Western Cape Government
Environmental Affairs & Development Planning

BASIC ASSESSMENT REPORT

DRAFT 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 HOUSING PROJECT ON ERVEN 7752 AND 1003, LOUWVILLE, VREDENBURG

REPORT TYPE CATEGORY	REPORT REFERENCE NUMBER	DATE OF REPORT
Pre-Application Basic Assessment Report (if applicable)[1]	**3326/18/PA**	04 March 2019
Draft Basic Assessment Report[2]	**3326/18/DBAR**	26 July 2019
~~Final Basic Assessment Report[3] or, if applicable Revised Basic Assessment Report[4] (strikethrough what is not applicable)~~	-	

Notes:

1. 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".

2. 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/F4/9/3326/18**
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 1st 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 1st 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 4th 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

TABLE OF CONTENTS:

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
MMP	Maintenance Management Plan
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

Applicant / Organisation / Organ of State:	Saldanha Bay Municipality		
Contact person:	Municipal Manager		
Postal address:	Private Bag X12, Vredenburg		
Telephone:	022 701 7000	Postal Code:	7380
Cellular:	NA	Fax:	022 715 1518
E-mail:	mun@sbm.gov.za		

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

Name of the EAP organisation:	Eco Impact Legal Consulting (Pty) Ltd		
Person who compiled this Report:	Lauren Abrahams		
EAP Reg. No.:	SACNASP 100126/12		
Contact Person (if not author):	NA		
Postal address:	PO Box 45070, Claremont		
Telephone:	(021) 671 1660	Postal Code:	7735
Cellular:	066 210 9892	Fax:	(021) 671 9967
E-mail:	admin@ecoimpact.co.za		
EAP Qualifications:	B Tech Oceanography: Cape Peninsula University of Technology (2010)		

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.

Ms Lauren Abrahams

Lauren Abrahams has completed her professional registration in terms of section 20(3) (b) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003) as a Candidate Natural Scientist in the field of practice Biological Science (Registration number 100126/12). She obtained her B Tech in Oceanography at the Cape Peninsula University of Technology in 2010.

Lauren has trained as an Environmental Assessment Practitioner since July 2015 and has been involved in the compilation, coordination and management of Basic Assessment Reports, Environmental Impact Assessments, Environmental Management Programmes, Waste Licence Applications, Water Use Licence Applications and Baseline Biodiversity Surveys for numerous clients. ***Refer to Appendix K: EAP CV***

EXECUTIVE SUMMARY OF THE PRE-APPLICATION BASIC ASSESSMENT REPORT:

Saldanha Bay Municipality proposes a housing development and associated infrastructure on erven 7752 and 1003 with a total development area of ±5.122 ha. The development proposes the following:

- ±154 residential erven (±120-160m^2);
- 3 open space erven (±1.1158ha) mainly along the southern border of the site which includes the concrete stormwater channel and its 1:100 year floodline area;
- Creche/church erf (±1989m^2);
- Road erf (±1.5539m^2); access roads to the development will be from Kootjieskloof street (250m from Maclon street) and Maclon street (127m from Kootjieskloof street); Proposed new roads situated in the 16m road reserves will be 5,0m wide, and new roads situated in the 10m road reserves will be 4,5m wide. The 5,0m wide roads will have kerbs installed on both sides, namely CK5 and MK10, while the 4,5m wide roads will have CK5 and edging (90mm).
- Internal Sewer main pipelines will be 160mm diameter uPVC Class 34, with a maximum capacity of 16 l/s; house connections will be 110mm diameter uPVC Pipes;

- Internal Water main pipelines will be 160mm/110mm diameter uPVC Class 12, with a maximum capacity of 17 l/s; house connections will be 25/20mm HDPe pipes;
- Internal underground stormwater pipelines will be 375mm/450mm diameter concrete pipes, with a maximum capacity of 150 l/s, the proposed stormwater system will drain to the existing stormwater concrete canal and connect to the existing canal at three points, the stormwater design will allow for the 1:2 and 1:50 year floods;
- Re-route 300mm diameter existing sewer main pipelines, with a maximum capacity of 100 l/s;
- All proposed infrastructure will connect to existing Municipal infrastructure;
- The 1:50 and 1:100 year floodline areas of the concrete stormwater channel running along the southern border of the site will be excluded as no-go/no-development area for the duration of the construction phase of the development unless activities relate to installation of service and road infrastructure or rehabilitation of disturbed area, and will eventually be fenced as a safety precaution with 2,4m high ClearVu fencing.
- Approximately 2ha of severely degraded and homogenous Saldanha Granite Strandveld indigenous vegetation listed as Endangered will be removed.

