO | UNSURE | |
| An area within the littoral active zone | YES | NO | UNSURE | |
| An area in the coastal public property | YES | NO | UNSURE | |
| Major anthropogenic structures | YES | NO | UNSURE | |
| An area within a Coastal Protection Zone | YES | NO | UNSURE | |
| An area seaward of the coastal management line | YES | NO | UNSURE | |
| An area within the high risk zone (20 years) | YES | NO | UNSURE | |
| An area within the medium risk zone (50 years) | YES | NO | UNSURE | |
| An area within the low risk zone (100 years) | YES | NO | UNSURE | |
| An area below the 5m contour | YES | NO | UNSURE | |
| An area within 1km from the high water mark of the sea | YES | NO | UNSURE | |
| A rocky beach | YES | NO | UNSURE | |
| A sandy beach | YES | NO | UNSURE | |

- (b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

6. BIODIVERSITY

Note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed development. To assist with the identification of the biodiversity occurring on site and the ecosystem status, consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc ("cd") from the Biodiversity-GIS Unit, Tel.: (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) must be provided as an overlay map on the property/site plan as **Appendix D** to this report.

- (a) Highlight the applicable biodiversity planning categories of all areas on preferred and alternative sites and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category. Also describe the prevailing level of protection of the Critical Biodiversity Area ("CBA") and Ecological Support Area ("ESA") (how many hectares / what percentages are formally protected).

| Systematic Biodiversity Planning Category | CBA | ESA | Other Natural Area ("ONA") | No Natural Area Remaining ("NNR") |
|--|---|-----|----------------------------|-----------------------------------|
| If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan and the conservation management objectives | <p>The City of Cape Town ("CoCT") regularly updates and revises its Biodiversity Network as sites are lost and new information becomes available (Holmes et al 2008), and the latest map (dated 2017) indicates that no mapped terrestrial vegetation CBAs or ESAs occurs on the proposed development site. However approximately 5.7ha of the proposed development site is mapped as aquatic/wetland Critical Ecological Support Area.</p> <p>The natural to semi-natural wetland CESAs are essential in maintaining ecological functioning of ecosystems found on the site and surrounds. Management objective/s is to maintain current ecological functioning.</p> | | | |
| Describe the site's CBA/ESA quantitative values (hectares/percentage) in relation to the prevailing level of protection of CBA and ESA (how many hectares / what percentages are formally protected locally and in the province) | <p>The demarcation of the CESA wetlands as mapped for the specific site was not groundtruthed for the compilation of the City of Cape Town's Biodiversity Network (2017) report. A freshwater ecosystem specialist was appointed to conduct a freshwater ecological impact assessment and also delineate the actual remaining wetland areas on the proposed development site and concluded that a total wetland area of approximately 1.23ha in total will be filled during the proposed development.</p> | | | |

(b) Highlight and describe the habitat condition on site.

| Habitat Condition | Percentage of habitat condition class (adding up to 100%) and area of each in square metre (m ²) | | Description and additional comments and observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing/harvesting regimes, etc.) |
|---|--|----------------|--|
| Natural | 0% | m ² | |
| Near Natural (includes areas with low to moderate level of alien invasive plants) | 0% | m ² | |
| Degraded (includes areas heavily invaded by alien plants) | 80% | 10ha | <p>The study site has a long history (centuries) of disturbance, and consequently there is no remaining natural vegetation in good condition (with viable populations of threatened or localised plant species) remaining within the study area. All ecological processes on the site have been significantly impacted by soil disturbance (excavations, stock piling, site clearance etc.), inappropriate fire regimes, loss of pollinators and seed dispersers, alien-, weed- and garden plant invasion, habitat fragmentation due to urban development, canalisation of the Kuils River and artificial wetland creation due to above mentioned impacts as well as required storm water management measures implemented on the site and surrounds. The heavily disturbed remnant habitats also present a very difficult conservation challenge. Essentially the whole study site can be considered transformed habitat. The transformed terrestrial (i.e. non wetland) areas support less than 20% of their likely original plant communities.</p> |
| Transformed (includes cultivation, dams, urban, plantation, roads, etc.) | 20% | 2.5ha | |

(c) Complete the table to indicate:

- (i) the type of vegetation present on the site, including its ecosystem status; and
- (ii) whether an aquatic ecosystem is present on/or adjacent to the site.

| Terrestrial Ecosystems | Description of Ecosystem, Vegetation Type, Original Extent, Threshold (ha, %), Ecosystem Status | |
|--|---|---|
| <p>Ecosystem threat status as per the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)</p> | Critically | <p>The vegetation map of South Africa (Mucina and Rutherford 2012) indicates that the western half of the study area would have originally been covered with Cape Flats Dune Strandveld (Endangered) and the eastern half with Cape Flats Sand Fynbos (Critically Endangered).</p> |
| | Endangered | <p>Cape Flats Sand Fynbos occurs on lowland acid sands, and is one of the most threatened habitat types in the country and is listed as Critically Endangered on a national basis (DEA 2011), with less than 20% of its original total extent remaining, less than 1% conserved, and an unachievable conservation target of 30% (Rouget et al 2004).</p> <p>Cape Flats Dune Strandveld is generally found on alkaline sands of marine origin, and although fairly well conserved within the Table Mountain National Park (notably at Cape Point) it is rapidly disappearing from its former stronghold – the Cape Flats. The unit is listed as Endangered on a national basis (DEA 2011), with less than 58% of its original total extent remaining, about 5% conserved (mostly within the Table Mountain National Park), and a conservation target of 24% (Rouget et al 2004). It should be noted that the City of Cape Town regards the Cape Flats form of this vegetation type as Critically Endangered, and regards it as distinct from the (more intact) form on the west coast between Cape Town and Silwerstroomstrand (Holmes et al 2013).</p> <p>The study site however has a long history (centuries) of disturbance, and consequently there is no remaining natural vegetation in good condition (with viable populations of threatened or localised plant species) remaining within the study area. All ecological processes on the site have been significantly impacted by soil disturbance (excavations, stock piling, site clearance etc.), inappropriate fire regimes, loss of pollinators and seed dispersers, alien-, weed- and garden plant invasion, habitat fragmentation due to urban development, canalisation of the Kuils River and artificial wetland creation due to above mentioned impacts as well as required storm water management measures implemented on the site and surrounds. The heavily disturbed remnant habitats also present a very difficult conservation challenge. Essentially the whole study site can be considered transformed habitat. The transformed terrestrial (i.e. non wetland) areas support less than 20% of their likely original plant communities.</p> <p>The whole study site is significantly invaded by alien invasive, weed and garden plants, notably <i>Eucalyptus</i> sp., <i>Acacia saligna</i>, <i>Bromus grass</i> sp., <i>Ramnus</i> sp., <i>Echium plantagineum</i>, <i>Pennisetum clandestinum</i>, <i>Lupinus</i> sp, <i>Raphanus rapistrum</i>, <i>Brassica tournefortii</i>,</p> |

| | | |
|--|------------------|--|
| | | <p><i>Erodium moschatum</i> and <i>Conyza bonariensis</i>. The overall average alien, weed and garden plant cover within the development area is 70% to 100%. It appears that no attempt has been made by the landowner/s to eradicate any alien invasive or weed plant species nor has the area been burnt within the past couple of years.</p> <p>Overall indigenous non-wetland plant species diversity on site is fairly low, being about 20% of what would be expected in a pristine example of this habitat. The areas west of and immediately adjacent to the R300 are where most of the remaining indigenous vegetation species occur. This is a result of previous and ongoing disturbance of the site, and the fact that only about 30 - 40% of the whole study site has any indigenous vegetation remaining which include recorded species such as <i>Oxalis pes caprae</i> (geel suuring), <i>Cynodon dactylon</i> (fynkweek), <i>Carpobrotus edulis</i>, <i>Metalsia densa</i>, <i>Thamnocortus sp</i>, <i>Muraltia spinosa</i>, <i>Arctotheca calendula</i>, <i>Ehrharta villosa</i>, <i>Trachyandra divaricata</i>, <i>Searsia glauca</i>, <i>Rhus sp</i>, <i>Searsia laevigata</i>, <i>Pelargonium capitatum</i>, <i>Lyperia lychnidea</i>.</p> <p>No significant populations (or individual) plant or animal Species of Conservation Concern (SCC) were recorded nor are likely to occur on site, given the previous and ongoing disturbance and state of the habitat concerned.</p> <p>(Refer to Terrestrial Botanical Impact Assessment under Appendix G)</p> |
| | Vulnerable | NA |
| | Least Threatened | NA |

| Aquatic Ecosystems | | | | | | |
|---|----|--------|---------|----|-----------|----|
| Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands) | | | Estuary | | Coastline | |
| | | | YES | NO | YES | NO |
| YES | NO | UNSURE | YES | NO | YES | NO |

(d) Provide a description of the vegetation type and/or aquatic ecosystem present on the site, including any important biodiversity features/information identified on the site (e.g. threatened species and special habitats). Clearly describe the biodiversity targets and management objectives in this regard.

The vegetation and ecology within the study area has been heavily disturbed for a long time, and no significant patches of intact natural vegetation remain within the non-wetland areas. Terrestrial botanical diversity is generally very low compared to what it was prior to human disturbance.

Two vegetation types would originally have been present in the area, all of which are now regarded as threatened on a national basis (one Critically Endangered and one Endangered).

Of the Critically Endangered Cape Flats Sand Fynbos vegetation mainly none to very little indigenous vegetation remains, therefore these areas have been indicated as **Low terrestrial botanical sensitivity**, presenting no constraints to the proposed development. Loss of this area would be of **negligible botanical significance at a regional scale**.

The remaining proposed development area represents significantly disturbed secondary Endangered Cape Flats Dune Strandveld vegetation. Limited indigenous vegetation diversity remains within the areas marked as Medium terrestrial botanical sensitivity areas, with no plant Species of Conservation Concern. The loss of the **Medium sensitivity vegetation** in the study area is likely to be of **Medium to Low negative significance** at a regional scale, before and after mitigation.

It is expected that the proposed development will lead to the clearance of less than 2ha of homogenous indigenous vegetation species and no species of conservation concern.

Although development of the Medium terrestrial botanical sensitivity area has been rated as having a potential Medium negative significance at a regional scale if other factors such as ongoing human disturbances and urban development, alien plant encroachment, low ecological connectivity etc. are taken into consideration it is believed that the entire proposed development will have a Low negative significance on the terrestrial habitat of the site and surrounds. It is therefore concluded that the proposed development could therefore be authorised without causing significant negative terrestrial botanical impacts.

These areas also have a low to moderate rehabilitation potential. Rehabilitation will be intensive and would have to involve reintroduction of specimens, alien and weed clearance and maintenance and dune stabilisation with indigenous vegetation etc. and due to the location within the urban area, low ecological connectivity value and small size of the site this will not be a viable site for rehabilitation efforts.

This botanical assessment is informed by:

- The fact that the study area is not mapped as a terrestrial CBA or ESA in the City of Cape Town Biodiversity Network.
- The low indigenous plant species diversity in the study area
- The high infestation of alien and weed plant species
- Existing infrastructure and developments on the site and surrounds
- No plant or animal Species of Conservation Concern recorded on site nor are they expected to breed/occur on the proposed development site
- A complete lack of any significant indigenous vegetation species diversity or presence in at least 60% of the study area, suggesting low rehabilitation potential
- The heavily disturbed soils, suggesting low rehabilitation potential
- The limited ecological connectivity of the site with ongoing disturbances such as urban development, waste and soil dumping, site clearance, storm water management, excavations etc.

The Kuils River flows through the proposed Erica Drive dualling from north to south. The freshwater ecological features on the site have been totally modified and channelled. On the site, surrounding land use, the channelling of the river and the existing constructed bridge has resulted in all of the indigenous riparian vegetation being removed from the river and streams. In terms of the importance and sensitivity of the features, the numerous impacts have greatly reduced their species richness and diversity.

Six wetlands as identified on site will be impacted upon. The impacted wetlands have largely modified wetland integrity as a large loss of natural habitat, biota and basic ecosystem functions has occurred. The Wetland Health Present Ecological Status of the impacted wetlands was assessed to be largely modified and in a moderate ecological importance state and sensitivity.

There are two conservation mapping initiatives of relevance to the project, the Freshwater Ecosystem Priority Areas (FEPA) map which is available for the entire South Africa and the 2017 City of Cape Town Biodiversity Network Map. FEPAs are strategic spatial priorities for conserving freshwater ecosystems and associated biodiversity that were determined through a process of systematic biodiversity planning and were identified using a range of criteria for serving ecosystems and associated biodiversity of rivers, wetlands and estuaries. These rivers should be kept in their current condition, should not be degraded any further than its current moderately modified condition and it should be considered for rehabilitation.

The Kuils River at the study area is mapped as a FEPA River that is considered to be largely modified and should not be allowed to be degraded or modified further. However the areas to be impacted upon by the proposed development have been completely transformed due to canalisation and an existing bridge structure. The impacted area of the Kuils River is not classified as a wetland or CESA in the City of Cape Town Biodiversity Network (2017).

There are no FEPA wetlands mapped within the study area. The proposed road alignment will impact on six wetlands. Wetlands 1, 2, 3, 4, 7 and 8 and were mapped as part of three larger wetlands in the City of Cape Town Biodiversity Network (2017). The identified wetlands that will be impacted upon are all classified as natural and semi-natural wetlands, without a channelled outflow and vegetated. The wetlands were all also classified as a CESA in the City of Cape Town Biodiversity Network (2017). The mapping confidence for these wetlands is however indicated as Low Confidence and from the assessment conducted it is therefore clear that the mapping was not groundtruthed.

Refer to Appendix G: Specialist Report for more detailed descriptions of the terrestrial botanical and freshwater ecosystems as assessed.

7. LAND USE OF THE SITE

Note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed development.

| | | | | |
|----------------------------------|---|--|-------------------------------|----------------------------------|
| Untransformed area | Low density residential | Medium density residential | High density residential | Informal residential |
| Retail | Commercial & warehousing | Light industrial | Medium industrial | Heavy industrial |
| Power station | Office/consulting room | Military or police base/station/compound | Casino/entertainment complex | Tourism and Hospitality facility |
| Open cast mine | Underground mine | Spoil heap or slimes dam | Quarry, sand or borrow pit | Dam or reservoir |
| Hospital/medical centre | School | Tertiary education facility | Church | Old age home |
| Sewage treatment plant | Train station or shunting yard | Railway line | Major road (4 lanes and more) | Airport |
| Harbour | Sport facilities | Golf course | Polo fields | Filling station |
| Landfill or waste treatment site | Plantation | Agriculture | River, stream or wetland | Nature conservation area |
| Mountain, koppie or ridge | Museum | Historical building | Graveyard | Archaeological site |
| Other land uses (describe): | Existing formal and informal roads, sand dunes, transformed indigenous vegetation areas, illegal waste dumping areas. | | | |

(a) Provide a description.

Currently the 12.5ha area identified for the road extension is unused vacant land mainly zoned as street parcels and transformed due to previous and ongoing urban developments.

The development area west and immediately east of the R300 is undulating with sand dunes. These dunes have however been heavily disturbed and are more likely man-made to the most extent due to land excavations and stock piling that occurred while establishing the surrounding urban developments and landfill site. Most of the development area east of the R300 is flat with gradual slopes. The highest elevation of the area west of the R300 is 64m and the lowest 54m, the highest elevation of the area east of the R300 is 54m (dune immediately west of R300) and lowest 40m (the Kuils River tributary).

The site is located within dense urban residential areas. The area west of the R300 is also bordered by a landfill site. The channelled Kuils River tributary crosses the eastern half of the development site along Belhar Road and the R300 crosses the western half. As previously mentioned the site has been significantly disturbed and transformed due to urban development. Ongoing illegal waste dumping is taking place at various locations within the area west of the R300 adjacent to the landfill site. Several wetlands also occur throughout the proposed development site and assessment of the wetland areas will be conducted in a separate investigation. The brief for this botanical assessment only focussed on identifying potential impacts on significant terrestrial indigenous vegetation areas.

8. LAND USE CHARACTER OF THE SURROUNDING AREA

- (a) Highlight the current land uses and/or prominent features that occur within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

Note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed development.

| | | | | |
|----------------------------------|--------------------------------|--|-------------------------------|----------------------------------|
| Untransformed area | Low density residential | Medium density residential | High density residential | Informal residential |
| Retail | Commercial & warehousing | Light industrial | Medium industrial | Heavy industrial |
| Power station | Office/consulting room | Military or police base/station/compound | Casino/entertainment complex | Tourism and Hospitality facility |
| Open cast mine | Underground mine | Spoil heap or slimes dam | Quarry, sand or borrow pit | Dam or reservoir |
| Hospital/medical centre | School | Tertiary education facility | Church | Old age home |
| Sewage treatment plant | Train station or shunting yard | Railway line | Major road (4 lanes and more) | Airport |
| Harbour | Sport facilities | Golf course | Polo fields | Filling station |
| Landfill or waste treatment site | Plantation | Agriculture | River, stream or wetland | Nature conservation area |
| Mountain, koppie or ridge | Museum | Historical building | Graveyard | Archaeological site |
| Other land uses (describe): | NA | | | |

- (b) Provide a description, including the distance and direction to the nearest residential area, industrial area, agri-industrial area.

The western half of the development site is surrounded by informal and medium to high density residential areas of Belhar, a landfill site, Bellville South industrial area and transformed wetland and indigenous vegetation areas. The R300 road crosses the middle of the site. The eastern half of the site is surrounded by medium to high density residential areas of Kalkfontein and Gersham, transformed wetland and indigenous vegetation areas and the Kuils River tributary crosses the site. Various retail/business and school facilities also occurs within the surrounding areas.

9. SOCIO-ECONOMIC ASPECTS

- a) Describe the existing social and economic characteristics of the community in the vicinity of the proposed site, in order to provide baseline information (for example, population characteristics/demographics, level of education, the level of employment and unemployment in the area, available work force, seasonal migration patterns, major economic activities in the local municipality, gender aspects that might be of relevance to this project, etc.).

Municipal Area

Erika Drive is located 20km east of Cape Town and falls within the jurisdiction of the Cape Town Metropolitan Municipality (CTMM). CTMM covers an approximate area of 2.461km².

Population Size:

The population size of CTMM is approximately 4.004.793 and it includes the towns of Athlone, Atlantis, Belhar, Bellville, Blackheath, Blouberg and Kuils River as well as the rural areas adjacent to and between these towns. 67.7% of the persons in the Cape Town area are English speaking and 22.5% Afrikaans speaking.

Household Income

In 2011, households with an annual income of R20, 000 – R40, 000 accounted for the largest concentration of households (16%).

Cape Town Municipality has a large number of people receiving some or other form of grant. Some people receive more than one grant, for example a disability or old age grant and a child support grant.

Socio-Economics:

The Cape Town Municipality is committed to the social and economic development of the people in the area. Housing for the poor continues to be one of the biggest problems faced in the Cape Town area. As reported in the Cape Town Municipality Annual Report 2015/16 the Municipal Council has made provision in its budgets to develop capitalize on housing opportunities.

Cape Town households receive very good municipal services and most of the households use electricity for heating, cooking and lighting. Service delivery to the poor in informal settlements or households living in backyards of the City's rental stock continues to be a major challenge for the municipality. If this is to be addressed meaningfully, location of some settlements must be relative to bulk infrastructure, increasing capacity especially electricity supply where infrastructure does exist.

Employment

In 2016, The average unemployment rate in Cape Town was 26.5% according to the Quarterly Labour Force Survey 2017.

The labour force is classified into four main categories namely, high skilled, skilled, low skilled and unspecified. Low skill occupations are defined as individuals employed in elementary occupations; skilled occupations include clerks, service workers, skilled agricultural and fishery workers, craft and related trades workers as well as plant and machine operators and assemblers. The high skilled category includes legislators, senior officials and managers, professionals, technicians and associate professionals.

Employment Industries

Various types of economic activities can be found within the Theewaterskloof Local Municipality area of which the biggest sector is finance, insurance, business services (36.1%) followed by manufacturing (16.1%). The smallest sectors include agriculture (9.7%) and construction (4.15)

Tourism Opportunities:

Cape Town Tourism is based on the city's exceptional, internationally renowned natural systems, including Table Mountain, local nature reserves, species-rich fynbos, extensive coastline, cultural heritage and the winelands. Cape Town is also the gateway to the West Coast and its spectacular spring flowers. In 2015, the City received a silver award for "Best Destination for Responsible Tourism".

*Source: * Five-year intergrated development plan July 2017 – June 2022*

10. HISTORICAL AND CULTURAL ASPECTS

- (a) Please be advised that if section 38 of the NHRA is applicable to your proposed development, you are requested to furnish this Department with written comment from Heritage Western Cape as part of your public participation

process. Heritage Western Cape must be given an opportunity, together with the rest of the I&APs, to comment on any Pre-application BAR, a Draft BAR, and Revised BAR.

Section 38 of the NHRA states the following:

"38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

- (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of a site-
 - (i) exceeding 5 000m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000m² in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development".

(b) The impact on any national estate referred to in section 3(2), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii), of the NHRA, must also be investigated, assessed and evaluated. Section 3(2) states the following:

"3(2) Without limiting the generality of subsection (1), the national estate may include—

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds, including—
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the Gazette;
 - (v) historical graves and cemeteries; and
 - (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including—
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage;
 - (iii) ethnographic art and objects;
 - (iv) military objects;
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interest; and
 - (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996)".

| Is Section 38 of the NHRA applicable to the proposed development? | | YES | NO | UNCERTAIN |
|---|--|-----|----|-----------|
| If YES or UNCERTAIN, explain: | <p>The proposed activity is for the construction of a road longer than 300 m. Erica Drive will be extended in an easterly direction toward the R300. Erica Drive will extend over the R300 and continue east where it will connect to Belhar Road. Belhar Road will be upgraded to a multi-lane dual traffic road.</p> <p>A Notice of Intent to Develop was submitted to the HWC and the following record of decision was received – <i>You are hereby notified that, since there is no reason to believe that the proposed expansion and upgrade of Eric Drive, Belhar, Cape Town, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.</i></p> <p><i>However should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and HWC must be notified without delay.</i></p> | | | |
| Will the development impact on any national estate referred to in Section 3(2) of the NHRA? | | YES | NO | UNCERTAIN |

| | | | | |
|---|----|-----|----|-----------|
| If YES or UNCERTAIN, explain: | NA | | | |
| Will any building or structure older than 60 years be affected in any way? | | YES | NO | UNCERTAIN |
| If YES or UNCERTAIN, explain: | NA | | | |
| Are there any signs of culturally or historically significant elements, as defined in section 2 of the NHRA, including Archaeological or paleontological sites, on or close (within 20m) to the site? | | YES | NO | UNCERTAIN |
| If YES or UNCERTAIN, explain: | NA | | | |

Note: If uncertain, the Department may request that specialist input be provided **and** Heritage Western Cape must provide comment on this aspect of the proposal. (Please note that a copy of the comments obtained from the Heritage Resources Authority must be appended to this report as Appendix E1).

11. APPLICABLE LEGISLATION, POLICIES, CIRCULARS AND/OR GUIDELINES

(a) Identify all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to the development proposal and associated listed activity(ies) being applied for and that have been considered in the preparation of the BAR.

| LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS | ADMINISTERING AUTHORITY and how it is relevant to this application | TYPE Permit/license/authorisation/comment / relevant consideration (e.g. rezoning or consent use, building plan approval, Water Use License and/or General Authorisation, License in terms of the SAHRA and CARA, coastal discharge permit, etc.) | DATE (if already obtained): |
|--|---|--|---|
| Western Cape Land Use Planning Act, 2014 ("LUPA") | City of Cape Town | Consent use | NA |
| National Water Act, 1998 (Act No. 36 of 1998) [NWA] and relevant regulations | Department of Water And Sanitation | Water Use Licence | Application to be submitted |
| National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA] and relevant regulations | Western Cape Department of Environmental Affairs and Development Planning | Environmental Authorisation Application | Application to be submitted |
| National Heritage Resources Act 25 of 1999 [NHRA] | Heritage Western Cape South African Heritage Resource Agency | NID Submission of a Heritage Impact Assessment | Final Comment Received – No HIA to be conducted |
| National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEMWA] and relevant regulations | Western Cape Department of Environmental Affairs and Development Planning | NA | NA |
| National Environmental Management: Biodiversity Act 10 of 2004 [NEMBA] | Western Cape Department of Environmental Affairs and Development Planning and Cape Nature | Comments to be obtained concerning expected biodiversity impacts | Comments still to be obtained |

| | | | |
|---|--|--|--|
| National Environmental Management: Air Quality Act, 39 Of 2004 [NEMAQA] and Relevant Regulations | Western Cape Department of Environmental Affairs and Development Planning | NA | NA |
| Conservation of Agricultural Resources Act, 43 Of 1983 [CARA] | National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture | NA | NA |
| National Health Act, 61 of 2003 [NHA] | Department of Health | NA | NA |
| Constitution of the Republic of South Africa, 1996 | | General application to individual rights of all on and adjacent to the sites. | Public Participation Process to be conducted |
| Fencing Act, 31 of 1963 | | NA | NA |
| National Building Regulations and Building Standards Act 103 of 1977 [NBRBSA] and relevant regulations | | NA | NA |
| National Veld and Forest Fire Act 101 of 1998 [NVFFA] | | NA | NA |
| Fertilizers, Farm Feeds, Agricultural Remedies And Stock Remedies Act, 36 Of 1947 [FFFARSRA] and Relevant Regulations | National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture | NA | NA |
| 2017 City of Cape Town Biodiversity Network | City of Cape Town and CapeNature | Comments to be obtained concerning expected biodiversity impacts | Comments still to be obtained |
| City of Cape Town Spatial Development Framework | City of Cape Town | Proposed road developments already included in planned infrastructure in local SDF | NA |
| City of Cape Town's 2017-2018 Service Delivery Implementation Plan | City of Cape Town | Proposed road developments already included in planned infrastructure in service delivery plan | NA |
| City of Cape Town's Integrated Development Plan 2017-2022 | City of Cape Town | Proposed road developments already included in planned infrastructure in local IDP | NA |

| POLICY/ GUIDELINES/BY-LAWS | ADMINISTERING AUTHORITY |
|---|---|
| Guideline on Public Participation | Western Cape Department of Environmental Affairs and Development Planning |
| Guidelines on Alternatives | Western Cape Department of Environmental Affairs and Development Planning |
| Guideline on Need and desirability | Western Cape Department of Environmental Affairs and Development Planning |
| Guideline for Environmental Management Plans (EMP's) | Western Cape Department of Environmental Affairs and Development Planning |
| Guideline of Specialist Reports | Western Cape Department of Environmental Affairs and Development Planning |
| Air Quality Management, 2016 | City of Cape Town |
| Community Fire Safety, 2002 | City of Cape Town |
| Constitution of the Transport and Urban Development Authority for Cape Town, 2017 | City of Cape Town |
| Constitution of Transport for Cape Town, 2013 | City of Cape Town |
| Electricity Supply, 2010 | City of Cape Town |
| Environmental Health, 2003 | City of Cape Town |
| Immovable Property, 2015 | City of Cape Town |
| Integrated Waste Management, 2009 | City of Cape Town |
| Municipal Planning, 2015 | City of Cape Town |

| | |
|---|-------------------|
| Outdoor Advertising and Signage, 2001 | City of Cape Town |
| Parking, 2010 | City of Cape Town |
| Stormwater Management, 2005 | City of Cape Town |
| Street, Public Places and the Prevention of Noise Nuisances, 2007 | City of Cape Town |
| Traffic, 2011 | City of Cape Town |
| Treated Effluent, 2010 | City of Cape Town |
| Waste Management, 2000 | City of Cape Town |
| Wastewater and Industrial Effluent, 2014 | City of Cape Town |
| Water, 2010 | City of Cape Town |

(b) Describe how the proposed development **complies with and responds** to the legislation and policy context, plans, guidelines, spatial tools, municipal development planning frameworks and instruments.

| LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS | Describe how the proposed development complies with and responds to: |
|--|--|
| NEMA | Basic Assessment Process conducted to assess potential environmental impacts and apply for Environmental Authorisation |
| NEMWA | If applicable all waste management activities to be conducted during the proposed development to adhere to the NEMWA requirements |
| NEMBA | If applicable potential impacts on biodiversity features of the site and surrounds to be assessed and mitigation measures proposed during the basic assessment process. |
| NEMAQA | If applicable potential impacts on air quality on site and surrounds to be assessed and mitigation measures proposed during the basic assessment process. |
| NWA | If applicable potential impacts on ground- and surface water resources assessed during basic assessment process and if required a water use authorisation under section 21 will be applied for. |
| CARA | If applicable the landowner/applicant is reminded of his/her responsibility to manage and eradicate certain weed and alien plant vegetation on his/her property and requirements are incorporated into the EMP. |
| National Health Act | If applicable potential impacts on the health and wellbeing of human population on the site and surrounds are assessed and mitigation measure are proposed during the basic assessment process. |
| Constitution of the RSA | General application to individual rights of all on and adjacent to the sites. |
| Fencing Act | If applicable potential impacts and requirements concerning fencing of the site and surrounds to be assessed and mitigation measures proposed during the basic assessment process. |
| National Building Regulations and Building Standards Act | If applicable potential impacts and requirements concerning erection of building on the site and surrounds to be assessed and mitigation measures proposed during the basic assessment process. |
| NHRA | If applicable potential impacts on graves and burial sites and any structures older than 60 years are assessed and mitigation measures proposed during the basic assessment process. |
| NVFFA | If applicable any activities that could result in the start of veld fires are assessed and mitigated during the basic assessment process. |
| FFARSRA | If applicable any potential impacts of activities associated with pest control, the use of agricultural remedies and with providing / manufacturing fertiliser are assessed and mitigated during the basic assessment process. |
| Guideline on Public Participation | The public participation guideline is used to determine the requirements in terms of implementing the public participation process during the basic assessment process to be conducted. The guideline was also used to determine the most effective communication strategies for public participation. |

| LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS | Describe how the proposed development complies with and responds to: |
|---|---|
| Guidelines on Alternatives | The guidelines for alternatives assessment was used to develop a methodology for alternatives assessment. This methodology was applied to determine and assess the most viable alternatives to the project. The assessment was undertaken against the baseline environment (i.e. the no-go option). |
| Guideline on Need and desirability | The guideline was taken into account to determine whether the project complied according to the concept of Best Practicable Environmental Option as well as environmental and social sustainability. |
| Guideline for EMP's | The guideline for EMP's was taken into account to determine the most effective minimize, mitigation and management measures to minimise or prevent the potential environmental impacts identified during the basic assessment process |

Note: Copies of any comments, permit(s) or licences received from any other Organ of State must be attached to this report as **Appendix E**.

Section C: PUBLIC PARTICIPATION

The PPP must fulfil the requirements outlined in the NEMA, the EIA Regulations, 2014 (as amended) and if applicable, the NEM: WA and/or the NEM: AQA. This Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must also be taken into account.

- Please highlight the appropriate box to indicate whether the specific requirement was undertaken or whether there was an exemption applied for.

| | | | |
|---|-----|-----------|-----|
| In terms of Regulation 41 of the EIA Regulations, 2014 (as amended) - | | | |
| (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 | N/A |
| (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 | N/A |
| (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 Department; | YES | EXEMPTION | N/A |
| (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; | YES | EXEMPTION | N/A |
| (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 | YES | EXEMPTION | N/A |
| (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— (i) illiteracy; (ii) disability; or (iii) any other disadvantage. | YES | EXEMPTION | N/A |
| If you have indicated that "EXEMPTION" is applicable to any of the above, proof of the exemption decision must be appended to this report. | | | |
| Please note that for the NEM: WA and NEM: AQA, a notice must be placed in at least two newspapers circulating in the area where the activity applied for is proposed. | | | |

| | | |
|--|-----|----|
| If applicable, has/will an advertisement be placed in at least two newspapers? | YES | NO |
| If "NO", then proof of the exemption decision must be appended to this report. | | |

2. Provide a list of all the State Departments and Organs of State that were consulted:

| State Department / Organ of State | Date request was sent: | Date comment received: | Support / not in support |
|---|--|------------------------|---|
| Cape Nature | Still to be sent | - | - |
| DEA&DP: Development Management | Still to be sent | - | - |
| DEA&DP: Waste Management | Still to be sent | - | - |
| DEA&DP: Pollution and Chemicals Management | Still to be sent | - | - |
| Department of Water and Sanitation | Pre-application meeting held on 30/01/2017 | - | Water Use License Application to be submitted |
| Heritage Western Cape | Notice of Intent to Develop submitted 03/11/2017 | 03/11/2017 | Record of Decision states that, "since there is no reason to believe that the proposed expansion and upgrade of Erica Drive, Belhar, Cape Town, will impact on heritage resources, no further action under Seciton 38 of the National Heritage Resources Act (Act 25 of 1999) is required". |
| SANRAL | Still to be sent | - | - |
| Department of Transport: Western Cape | Still to be sent | - | - |
| Eskom | Still to be sent | - | - |
| City of Cape Town Municipality – Environmental Department | Still to be sent | - | - |

3. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated, or the reasons for not including them.
(The detailed outcomes of this process, including copies of the supporting documents and inputs must be included in a Comments and Response Report to be attached to the BAR (see note below) as **Appendix F**).

None as of yet. A copy of this report is still to be circulated.

4. Provide a summary of any conditional aspects identified / highlighted by any Organs of State, which have jurisdiction in respect of any aspect of the relevant activity.

None as of yet. A copy of this report is still to be circulated.

Note:

Even if pre-application public participation is undertaken as allowed for by Regulation 40(3), it must be undertaken in accordance with the requirements set out in Regulations 3(3), 3(4), 3(8), 7(2), 7(5), 19, 40, 41, 42, 43 and 44.

If the "exemption" option is selected above and no proof of the exemption decision is attached to this BAR, the application will be refused.

A list of all the potential I&APs, including the Organs of State, notified and a list of all the registered I&APs must be submitted with the BAR. The list of registered I&APs must be opened, maintained and made available to any person requesting access to the register in writing.

The BAR must be submitted to the Department when being made available to I&APs, including the relevant Organs of State and State Departments which have jurisdiction with regard to any aspect of the activity, for a commenting period of at least 30 days. Unless agreement to the contrary has been reached between the Competent Authority and the EAP, the EAP will be

responsible for the consultation with the relevant State Departments in terms of Section 24O and Regulation 7(2) – which consultation must happen simultaneously with the consultation with the I&APs and other Organs of State.

All the comments received from I&APs on the BAR must be recorded, responded to and included in the Comments and Responses Report included as **Appendix F** of the BAR. If necessary, any amendments made in response to comments received must be effected in the BAR itself. The Comments and Responses Report must also include a description of the PPP followed.

The minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded, must also be submitted as part of the public participation information to be attached to the final BAR as **Appendix F**.

Proof of all the notices given as indicated, as well as notice to I&APs of the availability of the Pre-Application BAR (if applicable), Draft BAR, and Revised BAR (if applicable) must be submitted as part of the public participation information to be attached to the BAR as **Appendix F**. In terms of the required "proof" the following must be submitted to the Department:

- a site map showing where the site notice was displayed, a 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 D: NEED AND DESIRABILITY

Note: Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website: <http://www.westerncape.gov.za/eadp>. In this regard, it must be noted that the *Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010* published by the national Department of Environmental Affairs on 20 October 2014 (GN No. 891 on Government Gazette No. 38108 refers) (available at: http://www.gov.za/sites/www.gov.za/files/38108_891.pdf) also applied to EIAs in terms of the EIA Regulations, 2014 (as amended).

| | | | |
|--|----------|----|----------------|
| 1. Is the development permitted in terms of the property's existing land use rights? | YES & NO | - | Please explain |
| Most of the proposed development is located on existing road reserves, but some of the affected properties are not zoned road reserve therefore rezoning will be required. | | | |
| 2. Will the development be in line with the following? | | | |
| (a) Provincial Spatial Development Framework ("PSDF"). | YES | NO | Please explain |
| The proposed activity will result in the expansion of the City's road network, thus alleviating congestion and making areas more accessible. The Municipality is mandated in terms of the PSDF to provide and maintain road infrastructure and networks. The activity is therefore in line with the objectives manifested in the PSDF. | | | |
| (b) Urban edge / edge of built environment for the area. | YES | NO | Please explain |
| The activity is located within the built environment. | | | |
| (c) Integrated Development Plan and Spatial Development Framework of the Local Municipality (e.g., would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF ?). | YES | NO | Please explain |
| The proposed activity has been included in the City of Cape Town's 2017 - 2018 Service Delivery Implementation Plan as manifested by the Integrated Development Plan 2017 - 2022. The proposed activity has been planned to alleviate traffic congestion of Erica Drive, through expansion of the road network. This is in line with the strategic objectives of the Municipality. | | | |
| (d) An Environmental Management Framework (" EMF ") adopted by this Department. (e.g., Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?) | YES | NO | Please explain |
| No EMF adopted by the Department for the applicable area. | | | |
| (e) Any other Plans (e.g., Integrated Waste Management Plan (for waste management activities), etc.)). | YES | NO | Please explain |
| NA | | | |
| 3. Is the land use (associated with the project being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant | YES | NO | Please explain |

| | | | |
|---|-----|----|----------------|
| environmental authority (in other words, is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)? | | | |
| The proposed activity has been included in the City of Cape Town's 2017 - 2018 Service Delivery Implementation Plan as manifested by the Integrated Development Plan 2017 - 2022. The proposed activity has been planned to alleviate traffic congestion of Erica Drive, through expansion of the road network. This is in line with the strategic objectives of the Municipality. | | | |
| 4. Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur on the proposed site at this point in time? | YES | NO | Please explain |
| Current land use of the proposed development site is vacant transformed indigenous vegetation and wetland areas surrounding with urban developments and with low ecological connectivity value. It is required to alleviate traffic congestion of Erica Drive, through expansion of the road network. This is in line with the strategic objectives of the Municipality. | | | |
| 5. Does the community/area need the project and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g., development is a National Priority, but within a specific local context it could be inappropriate.) | YES | NO | Please explain |
| It is required to alleviate traffic congestion of Erica Drive, through expansion of the road network. This is in line with the strategic objectives of the Municipality. | | | |
| 6. Are the necessary services available together with adequate unallocated municipal capacity (at the time of application), or must additional capacity be created to cater for the project? (Confirmation by the relevant municipality in this regard must be attached to the BAR as Appendix E .) | YES | NO | Please explain |
| The proposed development will only make use of municipal services temporarily during the construction phase. i.e. water will be required for cement mixing and waste handling facilities for the disposal of construction waste. | | | |
| 7. Is this project provided for in the infrastructure planning of the municipality and if not, what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant municipality in this regard must be attached to the BAR as Appendix E .) | YES | NO | Please explain |
| This is a municipal project – The proposed activity has been included in the City of Cape Town's 2017 – 2018 Service Delivery Implementation Plan as manifested by the Integrated Development Plan 2017 – 2022. The proposed activity has been planned to alleviate traffic congestion of Erica Drive, through expansion of the road network. This is in line with the strategic objectives of the Municipality. | | | |
| 8. Is this project part of a national programme to address an issue of national concern or importance? | YES | NO | Please explain |
| - | | | |
| 9. Do location factors favour this land use (associated with the development proposal and associated listed activity(ies) applied for) at this place? (This relates to the contextualisation of the proposed land use on the proposed site within its broader context.) | YES | NO | Please explain |
| The proposed activities are site specific to alleviate traffic congestion within a specific area to link in with existing road infrastructure. | | | |
| 10. Will the development proposal or the land use associated with the development proposal applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)? | YES | NO | Please explain |
| The proposed development will not impact on any sensitive cultural areas, but will impact on sensitive natural areas such as wetlands. | | | |
| 11. Will the development impact on people's health and well-being (e.g., in terms of noise, odours, visual character and 'sense of place', etc.)? | YES | NO | Please explain |
| Construction of the proposed infrastructure will lead to temporary construction noise impacts and permanent visual impacts. | | | |
| 12. Will the proposed development or the land use associated with the proposed development applied for, result in unacceptable opportunity costs? | YES | NO | Please explain |
| - | | | |
| 13. What will the cumulative impacts (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be? | | | |
| <p>Definite Positive Cumulative Impacts:</p> <ul style="list-style-type: none"> • Temporary employment opportunities (construction) • Infrastructure provision - alleviating traffic congestion within the affected area. <p>Potential Negative Cumulative Impacts mainly associated with the Construction Phase:</p> <ul style="list-style-type: none"> • Disturbance to subsurface geological layers • Soil erosion • Hardening of surfaces leading to storm water accumulation and increase in amount and | | | |

| | | | |
|--|-----|----|----------------|
| <ul style="list-style-type: none"> runoff speed • Dust • Surface and ground water resources pollution • Emissions and air quality • Impact on sensitive environments (rivers, wetlands. Indigenous vegetation areas etc.) • Increase in traffic • Noise • Impact of the proposed development on archaeological, paleontological and heritage remains • Visual/sense of place | | | |
| 14. Is the development the best practicable environmental option for this land/site? | YES | NO | Please explain |
| <p>As per the findings of the terrestrial botanical and freshwater ecosystems impact assessments conducted the sensitive natural features remaining on the site have been isolated, transformed and degraded to such an extent that rehabilitation and conservation is not a feasible or reasonable option for the affected areas. The location factors of the site in terms of connectivity value to existing road infrastructure also favours the proposed development.</p> | | | |
| 15. What will the benefits be to society in general and to the local communities? | | | Please explain |
| <p>Definite Positive Cumulative Impacts:</p> <ul style="list-style-type: none"> • Temporary employment opportunities (construction) • Infrastructure provision - alleviating traffic congestion within the affected area. | | | |
| 16. Any other need and desirability considerations related to the proposed development? | | | Please explain |
| NA | | | |
| 17. Describe how the general objectives of Integrated Environmental Management as set out in Section 23 of the NEMA have been taken into account: | | | |
| <ul style="list-style-type: none"> • All involved in the planning and design identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage. The risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in Section 23 were taken in consideration and used in the assessments, mitigations and recommendations throughout this report. | | | |
| <p>INTEGRATED ENVIRONMENTAL MANAGEMENT</p> <p>23. General objectives</p> <p>(1) The purpose of this Chapter is to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities.</p> <p>(2) The general objective of integrated environmental management is to</p> <p>(a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment; <i>Refer to point 18 below.</i></p> <p>(b) identify, predict and evaluate the actual and potential impact on the environment, socioeconomic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2; <i>The potential impacts for both the construction and the operational phase have been identified and assessed in this report – this allows for the appropriate management and mitigation measures to be identified and implemented where and when necessary to prevent (and if prevention is not possible to mitigate) environmental degradation and promote sustainability.</i></p> <p>(c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them; <i>All decisions during the planning and assessment by all involved for the activity promote the integration of the principles of environmental management set out in Section 2 to minimize and mitigate any significant effect on the environment. All these mitigations and management measures are proposed to be included as EA conditions and included in the EMP requirements.</i></p> | | | |

(d) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;

Adequate and appropriate opportunity for public participation was provided and proof thereof included in Appendix F as per the guidelines and regulations in decisions that may affect the environment.

(e) ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and

All involved in the planning and design identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage. The risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in Section 2 were taken in consideration and used in the assessments, mitigations and recommendations throughout this report

(f) identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.

Refer to point 18 below.

(3) The Director-General must coordinate the activities of organs of state referred to in section 24(1) and assist them in giving effect to the objectives of this section and such assistance may include training, the publication of manuals and guidelines and the co-ordination of procedures.

18 Describe how the **principles of environmental management** as set out in Section 2 of the NEMA have been taken into account:

NATIONAL ENVIRONMENTAL MANAGEMENT PRINCIPLES

2. Principles

(1) The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and

(a) shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;

(b) serve as the general framework within which environmental management and implementation plans must be formulated;

(c) serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;

(d) serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and

(e) guide the interpretation, administration and implementation of this Act, and any other law concerned with the protection or management of the environment.

(2) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably. *The proposed environmental management requirements have been determined by assessing all potential impacts that the development may have on people and their needs and aims to prevent or if prevention is not possible to mitigate any potential negative impacts on the environment and people.*

(3) Development must be socially, environmentally and economically sustainable. *The proposed development has been planned, designed and assessed in such a manner as to ensure that it is socially, environmentally and economically sustainable.*

(4)

(a) Sustainable development requires the consideration of all relevant factors including the following:

(i) That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;

(ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;

(iii) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;

(iv) that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;

(v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;

(vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;

(vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and

(viii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

The assessment conducted aimed to identify all potential negative impacts on the environment and on people's environmental rights (as listed above and more), and where such potential negative impacts as identified and assessed could not be altogether prevented/avoided mitigation measures were recommended and incorporated into the Environmental Management Programme to minimise the significance of the potential negative impacts as far as possible. The assessment also aimed to determine whether or not the proposed development will lead to the unacceptable exploitation of renewable and non-renewable resources and associated ecosystems.

(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

An integrated environmental assessment approach was followed acknowledging that all elements of the environment are linked and interrelated and realising that effects of decisions may have cumulative impacts on the environment and people and that the best practicable environmental option must therefore be selected.

(c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

Environmental justice was pursued to prevent discrimination against any person, particularly vulnerable and disadvantage persons.

(d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being was pursued and special measures implemented if required ensure

access.

(e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

As per the recommended EMP requirements the Applicant (as per the EA stipulations) remains responsible for the environmental health and safety consequences of the proposed activity/ies throughout its life cycle.

(f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

Adequate and appropriate opportunity for public participation was provided and proof thereof included in Appendix F as per the guidelines and regulations in decisions that may affect the environment.

(g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.

All decision regarding the proposed activity/ies took into account the interests, needs and values of all potential interested and affected parties.

(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

Depending on the scope of the proposed activity community awareness campaigns will be conducted as and if required.

(i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.

All potential negative and positive impacts associated with the proposed development are assessed and mitigated during the assessment process.

(j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.

As per standard EMP requirements all relevant health and safety legislation must be adhered to during the implementation of the proposed activities.

(k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.

As per public participation process regulations all information relating to the proposed activities are public knowledge and available to the public for perusal and comments during the assessment process.

(l) There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.

(m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.

Comments from all relevant organs of state are requested, recorded and addressed during assessment process.

(n) Global and international responsibilities relating to the environment must be discharged in the national interest.

Applied as and when relevant to the proposed activities.

(o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's

common heritage.

All potential impacts on environmental resources are assessed and mitigated to prevent unacceptable exploitation of renewable and non-renewable resources and associated ecosystems.

(p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

As per standard EMP requirements the applicant, as per the EA issued, will remain financially responsible for remedying any negative environmental and health effects cause by or due to the proposed activities.

(q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

If applicable the role of women and youth in environmental management and development related to the proposed activities will be assessed and incorporated into EMP requirements during the assessment process.

(r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure. *All sensitive, vulnerable, highly dynamic or stressed ecosystems must be identified during the assessment process and the significance of any potential impacts on these systems must be determined and appropriate prevention, or if prevention is not possible mitigation measures must be incorporated into the EMP requirements.*

SECTION E: DETAILS OF ALL THE ALTERNATIVES CONSIDERED

Note: Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website <http://www.westerncape.gov.za/eadp>.

The EIA Regulations, 2014 (as amended) defines "alternatives" as "in relation to a proposed activity, means different means of fulfilling the general purpose and requirements of the activity, which may include alternatives to the—

- (a) property on which or location where the activity is proposed to be undertaken;
- (b) type of activity to be undertaken;
- (c) design or layout of the activity;
- (d) technology to be used in the activity; or
- (e) operational aspects of the activity;
- (f) and includes the option of not implementing the activity;"

The NEMA (section 24(4)(a) and (b) of the NEMA, refers) prescribes that the procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must, *inter alia*, with respect to every application for environmental authorisation –

- ensure that the general objectives of integrated environmental management laid down in the NEMA and the National Environmental Management Principles set out in the NEMA are taken into account; and
- include an investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity.

The general objective of integrated environmental management (section 23 of NEMA, refers) is, *inter alia*, to "identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management" set out in the NEMA.

The identification, evaluation, consideration and comparative assessment of alternatives directly relate to the management of impacts. Related to every identified impact, alternatives, modifications or changes to the activity must be identified, evaluated, considered and comparatively considered to:

- in terms of negative impacts, firstly avoid a negative impact altogether, or if avoidance is not possible alternatives to better mitigate, manage and remediate a negative impact and to compensate for/offset any impacts that remain after mitigation and remediation; and
- in terms of positive impacts, maximise impacts.

1. DETAILS OF THE IDENTIFIED AND CONSIDERED ALTERNATIVES AND INDICATE THOSE ALTERNATIVES THAT WERE FOUND TO BE FEASIBLE AND REASONABLE

Note: A full description of the investigation of alternatives must be provided and motivation if no reasonable or feasible alternatives exists.

(a) Property and **location/site** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Location alternatives – The location of the proposed activity is site specific as it has to link with existing road infrastructure and the purpose of the proposed development is to alleviate traffic congestion on a specific road within a specific area therefore no other feasible or reasonable location alternatives exists.

(b) **Activity** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Activity alternatives- The proposed lengthening and expansion of existing road infrastructure within the Belhar – Kuilsrivier area is the only reasonable and feasible activity alternative assessed as it is what is needed to alleviate traffic congestion within a specific area.

(c) **Design or layout** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Layout alternatives - Two layout alternatives have been assessed thus far:

Layout Alternative 1 – Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going underneath the R300.

*Reasons why Layout Alternative 1 is **not** preferred:*

- There are existing wetland areas to the east and west of the R300 road and if the proposed new road should be constructed crossing underneath the R300 this will potentially lead to the creation of a “dam” which will require significant stormwater infrastructure developments within the wetland areas.
- Construction underneath the R300 will also cause significant traffic congestion on the R300 during the construction phase.

Layout Alternative 2 - Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going over the R300.

Reasons why Layout Alternative 1 is preferred:

- There are existing wetland areas to the east and west of the R300 road and constructing the new road over the R300 will have the least significant negative impact on the surrounding wetland areas and associated stormwater management impacts.
- Construction over the R300 will also cause less significant traffic congestion on the R300 during the construction phase.

(d) **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, or detailed motivation if no reasonable or feasible alternatives exist:

Technology alternatives – The most up to date technology alternatives will be incorporated into the approved layout and design of the proposed development during the time of development.

(e) **Operational** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Operational alternatives – No operational alternatives were considered as the proposed activity is for the construction of a road to be maintained by the municipality after construction completion.

(f) The option of **not implementing** the activity (the ‘No-Go’ Option):

The No-Go Option- The No-Go option will result in the site remaining as it is - degraded vacant municipal land. The proposed activity will result in the expansion of the City’s road network, thus alleviating congestion and making areas more accessible. The Municipality is mandated in terms of the PSDF to provide and maintain road infrastructure and networks. The activity is therefore in line with the objectives manifested in the PSDF and local Service Delivery Implementation Plan.

- (g) **Other** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

NA

- (h) Provide a **summary** of all alternatives investigated and the outcome of each investigation:

Location alternatives – The location of the proposed activity is site specific as it has to link with existing road infrastructure and the purpose of the proposed development is to alleviate traffic congestion on a specific road within a specific area therefore no other feasible or reasonable location alternatives exists.

Activity alternatives- The proposed lengthening and expansion of existing road infrastructure within the Belhar – Kuilsrivier area is the only reasonable and feasible activity alternative assessed as it is what is needed to alleviate traffic congestion within a specific area.

Layout alternatives - Two layout alternatives have been assessed thus far:

Layout Alternative 1 – Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going underneath the R300.

*Reasons why Layout Alternative 1 is **not** preferred:*

- There are existing wetland areas to the east and west of the R300 road and if the proposed new road should be constructed crossing underneath the R300 this will potentially lead to the creation of a “dam” which will require significant stormwater infrastructure developments within the wetland areas.
- Construction underneath the R300 will also cause significant traffic congestion on the R300 during the construction phase.

Layout Alternative 2 - Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going over the R300.

*Reasons why Layout Alternative 1 is **preferred**:*

- There are existing wetland areas to the east and west of the R300 road and constructing the new road over the R300 will have the least significant negative impact on the surrounding wetland areas and associated stormwater management impacts.
- Construction over the R300 will also cause less significant traffic congestion on the R300 during the construction phase.

Technology alternatives – The most up to date technology alternatives will be incorporated into the approved layout and design of the proposed development during the time of development.

Operational alternatives – No operational alternatives were considered as the proposed activity is for the construction of a road to be maintained by the municipality after construction completion.

The No-Go Option- The No-Go option will result in the site remaining as it is - degraded vacant municipal land. The proposed activity will result in the expansion of the City's road network, thus alleviating congestion and making areas more accessible. The Municipality is mandated in terms of the PSDF to provide and maintain road infrastructure and networks. The activity is therefore in line with the objectives manifested in the PSDF and local Service Delivery Implementation Plan.

- (i) Provide a detailed **motivation for not further considering** the alternatives that were found not feasible and reasonable, including a description and proof of the investigation of those alternatives:

Refer to points (a) – (f) above.

2. PREFERRED ALTERNATIVE

- (a) Provide a **concluding statement** indicating the preferred alternative(s), including preferred location, site, activity and technology for the development.

Layout Alternative 2 - Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going over the R300.

Reasons why Layout Alternative 1 is preferred:

- There are existing wetland areas to the east and west of the R300 road and constructing the new road over the R300 will have the least significant negative impact on the surrounding wetland areas and associated stormwater management impacts.
- Construction over the R300 will also cause less significant traffic congestion on the R300 during the construction phase.

SECTION F: ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE ALTERNATIVES

Note: The information in this section must be DUPLICATED for all the feasible and reasonable ALTERNATIVES.

1. DESCRIBE THE ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE PROPOSED DEVELOPMENT AND ITS ALTERNATIVES, FOCUSING ON THE FOLLOWING:

(a) Geographical, geological and physical aspects:

The proposed development will lead to the hardening of surfaces and transformation of geographical aspects such as transformed indigenous vegetation areas, wetlands, river tributary and inland sand dunes.

The development area west and immediately east of the R300 is undulating with sand dunes. These dunes have however been heavily disturbed and are more likely man-made to the most extent due to land excavations and stock piling that occurred while establishing the surrounding urban developments and landfill site. Most of the development area east of the R300 is flat with gradual slopes. The highest elevation of the area west of the R300 is 64m and the lowest 54m, the highest elevation of the area east of the R300 is 54m (dune immediately west of R300) and lowest 40m (the Kuils River tributary).

The geology of the area is characterised by loose and gravelly grey sandy top soil highly erodible; and mottled, highly weathered subsoil with signs of wetness within lower lying depressions where wetlands occurs. The soils at Kuils River are underlain by the Kuils River-Helderberg Granite pluton (Theron *et al.*, 1992).

The site is located within dense urban residential areas. The area west of the R300 is also bordered by a landfill site. The channelled Kuils River tributary crosses the eastern half of the development site along Belhar Road and the R300 crosses the western half. As previously mentioned the site has been significantly disturbed and transformed due to urban development. Ongoing illegal waste dumping is taking place at various locations within the area west of the R300 adjacent to the landfill site. Several wetlands also occur throughout the proposed development site that is unavoidable and will be impacted upon.

(b) Ecological aspects:

| Will the proposed development and its alternatives have an impact on CBAs or ESAs? If yes, please explain: Also include a description of how the proposed development will influence the quantitative values (hectares/percentage) of the categories on the CBA/ESA map. | YES | NO |
|--|-----|----|
| <p>The City of Cape Town ("CoCT") regularly updates and revises its Biodiversity Network as sites are lost and new information becomes available (Holmes et al 2008), and the latest map (dated 2017) indicates that no mapped terrestrial vegetation CBAs or ESAs occurs on the proposed development site. However approximately 5.7ha of the proposed development site is mapped as aquatic/wetland Critical Ecological Support Area.</p> <p>The natural to semi-natural wetland CESAs are essential in maintaining ecological functioning of ecosystems found on the site and surrounds. Management objective/s is to maintain current ecological functioning.</p> <p>However it is clear from the site investigations conducted that the current demarcation of the CESA wetlands as mapped for the specific site was not groundtruthed for the compilation of the City of Cape Town's Biodiversity Network (2017) report. A freshwater ecosystem specialist was appointed to conduct a freshwater ecological impact assessment and also delineate the actual remaining wetland areas on the proposed development site and concluded that a total wetland area of approximately 1.23ha in total will be permanently transformed/filled during the proposed development.</p> <p>The Kuils River flows through the proposed Erica Drive dualling from north to south. The freshwater ecological features on the site have been totally modified and channelled. On the site, surrounding land use, the channelling of the river and the existing constructed bridge has resulted in all of the</p> | | |

indigenous riparian vegetation being removed from the river and streams. In terms of the importance and sensitivity of the features, the numerous impacts have greatly reduced their species richness and diversity.

Six wetlands as identified on site will be impacted upon. The impacted wetlands have largely modified wetland integrity as a large loss of natural habitat, biota and basic ecosystem functions has occurred. The Wetland Health Present Ecological Status of the impacted wetlands was assessed to be largely modified and in a moderate ecological importance state and sensitivity.

The Freshwater Ecosystem Priority Areas (FEPA) map which is available for the entire South Africa identifies strategic spatial priorities for conserving freshwater ecosystems and associated biodiversity that were determined through a process of systematic biodiversity planning and were identified using a range of criteria for serving ecosystems and associated biodiversity of rivers, wetlands and estuaries. These rivers should be kept in their current condition, should not be degraded any further than its current moderately modified condition and it should be considered for rehabilitation where reasonable and feasible.

The Kuils River at the study area is mapped as a FEPA River that is considered to be largely modified and should not be allowed to be degraded or modified further as per FEPA objectives. However there is an existing bridge structure located on and next to the proposed bridge/road development over the Kuils River tributary and the tributary has been completely transformed due to canalisation. The overall significance of the potential negative impacts on the Kuils River is therefore expected to be of low significance due to the existing transformed state of the affected areas.

The 2017 City of Cape Town Biodiversity Network map indicates that none of the proposed development areas or directly adjacent areas has been mapped as terrestrial CBAs nor ESAs.

Refer to Appendix G: Specialist Report for more detailed descriptions of the potential impacts on the terrestrial botanical and freshwater ecosystems as assessed.

| | | |
|---|-----|----|
| Will the proposed development and its alternatives have an impact on terrestrial vegetation, or aquatic ecosystems (wetlands, estuaries or the coastline)? If yes, please explain: | YES | NO |
|---|-----|----|

The vegetation and ecology within the study area has been heavily disturbed for a long time, and no significant patches of intact natural vegetation remain within the non-wetland areas. Terrestrial botanical diversity is generally very low compared to what it was prior to human disturbance.

Two vegetation types would originally have been present in the area, all of which are now regarded as threatened on a national basis (one Critically Endangered and one Endangered).

Of the Critically Endangered Cape Flats Sand Fynbos vegetation mainly none to very little indigenous vegetation remains, therefore these areas have been indicated as **Low terrestrial botanical sensitivity**, presenting no constraints to the proposed development. Loss of this area would be of **negligible botanical significance at a regional scale**.

The remaining proposed development area represents significantly disturbed secondary Endangered Cape Flats Dune Strandveld vegetation. Limited indigenous vegetation diversity remains within the areas marked as Medium terrestrial botanical sensitivity areas, with no plant Species of Conservation Concern. The loss of the **Medium sensitivity vegetation** in the study area is likely to be of **Medium to Low negative significance** at a regional scale, before and after mitigation.

It is expected that the proposed development will lead to the clearance of less than 2ha of homogenous indigenous vegetation species and no species of conservation concern.

Although development of the Medium terrestrial botanical sensitivity area has been rated as having a potential Medium negative significance at a regional scale if other factors such as ongoing human disturbances and urban development, alien plant encroachment, low ecological connectivity etc. are taken into consideration it is believed that the entire proposed development will have a Low negative significance on the terrestrial habitat of the site and surrounds. It is therefore concluded that the proposed development could therefore be authorised without causing significant negative terrestrial botanical impacts.

These areas also have a low to moderate rehabilitation potential. Rehabilitation will be intensive and would have to involve reintroduction of specimens, alien and weed clearance and maintenance and dune stabilisation with indigenous vegetation etc. and due to the location within the urban area, low ecological connectivity value and small size of the site this will not be a viable site for rehabilitation efforts.

This botanical assessment is informed by:

- The fact that the study area is not mapped as a terrestrial CBA or ESA in the City of Cape Town Biodiversity Network.
- The low indigenous plant species diversity in the study area
- The high infestation of alien and weed plant species
- Existing infrastructure and developments on the site and surrounds
- No plant or animal Species of Conservation Concern recorded on site nor are they expected to breed/occur on the proposed development site
- A complete lack of any significant indigenous vegetation species diversity or presence in at least 60% of the study area, suggesting low rehabilitation potential
- The heavily disturbed soils, suggesting low rehabilitation potential
- The limited ecological connectivity of the site with ongoing disturbances such as urban development, waste and soil dumping, site clearance, storm water management, excavations etc.

The City of Cape Town ("CoCT") regularly updates and revises its Biodiversity Network as sites are lost and new information becomes available (Holmes et al 2008), and the latest map (dated 2017) indicates that no mapped terrestrial vegetation CBAs or ESAs occurs on the proposed development site. However approximately 5.7ha of the proposed development site is mapped as aquatic/wetland Critical Ecological Support Area.

The natural to semi-natural wetland CESAs are essential in maintaining ecological functioning of ecosystems found on the site and surrounds. Management objective/s is to maintain current ecological functioning.

However it is clear from the site investigations conducted that the current demarcation of the CESA wetlands as mapped for the specific site was not groundtruthed for the compilation of the City of Cape Town's Biodiversity Network (2017) report. A freshwater ecosystem specialist was appointed to conduct a freshwater ecological impact assessment and also delineate the actual remaining wetland areas on the proposed development site and concluded that a total wetland area of approximately 1.23ha in total will be permanently transformed/filled during the proposed development.

The Freshwater Ecosystem Priority Areas (FEPA) map which is available for the entire South Africa identifies strategic spatial priorities for conserving freshwater ecosystems and associated biodiversity that were determined through a process of systematic biodiversity planning and were identified using a range of criteria for serving ecosystems and associated biodiversity of rivers, wetlands and estuaries. These rivers should be kept in their current condition, should not be degraded any further than its current moderately modified condition and it should be considered for rehabilitation where reasonable and feasible.

The Kuils River at the study area is mapped as a FEPA River that is considered to be largely modified and should not be allowed to be degraded or modified further as per FEPA objectives. However there is an existing bridge structure located on and next to the proposed bridge/road development over the Kuils River tributary and the tributary itself is canalised. The overall significance of the potential negative impacts on the Kuils River is therefore expected to be of low significance due to the existing transformed state of the affected areas.

Refer to Appendix G: Specialist Report for more detailed descriptions of the terrestrial botanical and freshwater ecosystems as assessed.

| | | |
|--|------------------|--|
| Will the proposed development and its alternatives have an impact on any populations of threatened plant or animal species, and/or on any habitat that may contain a unique signature of plant or animal species? If yes, please explain: | YES and NO | |
|--|------------------|--|

Refer to information as available in the columns above.

Although some indigenous vegetation (originally part of critically endangered and endangered vegetation types) and wetland habitats remains on site no terrestrial or aquatic plant or animal species of conservation concern were recorded at the time of the survey nor are expected to breed or "stay" on the proposed development site.

Describe the manner in which any other biological aspects will be impacted:

NA

Will the proposed development also trigger section 63 of the NEM: ICMA?

YES NO

If yes, describe the following:

- (i) the extent to which the applicant has in the past complied with similar authorisations;
- (ii) whether coastal public property, the coastal protection zone or coastal access land will be affected, and if so, the extent to which the proposed development proposal or listed activity is consistent with the purpose for establishing and protecting those areas;
- (iii) the estuarine management plans, coastal management programmes, coastal management lines and coastal management objectives applicable in the area;
- (iv) the likely socio-economic impact if the listed activity is authorised or is not authorised;
- (v) the likely impact of coastal environmental processes on the proposed development;
- (vi) whether the development proposal or listed activity—
 - (a) is situated within coastal public property and is inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations;
 - (b) is situated within the coastal protection zone and is inconsistent with the purpose for which a coastal protection zone is established as set out in section 17 of NEM: ICMA;
 - (c) is situated within coastal access land and is inconsistent with the purpose for which coastal access land is designated as set out in section 18 of NEM: ICMA;
 - (d) is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment that cannot satisfactorily be mitigated;
 - (e) is likely to be significantly damaged or prejudiced by dynamic coastal processes;
 - (f) would substantially prejudice the achievement of any coastal management objective; or
 - (g) would be contrary to the interests of the whole community;
- (vii) whether the very nature of the proposed activity or development requires it to be located within coastal public property, the coastal protection zone or coastal access land;
- (viii) whether the proposed development will provide important services to the public when using coastal public property, the coastal protection zone, coastal access land or a coastal protected area; and
- (ix) the objects of NEM: ICMA, where applicable.

NA

(c) Social and Economic aspects:

| | |
|--|---------------------|
| What is the expected capital value of the project on completion? | Unknown |
| What is the expected yearly income or contribution to the economy that will be generated by or as a result of the project? | R0 |
| Will the project contribute to service infrastructure? | YES NO |
| Is the project a public amenity? | YES NO |
| How many new employment opportunities will be created during the development phase? | Unknown |
| What is the expected value of the employment opportunities during the development phase? | Unknown |
| What percentage of this will accrue to previously disadvantaged individuals? | As much as possible |
| How will this be ensured and monitored (please explain): | |
| Employment opportunities to be allocated as according to municipal policy/guidelines which promote the employment and appointment of previously disadvantaged individuals. | |
| How many permanent new employment opportunities will be created during the operational phase of the project? | 0 |
| What is the expected current value of the employment opportunities during the first 10 years? | Unknown |
| What percentage of this will accrue to previously disadvantaged individuals? | Unknown |
| How will this be ensured and monitored (please explain): | |
| Employment opportunities to be allocated as according to municipal policy/guidelines which promote the employment and appointment of previously disadvantaged individuals. | |
| Any other information related to the manner in which the socio-economic aspects will be impacted: | |
| - | |

(d) Heritage and Cultural aspects:

Notice of Intent to Develop has been submitted to Heritage Western Cape to determine impacts

and specialist studies required in terms of cultural and historical aspects potentially to be impacted upon. HWC commented:

"You are hereby notified that since there is no reason to believe that the proposed development will impact on heritage resources, no further action under section 38 of the National Heritage Resources Act (act 25 of 1999) is required. However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the excavation of the activities above, all works must be stopped immediately and Heritage Western cape must be notified without delay."

2. WASTE AND EMISSIONS

(a) Waste (including effluent) management

| | | |
|---|---------|----|
| Will the development proposal produce waste (including rubble) during the development phase? | YES | NO |
| If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type? | Unknown | |
| <p>Waste is mainly expected to be produced during the construction phase. Types of "construction phase waste" may include:</p> <ul style="list-style-type: none"> • Overburden material from land clearing including plant materials and sand. • Waste oils i.e. from construction machinery and vehicles. • Sewage from portable toilets. • General domestic waste i.e. food waste and packaging from construction workers. • Construction packing materials i.e. empty cement bags, plastic ties and wrapping etc. • Illegally dumped domestic waste as already present on proposed development site which will have to be removed before construction can commence. • Runoff waste water i.e. from cement mixing areas. <p>There is no reasonable or feasible method to calculate the estimated quantities that will be produced for each of these waste types due to the amount of potential variables which exists i.e. amount of total staff to be employed, amount and type of construction materials to be used etc.</p> | | |

| | | |
|---|-------------------|----|
| Will the development proposal produce waste during its operational phase? | YES | NO |
| If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type? | NA m ³ | |
| NA | | |

| | | |
|---|--|----|
| Will the development proposal require waste to be treated / disposed of on site? | YES | NO |
| If yes, indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of? | NA m ³ | |
| NA | | |
| If no, where and how will the waste be treated / disposed of? Please explain. Indicate the types of waste (actual type of waste, e.g. oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of? | Unknown | |
| All non-hazardous and hazardous waste to be suitably and temporarily stored at the construction camp and disposed of at a licensed landfill and/or hazardous waste handling facility at least once a week. | | |
| Has the municipality or relevant authority confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? If yes, provide written confirmation from the municipality or relevant authority. | YES | NO |
| Will the development proposal produce waste that will be treated and/or disposed of at another facility other than into a municipal waste stream? | Potentially – Yes (it is the applicant's prerogative to decide whether or not he/she wants to appoint a private waste handling company who might dispose of/treat the collected waste elsewhere outside of the municipal waste stream) | |

| | | | |
|---|-----------------|-----|----|
| If yes, has this facility confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? Provide written confirmation from the facility. | | YES | NO |
| Does the facility have an operating license? (If yes, please attach a copy of the licence.) | | YES | NO |
| Facility name: | | | |
| Contact person: | | | |
| Cell: | Postal address: | | |
| Telephone: | Postal code: | | |
| Fax: | E-mail: | | |

Describe the measures that will be taken to reduce, reuse or recycle waste:

As per standard EMP waste management requirements to reduce, reuse or recycle waste must be promoted and implemented as far as feasibly and reasonable practical and financially possible.

(b) Emissions into the atmosphere

| | | |
|---|---------|----|
| Will the development proposal produce emissions that will be released into the atmosphere? | YES | NO |
| If yes, does this require approval in terms of relevant legislation? | YES | NO |
| If yes, what is the approximate volume(s) of emissions released into the atmosphere? | Unknown | |
| Describe the emissions in terms of type and concentration and how these will be avoided/managed/treated/mitigated: | | |
| Potential construction vehicle emission to be produced during the construction phase. Amounts to be produced unknown – will depend on type, amount and condition of construction vehicles used. | | |

3. WATER USE

(a) Indicate the source(s) of water for the development proposal by highlighting the appropriate box(es).

| | | | | | |
|-----------|-------------|-------------|----------------------------|-------|--------------------------------|
| Municipal | Water board | Groundwater | River, Stream, Dam or Lake | Other | The project will not use water |
|-----------|-------------|-------------|----------------------------|-------|--------------------------------|

Note: Provide proof of assurance of water supply (e.g. Letter of confirmation from the municipality / water user associations, yield of borehole)

| | | |
|--|----|----------------|
| (b) If water is to be extracted from a groundwater source, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month: | NA | m ³ |
|--|----|----------------|

| | | |
|---|-----|----|
| (c) Does the development proposal require a water use permit / license from DWS? | YES | NO |
| If yes, please submit the necessary application to the DWS and attach proof thereof to this application as an Appendix. | | |

The activity involves the infill/removal of material from a watercourse i.e wetlands and tributary. Thus triggering a listed activity in terms of section 21 (c) and (i) of the National Water Act. As such a water use licence is required prior to the commencement of the activity.

Proof of pre-application meeting held with DWS will be submitted with the application as per the SOP and "one environmental system" requirements.

| |
|--|
| (d) Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water: |
| Water to be used during the construction phase i.e. for cement mixing to be sourced from non-potable water resources as far as possible. |

4. POWER SUPPLY

(a) Describe the source of power e.g. municipality / Eskom / renewable energy source.

| |
|----|
| NA |
|----|

(b) If power supply is not available, where will power be sourced?

| |
|----|
| NA |
|----|

5. ENERGY EFFICIENCY

(a) Describe the design measures, if any, that have been taken to ensure that the development proposal will be energy efficient:

NA

- (b) Describe how alternative energy sources have been taken into account or been built into the design of the project, if any:

NA

6. TRANSPORT, TRAFFIC AND ACCESS

Describe the impacts in terms of transport, traffic and access.

The objective of the proposed development is to alleviate traffic congestion within the Belhar – Kuilsrivier area therefore the operational phase of the proposed activity will have a positive impact on transport, traffic and access infrastructure.

During the construction phase the proposed activities will have temporary negative impacts on the traffic flow within the relevant Belhar – Kuilsrivier areas leading to additional traffic congestion. The necessary traffic management/mitigation measures must be incorporate into the EMP to minimise the significance of these impacts as far as possible.

7. NUISANCE FACTOR (NOISE, ODOUR, etc.)

Describe the potential nuisance factor or impacts in terms of noise and odours.

Noise

Noise due to construction machinery and activities during the construction/development phase noise disturbance to the directly adjacent land users/ owners are expected to occur. It is not anticipated that the noise will be considerable and will only be temporary. Noise levels produced during the construction phase must not exceed the allowable maximum urban noise levels and must be regulated by the requirements of the EMP.

Odour

No odours are expected to be produced during the proposed construction and/or operational phases.

Note: Include impacts that the surrounding environment will have on the proposed development.

8. OTHER

Refer to Section G below for summary of potential positive and negative impacts as assessed.

SECTION G: IMPACT ASSESSMENT, IMPACT AVOIDANCE, MANAGEMENT, MITIGATION AND MONITORING MEASURES

1. METHODOLOGY USED IN DETERMINING AND RANKING ENVIRONMENTAL IMPACTS AND RISKS ASSOCIATED WITH THE ALTERNATIVES

- (a) Describe the **methodology** used in determining and ranking the nature, significance consequences, extent, duration and probability of potential environmental impacts and risks associated with the proposed development and alternatives.

| The assessment criteria were developed based on the Department of Environmental Affairs' Integrated Environmental Management Series guideline documents. | | | |
|--|---|---------|--|
| Criteria | Description | | |
| Nature | a description of what causes the effect, what will be affected, and how it will be affected. | | |
| | Type | Score | Description |
| Extent (E) | None (No) | 1 | Footprint |
| | Site (S) | 2 | On site or within 100 m of the site |
| | Local (L) | 3 | Within a 20 km radius of the centre of the site |
| | Regional (R) | 4 | Beyond a 20 km radius of the site |
| | National (Na) | 5 | Crossing provincial boundaries or on a national / land wide scale |
| Duration (D) | Short term (S) | 1 | 0 – 1 years |
| | Short to medium (S-M) | 2 | 2 – 5 years |
| | Medium term (M) | 3 | 5 – 15 years |
| | Long term (L) | 4 | > 15 years |
| | Permanent(P) | 5 | Will not cease |
| Magnitude (M) | Small (S) | 0 | will have no effect on the environment |
| | Minor (Mi) | 2 | will not result in an impact on processes |
| | Low (L) | 4 | will cause a slight impact on processes |
| | Moderate (Mo) | 6 | processes continuing but in a modified way |
| | High (H) | 8 | processes are altered to the extent that they temporarily cease |
| | Very high (VH) | 10 | results in complete destruction of patterns and permanent cessation of processes. |
| Probability (P) the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned | Very improbable (VP) | 1 | probably will not happen |
| | Improbable (I) | 2 | some possibility, but low likelihood |
| | Probable (P) | 3 | distinct possibility |
| | Highly probable (HP) | 4 | most likely |
| | Definite (D) | 5 | impact will occur regardless of any prevention measures |
| Significance (S) | Determined through a synthesis of the characteristics described above: S = (E+D+M) x P Significance can be assessed as low, medium or high | | |
| Low: < 30 points: | The impact would not have a direct influence on the decision to develop in the area | | |
| Medium: 30 – 60 points: | The impact could influence the decision to develop in the area unless it is effectively mitigated | | |
| High: > 60 points: | The impact must have an influence on the decision process to develop in the area | | |
| No significance | When no impact will occur or the impact will not affect the environment | | |
| Status | Positive (+) | | Negative (-) |
| The degree to which the impact can be reversed | Completely reversible (R) | 90-100% | The impact can be mostly to completely reversed with the implementation of the correct mitigation and rehabilitation measures. |
| | Partly reversible (PR) | 6-89% | The impact can be partly reversed providing that mitigation measures as stipulated in the EMP are implemented and rehabilitation measures are undertaken |
| | Irreversible (IR) | 0-5% | The impact cannot be reversed, regardless of the mitigation or rehabilitation measures taking place |
| The degree to which the impact may cause irreplaceable loss of resources | Resource will not be lost (R) | 1 | The resource will not be lost or destroyed provided that mitigation and rehabilitation measures as stipulated in the EMP are implemented |
| | Resource may be partly destroyed (PR) | 2 | Partial loss or destruction of the resources will occur even though all management and mitigation measures as stipulated in the EMP are implemented |
| | Resource cannot be replaced (IR) | 3 | The resource cannot be replaced no matter which management or mitigation measures are implemented. |
| The degree to which the impact can be mitigated | Completely mitigatable (CM) | 1 | The impact can be completely mitigated providing that all management and mitigation measures as stipulated in the EMP are implemented |
| | Partly mitigatable (PM) | 2 | The impact cannot be completely mitigated even though all management and mitigation measures as stipulated in the EMP are implemented. Implementation of these measures will provide |

| | | | |
|--|---------------------|---|---|
| | | | a measure of mitigatability |
| | Un-mitigatable (UM) | 3 | The impact cannot be mitigated no matter which management or mitigation measures are implemented. |

(b) Please describe any gaps in knowledge.

EAP is only knowledgeable with regards to the potential environmental and ecosystems aspects. Limited knowledge with regard to the potential negative impacts on traffic during the construction phase.

(c) Please describe the underlying assumptions.

In undertaking the investigation and compiling this report, the following has been assumed:

- The information provided by the client, specialists and engineers is accurate and unbiased;
- The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the development; and
- Should the proposed project be authorised, the applicant will incorporate the recommendations and mitigation measures outlined in this BAR, the EMP and the EA into the detailed design and construction contract specifications and operational management system for the proposed project.

(d) Please describe the uncertainties.

None at this stage.

(e) Describe adequacy of the assessment methods used.

Based on the EAP's assessment information was provided to address the concerns and assess the impacts of the proposed development on the environment. Information as provided by the applicant, specialist, engineers and as collected by the EAP during site surveys etc. has been used to inform the current development proposal and impact assessment.

2. IDENTIFICATION, ASSESSMENT AND RANKING OF IMPACTS TO REACH THE PROPOSED ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE WITHIN THE SITE

Note: In this section the focus is on the identified issues, impacts and risks that influenced the identification of the alternatives. This includes how aspects of the receiving environment have influenced the selection.

(a) List the identified impacts and risks for each alternative.

| | |
|----------------|---|
| Alternative 1: | <p><u>CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 1</u></p> <ul style="list-style-type: none"> • Disturbance to subsurface geological layers (high negative impact before mitigation and high negative impact with mitigation measures); • Disturbance to the Kuils River riverbed and banks (low negative impact before mitigation and low negative impact with mitigation measures); • Impact of construction work on river hydrology/flow (medium negative impact before mitigation and low negative impact with mitigation measures); • Disturbance to wetland depressions and hydrology (high negative impact before mitigation and medium negative impact with mitigation measures); • Soil erosion (high negative impact before mitigation and low negative impact with mitigation measures); • Impacts of construction activities on the water quality of surface and underground water resources (high negative impact before mitigation and low negative impact with mitigation measures); • Increase in and accumulation of storm water runoff (high negative impact before mitigation and medium negative impact with mitigation measures); • Impact of proposed development activities on identified aquatic wetland Critical Ecological Support Areas ("CESA") (high negative impact before mitigation and medium negative impact with mitigation measures); • Impact on the Kuils River riparian habitat (medium negative impact before |
|----------------|---|

- mitigation and low negative impact with mitigation measures);
- Impact on the naturally occurring terrestrial and aquatic fauna and avifauna occurring on the site and surrounds (high negative impact before mitigation and medium negative impact with mitigation measures);
- Impact on the indigenous terrestrial flora present in the area (medium negative impact before mitigation and medium negative impact with mitigation measures);
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increased temporary construction job opportunities (medium positive impact)
- Traffic impacts due to construction on and along urban roads with high traffic volumes (high negative impact before mitigation and medium negative impact with mitigation measures)
- Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures)
- The potential impact of the proposed development on archaeological, palaeontological and heritage remains (low negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures)
- Impact of construction activities on the surrounding land users/owners and tourist's visual landscape of the area (low negative impact before mitigation and low negative impact with mitigation measures)

OPERATIONAL PHASE- LAYOUT ALTERNATIVE 1

- Increase in stormwater runoff and accumulation due to cleared and transformed/ developed vegetation and wetland areas (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact on hydrology/flow due to impedance (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of operational and maintenance activities of proposed development on remaining indigenous vegetation and wetland areas (medium negative impact before mitigation and low negative impact with mitigation measures);
- Expansion and upgrade of existing road infrastructure within the Belhar – Kuilsrivier area (high positive impact on traffic congestion within the area);
- Noise due to traffic along proposed roads (high negative impact before mitigation and medium negative impact with mitigation measures);
- Impact of development on the surrounding land users / owners and tourists visual landscape of the area (low negative impact before mitigation and low negative impact with mitigation measures);
- Impact on planning policies (low negative impact before mitigation and low negative impact with mitigation measures);

DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 1

- The decommissioning of the infrastructure developments are not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management

| | |
|-----------------------|--|
| | <p>measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility.</p> |
| <p>Alternative 2:</p> | <p><u>CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 2</u></p> <ul style="list-style-type: none"> • Disturbance to subsurface geological layers (high negative impact before mitigation and high negative impact with mitigation measures); • Disturbance to the Kuils River riverbed and banks (low negative impact before mitigation and low negative impact with mitigation measures); • Impact of construction work on river hydrology/flow (medium negative impact before mitigation and low negative impact with mitigation measures); • Disturbance to wetland depressions and hydrology (high negative impact before mitigation and medium negative impact with mitigation measures); • Soil erosion (high negative impact before mitigation and low negative impact with mitigation measures); • Impacts of construction activities on the water quality of surface and underground water resources (high negative impact before mitigation and low negative impact with mitigation measures); • Increase in and accumulation of storm water runoff (high negative impact before mitigation and medium negative impact with mitigation measures); • Impact of proposed development activities on identified aquatic wetland Critical Ecological Support Areas ("CESA") (high negative impact before mitigation and medium negative impact with mitigation measures); • Impact on the Kuils River riparian habitat (medium negative impact before mitigation and low negative impact with mitigation measures); • Impact on the naturally occurring terrestrial and aquatic fauna and avifauna occurring on the site and surrounds (high negative impact before mitigation and medium negative impact with mitigation measures); • Impact on the indigenous terrestrial flora present in the area (medium negative impact before mitigation and medium negative impact with mitigation measures); • Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures); • Increased temporary construction job opportunities (medium positive impact) • Traffic impacts due to construction on and along urban roads with high traffic volumes (high negative impact before mitigation and medium negative impact with mitigation measures) • Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures) • Impact of litter or waster form the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures) • The potential impact of the proposed development on archaeological, palaeontological and heritage remains (low negative impact before mitigation and low negative impact with mitigation measures) • Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures) • Impact of construction activities on the surrounding land users/owners and tourist's visual landscape of the area (low negative impact before mitigation and low negative impact with mitigation measures) <p><u>OPERATIONAL PHASE- LAYOUT ALTERNATIVE 2</u></p> <ul style="list-style-type: none"> • Increase in stormwater runoff and accumulation due to cleared and |

| | |
|--------------------|---|
| | <p>transformed/ developed vegetation and wetland areas (high negative impact before mitigation and low negative impact with mitigation measures);</p> <ul style="list-style-type: none"> • Impact on hydrology/flow due to impedance (high negative impact before mitigation and low negative impact with mitigation measures); • Impact of operational and maintenance activities of proposed development on remaining indigenous vegetation and wetland areas (medium negative impact before mitigation and low negative impact with mitigation measures); • Expansion and upgrade of existing road infrastructure within the Belhar – Kuilsrivier area (high positive impact on traffic congestion within the area); • Noise due to traffic along proposed roads (high negative impact before mitigation and medium negative impact with mitigation measures); • Impact of development on the surrounding land users / owners and tourists visual landscape of the area (low negative impact before mitigation and low negative impact with mitigation measures); • Impact on planning policies (low negative impact before mitigation and low negative impact with mitigation measures); <p><u>DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 2</u></p> <ul style="list-style-type: none"> • The decommissioning of the infrastructure developments are not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility. |
| No-go Alternative: | <p><u>CONSTRUCTION PHASE- NO-GO/NO-DEVELOPMENT ALTERNATIVE</u></p> <ul style="list-style-type: none"> • Increased temporary construction job opportunities (medium negative impact as no temporary construction jobs will be created) <p><u>OPERATIONAL PHASE- NO-GO/NO-DEVELOPMENT ALTERNATIVE</u></p> <ul style="list-style-type: none"> • Expansion and upgrade of existing road infrastructure within the Belhar – Kuilsrivier area (high negative significance - ongoing successful services provision and traffic congestion alleviation cannot be ensured/promoted); |

(b) Describe the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed; may cause irreplaceable loss of resources; and can be avoided, managed or mitigated.

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 has to select the relevant impacts identified in blue in the table below for each alternative and repeat the table for each impact and risk).

Note: The EAP may decide to include this section as Appendix J to the BAR.

Refer to Appendix J for Impact Assessment Tables.

(c) Provide a summary of the site selection matrix.

Layout Alternative 1 – Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going underneath the R300.

Reasons why Layout Alternative 1 is not preferred:

- There are existing wetland areas to the east and west of the R300 road and if the proposed new road should be constructed crossing underneath the R300 this will potentially lead to the creation of a “dam” which will require significant stormwater infrastructure developments within the wetland areas.
- Construction underneath the R300 will also cause significant traffic congestion on the R300

during the construction phase.

Layout Alternative 2 - Entails the development of the proposed Erica Drive/Belhar Main Road extension of approximately 3,24km in length going over the R300.

Reasons why Layout Alternative 1 is preferred:

- There are existing wetland areas to the east and west of the R300 road and constructing the new road over the R300 will have the least significant negative impact on the surrounding wetland areas and associated stormwater management impacts.
- Construction over the R300 will also cause less significant traffic congestion on the R300 during the construction phase.

(d) Outcome of the site selection matrix.

Refer to (c) above.

3. SPECIALIST INPUTS/STUDIES, FINDINGS AND RECOMMENDATIONS

Note: Specialist inputs/studies must be attached to this report as **Appendix G** and must comply with the content requirements set out in Appendix 6 of the EIA Regulations, 2014 (as amended). Also take into account the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014, any subsequent Circulars, and guidelines available on the Department's website (<http://www.westerncape.gov.za/eadp>).

Provide a summary of the findings and impact management measures identified in any specialist report and an indication of how these findings and recommendations have been included in the BAR.

Botanical Impact Assessment, November 2017, Eco Impact:

Concluding Remarks and Recommendations

The vegetation and ecology within the study area has been heavily disturbed for a long time, and no significant patches of intact natural vegetation remain within the non-wetland areas. Terrestrial botanical diversity is generally very low compared to what it was prior to human disturbance.

Two vegetation types would originally have been present in the area, all of which are now regarded as threatened on a national basis (one Critically Endangered and one Endangered).

Of the Critically Endangered Cape Flats Sand Fynbos vegetation mainly none to very little indigenous vegetation remains, therefore these areas have been indicated as Low terrestrial botanical sensitivity, presenting no constraints to the proposed development. Loss of this area would be of negligible botanical significance at a regional scale.

The remaining proposed development area represents significantly disturbed secondary Endangered Cape Flats Dune Strandveld vegetation. Limited indigenous vegetation diversity remains within the areas marked as Medium terrestrial botanical sensitivity areas, with no plant Species of Conservation Concern. The loss of the Medium sensitivity vegetation in the study area is likely to be of Medium to Low negative significance at a regional scale, before and after mitigation.

No specific botanical mitigation is required for this project, other than demarcating and restricting the proposed development area throughout the construction phase and ongoing alien invasive vegetation management and removal in the disturbed areas around the development footprints.

It is expected that the proposed development will lead to the clearance of less than 2ha of homogenous indigenous vegetation species and no species of conservation concern.

Although development of the Medium terrestrial botanical sensitivity area has been rated as having a potential Medium negative significance at a regional scale if other factors such as ongoing human disturbances and urban development, alien plant encroachment, low

ecological connectivity etc. are taken into consideration it is believed that the entire proposed development will have a Low negative significance on the terrestrial habitat of the site and surrounds. It is therefore concluded that the proposed development could therefore be authorised without causing significant negative terrestrial botanical impacts.

Summary of recommendations as listed in the report and additional general impact mitigation measures to be implemented:

Planning considerations and constraints-

- The construction and final development footprints should be demarcated and all proposed activities should be restricted to the proposed development area.

Construction, Operational and Rehabilitation phases -

- The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer, both during the construction, operational and decommission/rehabilitation phases.
- Undertake development activities only in identified and specifically demarcated areas as proposed.
- Demarcate no-go areas before any land clearing occurs under the supervision of an ECO. Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase.
- Personnel should be restricted to the construction camp site and immediate construction areas only.
- Remove and conserve topsoil layer and overburden material for rehabilitation after construction activities have ceased
- No construction related disturbance should be allowed within the remaining adjacent indigenous vegetation and wetland areas. This includes no dumping of fill, no roads, and all forms of temporary disturbance.
- Implement site specific erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the development footprint area and surrounds.
- Rehabilitate impacted indigenous vegetation areas outside of the development areas immediately if disturbed with indigenous vegetation species.
- Proper waste bins to be provided during construction and operation and all waste to be regularly (at least once a week) removed to municipal landfill site.
- If any fuel or hazardous materials is spilled on site it must be treated as according to EMP requirements.
- The cement mixing area must be at least 32m away from the edge of the wetlands and is only to take place within demarcated cement mixing area that is impermeable and has a berm so that no cement mix runoff water escapes from cement mixing area.
- The landowner/s must adhere to his/her legal obligations to actively eradicate and manage alien vegetation infestations present on the applicable and surrounding properties.
- Monitor soil erosion on a regular basis and rehabilitate impacted areas as soon as possible under supervision of appointed ECO.
- Storm water discharge flow must be managed and restricted in such a manner that it does not cause erosion.
- Only use topsoil as derived and conserved from the proposed development areas to be rehabilitated after development activities have ceased on the property.
- Only use vegetation indigenous to the area to rehabilitate impacted/decommissioned areas and implement ongoing monitoring of the rehabilitated areas until successful rehabilitation has taken place.
- After topsoil has been replaced ongoing monitoring and removal of alien vegetation regrowth must be conducted to ensure effective rehabilitation of indigenous vegetation.
- Decommissioned areas must be rehabilitated and planted with indigenous vegetation immediately after built structures have been removed.
- Engineered contour structures reinstated and maintained.

- Monitor rehabilitation of areas impacted outside of the proposed development areas or decommissioned areas on a 6 monthly basis until effective/successful rehabilitation has been obtained.
- If erosion is detected during or after rehabilitation implement erosion rectification and preventions measures as guided by an ECO

Eco Impact is of the opinion, and based on the survey and desk study done, that the proposed development activities; if designed and implemented according to the recommendations as provided in this report, will not have an unacceptable significantly negative impact on the environmental aspects of the site and surrounds as assessed in this report.

Freshwater Ecological Impact Assessment, November 2017, Eco Impact:

POTENTIAL IMPACTS ON THE KUILS RIVER

The affected Kuils River area is significantly degraded/transformed and has been channelled. There is also an existing bridge structure located on and next to the proposed bridge/road development over the Kuils River tributary. The overall significance of the potential impacts on the Kuils River is therefore expected to be of low significance due to the existing transformed state of the affected areas.

Proposed Mitigation Measures during Construction, Operational and Decommissioning Phases:

- The construction disturbance zone must be limited to 10m up- and downstream of the end of the new road footprint and this edge must be demarcated on site.
- No work camps or construction phase stockpiling may be located within 50m of the channel of the River or such that construction associated material or waste will flow, blow or leach into the channel.
- Any activities involving cement must be tightly controlled to prevent its passage into the river – uncured cement will increase pH and thus potentially affect ammonia toxicity.
- All refuelling areas must be adequately bunded.

POTENTIAL IMPACTS ON THE WETLANDS

Expansion and dualling of Erica Drive would have the following definite, permanent and irreversible impacts on the identified aquatic ecosystems:

The project layout would result in the complete and portions infilling of Wetlands 1, 2, 3, 4, 7 and 8 as identified and account for permanent encroachment into an total wetland area of approximately 1.23ha of the larger identified wetlands (out of a total wetland area of approximately 4.12ha).

The affected portions of the wetlands would be permanently destroyed. The ecological significance of this loss is considered of **medium negative significance** – a rating that takes account of the existing level of degradation and fragmentation of the system, but also of the rapid rate of degradation of the identified wetlands.

The following impacts are likely to occur within the wetland depressions in the area:

- Degradation as a result of compaction, excavation, passage of vehicles over wetland areas.
- Dumping of construction waste (old tar, paving, rubble) in wetland area.
- Visual degradation associated with litter (e.g. cement bags, litter from workers).
- Permanent destruction of soil function as a result of spillage of oils, fuels other contaminants from refuelling areas.
- Permanent loss of existing wetland habitat due to proposed road developments.

Without mitigation, these measures would be permanent, and would be of medium negative significance, with a medium cumulative significance rating as well, given that they are additional impacts on wetland areas that have already been shrunken as a result of the proposed layout.

Proposed Mitigation Measures during Construction, Operational and Decommissioning Phases:

- Due to the location of the proposed activities being site specific direct mitigation/prevention of

impacts is not possible. It is recommended however that on - or off-site wetland offset mitigation should be implemented, to create seasonally inundated wetland depression habitat of at least the area lost or greater, and of a similar or better quality. The existing wetlands have been completely cut off from all other aquatic ecosystems and are unlikely to play any significant future role in terms of biodiversity conservation. It is therefore recommended that the existing degraded wetland areas that will not be impacted upon be rehabilitated as offset mitigation focus, with allowance made for at least area-for-area wetland replacement and that this be incorporated into the site specific stormwater management structures that must be designed for the proposed development. A wetland ecologist must have input into the final design, extent and landscaping of the recommended wetland offsets and associated stormwater management measures on site.

- The disturbance zone must be kept to a maximum of 10m beyond the edge of the new road – this must be fenced off/demarcated along the full wetland width, using wire fencing and shade cloth and access by personal and machinery beyond the demarcation may not take place, other than for purposes of daily litter collection which must take place on foot.
- Litter must be collected from the abutting wetlands on a daily basis and by foot. All litter must be stored in suitable containers and disposed of at a licensed landfill site on at least a weekly basis.
- No vehicles may be refuelled within 30m of the mapped wetland edges, and any refuelling areas must be appropriately bunded.
- Site camps and areas for the storage of construction equipment and / or waste may not be located within 30m of the edge of any demarcated wetland.
- Construction that requires infilling of a wetland must take place from the terrestrial edge, and not from the wetland edge, to minimise unnecessary damage;
- At the end of construction, allowance must be made for landscaping the area of disturbed wetland abutting the construction area plus a 10m setback area.

RECOMMENDATIONS AND CONCLUDING REMARKS

The Kuils River flows through the proposed Erica Drive dualling from north to south. The freshwater ecological features on the site have been totally modified and channelled. On the site, surrounding land use, the channelling of the river and the existing constructed bridge has resulted in all of the indigenous riparian vegetation being removed from the river and streams. In terms of the importance and sensitivity of the features, the numerous impacts have greatly reduced their species richness and diversity. In order to maintain what remains of the ecological functioning of the systems on the site, it is recommended that construction methodology be provided by the civil contractor to the freshwater ecologist and approval first be granted before construction commences to ensure that the construction activities are mitigated and to prevent any further degradation of the Kuils River. The construction activities must be monitored by an Environmental Control Officer. The pillars of the expanded bridge must be in line with the existing bridge pillars in order to not affect or impact on the existing hydrology or river flow.

Six of the identified wetlands on site will be impacted upon. The impacted wetlands have largely modified wetland integrity as a large loss of natural habitat, biota and basic ecosystem functions has occurred. The Wetland Health Present Ecological Status of the impacted wetlands was assessed to be largely modified and in a moderate ecological importance state and sensitivity.

It is clear that the route will definitely impact, on a permanent basis, on an extent of depression wetlands. The former impacts are not mitigatable, and this report has recommended offset mitigation to account for wetland loss. A no-development alternative is not considered a necessary or useful recommendation to avoid these impacts, taking into account the level of degradation and fragmentation of the affected wetlands, as well as the opportunity for offset mitigation to create a better quality of habitat than that lost.

4. ENVIRONMENTAL IMPACT STATEMENT

Provide an environmental impact statement of the following:

(i) A summary of the key findings of the EIA.

Definite Positive Impacts:

- Temporary employment opportunities (construction)
- Infrastructure provision - alleviating traffic congestion within the affected area.

Potential Negative Impacts:

- Disturbance to subsurface geological layers
- Disturbance to Kuils River riverbed and bank
- Impact of construction work on river hydrology/flow
- Disturbance to wetland depressions and hydrology
- Surface and ground water resources pollution
- Soil erosion
- Impacts of construction activities on the water quality of surface and underground water resources
- Increase in and accumulation of storm water runoff
- Impact of proposed development activities on identified aquatic wetland Critical Ecological Support Areas ("CESA")
- Impact on the Kuils River riparian habitat
- Impact on the naturally occurring terrestrial and aquatic fauna and avifauna occurring on the site and surrounds
- Impact on the indigenous terrestrial flora present in the area
- Introduction of alien and weed plant species
- Traffic impacts due to construction on and along urban roads with high traffic volumes
- Impact of construction workers on local community safety and security
- Impact of litter or waste from the construction site on the surrounding communities
- The potential impact of the proposed development on archaeological, paleontological and heritage remains
- Noise due to construction machinery
- Impact of construction activities on the surrounding land users / owners and tourists visual landscape of the area
- Impact of operational and maintenance activities of proposed development on remaining indigenous vegetation and wetland areas
- Noise due to traffic along proposed roads

The No-Go option will result in the site remaining as it is - degraded vacant municipal land. The proposed activity will result in the expansion of the City's road network, thus alleviating congestion and making areas more accessible. The Municipality is mandated in terms of the PSDF to provide and maintain road infrastructure and networks. The activity is therefore in line with the objectives manifested in the PSDF and local Service Delivery Implementation Plan.

| | | |
|---|-----|----|
| (ii) Has a map of appropriate scale been provided, 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 buffers? | YES | NO |
| (iii) A summary of the positive and negative impacts that the proposed development and alternatives will cause in the environment and community. | | |
| Refer to Section G: 2(a) above. | | |

5. IMPACT MANAGEMENT, MITIGATION AND MONITORING MEASURES

- (a) Based on the assessment, describe the impact management, mitigation and monitoring measures as well as the impact management objectives and impact management outcomes included in the EMPr. The EMPr must be attached to this report as Appendix H.

The key mitigation measures recommended should be impact avoidance. Where adverse impacts cannot reasonably be avoided, the activities should be managed through the effective implementation of the EMP with a strong emphasis on post-construction rehabilitation where required.

Refer to the Impact Assessment tables under Appendix J for list of mitigation measures as proposed for each potential impact assessed as well as the EMP under Appendix H in which all of the proposed mitigation measures have been incorporated.

- (b) Describe any provisions for the adherence to requirements that are prescribed in a Specific Environmental Management Act relevant to the listed activity or specified activity in question.

The proposed activities will require a Water Use License for Section 21 (c) and (i) activities triggered under the National Water Act which will contain additional requirements to be adhered to during the implementation of the proposed activities. These requirements will only be known once the Water Use License have been issued by the Department of Water and Sanitation.

(c) Describe the ability of the applicant to implement the management, mitigation and monitoring measures.

The applicant is ultimately responsible for the implementation of the EA and EMP and the financial cost related thereto. In accordance with the requirements of the EA and EMP, the applicant must ensure that any person acting on their behalf complies with the conditions / specifications contained in this EA, EMP and any other relevant permits/licences/legislation etc. related to the activities. In addition, an Environmental Control Officer must be appointed to review, monitor and report on compliance with the relevant requirements. Thus, if the applicant intends to commence with the proposed and authorised activities he/she must ensure that he/she is able to implement the required management, mitigation and monitoring measures throughout the lifespan of the project.

(d) Provide the details of any financial provisions for the management of negative environmental impacts, rehabilitation and closure of the proposed development.

Unknown at his stage.

(e) Describe any assumptions, uncertainties, and gaps in knowledge which relate to the impact management, mitigation and monitoring measures proposed.

EAP is only knowledgeable with regards to the potential environmental and ecosystems aspects.

Limited knowledge with regard to the potential negative impacts on traffic during the construction phase.

Requirements in terms of the wetland offset areas to be combined with stormwater management measures as proposed by the freshwater ecosystem specialist and potential significance of impacts thereof unknown at this stage.

In undertaking the investigation and compiling this report, the following has been assumed:

- The information provided by the client, specialists and engineers is accurate and unbiased;
- The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the development; and
- Should the proposed project be authorised, the applicant will incorporate the recommendations and mitigation measures outlined in this BAR, the EMP and the EA into the detailed design and construction contract specifications and operational management system for the proposed project.

SECTION H: RECOMMENDATIONS OF THE EAP AND SPECIALISTS

| | | |
|--|--|----|
| (a) In my view as the appointed EAP, the information contained in this BAR and the documentation attached hereto is sufficient to make a decision in respect of the listed activity(ies) applied for. | YES | NO |
| (b) If the documentation attached hereto is sufficient to make a decision, please indicate below whether, in your opinion, the listed activity(ies) should or should not be authorised: | | |
| Listed activity(ies) should be authorised: | YES | NO |
| Provide reasons for your opinion | | |
| <p>This report is only a pre-application basic assessment report and not all potential impacts have been thoroughly assessed i.e. traffic impacts during construction; wetland offset areas as proposed and stormwater management impacts.</p> <p>Comments must also still be obtained from key departments and registered I&APs during the public participation process still to be conducted.</p> <p>Therefore the pre-application basic assessment report documentation is not sufficient to make a decision.</p> | | |
| (c) Provide a description of any aspects that were conditional to the findings of the assessment by the EAP and Specialists which are to be included as conditions of authorisation. | | |
| Project specific aspects and recommendations to be included as conditions of the authorisation will be included here during the final basic assessment report phase. | | |
| (d) If you are of the opinion that the activity should be authorised, please provide any conditions, including mitigation measures that should in your view be considered for inclusion in an environmental authorisation. | | |
| Will be addressed and included within the final basic assessment report | | |
| (e) Please indicate the recommended periods in terms of the following periods that should be specified in the environmental authorisation: | | |
| i. the period within which commencement must occur; | Within 5 years of obtaining Environmental Authorisation | |
| ii. the period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects; | Within 10 years of obtaining Environmental Authorisation | |
| iii. the period for which the portion of the environmental authorisation that deals with non-operational aspects is granted; and | Within 10 years of obtaining Environmental Authorisation | |
| iv. the period for which the portion of the environmental authorisation that deals with operational aspects is granted. | Ongoing maintenance of infrastructure and implementation of EMP until decommissioning. | |

SECTION I: APPENDICES

The following appendices must be attached to this report:

| APPENDIX | | Confirm that Appendix is attached |
|--------------|---|-----------------------------------|
| Appendix A: | Locality map | Y |
| Appendix B: | Site development plan(s) | Y |
| | 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; | Y |
| Appendix C: | Photographs | Y |
| Appendix D: | Biodiversity overlay map | Y |
| Appendix E: | Permit(s) / license(s) from any other Organ of State, including service letters from the municipality. | |
| | Appendix E1: Copy of comment from HWC. | Y |
| 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 in Section C above. | Y |
| Appendix G: | Specialist Report(s) | Y |
| Appendix H : | EMPr | Y |
| Appendix I: | Additional information related to listed waste management activities (if applicable) | NA |
| Appendix J: | If applicable, description of the impact assessment process followed to reach the proposed preferred alternative within the site. | Y |
| Appendix K: | Any Other (if applicable). AppendixK1: EAP CV | Y |

SECTION J: DECLARATIONS

Original signed copies of the declarations to be provided with the Final Basic Assessment Report to be submitted to the Department of Environmental Affairs and Development Planning for a final decision.