See the site development plan located in Appendix B, and for more details on services proposed refer to Pre-liminary Engineer Report Appendix K3 and GLS report located in Appendix K4

Location alternatives – Erven 7752 and 1003 as proposed is the only location alternative assessed.

Development constraints for Erven 7752 and 1003:

- Stormwater channel along the southern border
- Surrounding existing urban developments and cemetery limiting size of developable area
- South and south-eastern areas of site identified as terrestrial Critical Biodiversity Area and Ecological Support Area and contains indigenous vegetation listed as Endangered

Reasons why this is the preferred location alternative:

- The 2012 – 2017 IDP indicated that the demand for housing, especially affordable housing. The SBM's housing waiting list contained 7 501 people on 31 January 2013 of whom 2948 were seeking GAP housing. The waiting list for Vredenburg alone was 1 966 at 31 January 2013. The municipality have developed a Human settlements plan and consultations were conducted in the community on the various types of housing projects planned for the area and the revised plan will be communicated in due future. The housing development is therefore in line with the Human Settlements Plan which is instrumented to complies with the policies of national legislation and policy frameworks concerned with housing and the Western Cape Human Settlement Plan. It is the municipality's aim to develop sustainable human settlements to improve the quality of household life by providing access to adequate accommodation that is suitable, relevant, appropriately located, affordable and fiscally sustainable. When analyzing the reasons people choose to live where they live, the top three priorities are; affordability, is it a safe neighborhood, and is there access to good schools. It is incumbent on us as municipalities to develop housing projects and use schools and other social and economic facilities as anchors for all neighborhood development plans – in that way the current site was highly ranked as a preferred site for the project.
- Within close proximity to existing civil services infrastructure
- Within the urban edge and urban developed area adjacent to existing residential areas.
- Have been earmarked for residential development in the SDF of Saldanha Bay Municipality

Activity alternatives - No other activity alternatives were assessed as no feasible or reasonable activity exists. There is a need for residential and housing within the community of Saldanha Bay and no other alternative activities was assessed as they are not feasible or reasonable.
Please see motivation regarding needs and desirability in section D – 5 above.

Layout alternatives – Layout alternative 1 with a total footprint of ±5.122ha as proposed consists of the following:

- ±154 residential erven (±120-160m^2);
- 3 open space erven (±1.1158ha);
- Creche/church erf (±1989m^2); and
- Associated services infrastructure and roads

Development constraints for layout alternative 1:

- Existing concrete stormwater channel along the southern border of the proposed site.
- 1:50 and 1:100 year floodline areas associated with the channel
- Three channel flow obstructions as identified during the floodline assessment, namely the encased sewer main at station no 267; existing 1/2100 x 900mm culvert crossing at Kootjieskloof; and the foot bridge at HecRas station no 51
- Surrounding existing urban developments and cemetery limiting size of developable area
- South and south-eastern areas of site identified as terrestrial Critical Biodiversity Area and Ecological Support Area which contains indigenous vegetation listed as Endangered

Reasons why layout alternative 1 as proposed is preferred:

- Excludes the 1:50 and 1:100 year floodline areas of the southern stormwater channel from the proposed erven development area as identified by IX Engineers in the floodline assessment
- Excludes most of the area marked as terrestrial CBA and ESA for development along the southern border to be zoned as public open space.
- Creche and church erven have been incorporated into the layout.
- Can connect to existing civil services and road infrastructure on or adjacent to the site.

Technology alternatives - The only technological alternatives assessed and considered, were the use of electricity conservation.

Electricity:

- Use of energy efficient equipment;
- CFL's must be used to save energy cost where possible;

Fluorescent lighting must be used in communal spaces where possible.

Operational alternatives – Operational alternatives were not assessed as they are not feasible or reasonable. The only operational activity applicable to the development relates to maintenance.

The No-Go Option - The No-Go option will result in the site remaining as is. Erven 1003 and 7751 are situated within the urban edge of Vredenburg and have been earmarked for residential development in the SDF of Saldanha Bay Municipality and is therefore ideally situated to alleviate some of the housing needs that exist. If the proposed does not proceed current housing shortage in Vredenburg will persist as is.

Impact Summary

<u>Construction phase:</u>

- Disturbance to subsurface geological layers (**Low impact before mitigation and low impact with mitigation measures**);
- Soil erosion and dust - (**Medium impact before mitigation and low impact with mitigation measures**);
- Diesel and oil spills affecting ground and surface water - (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact of noise on surrounding environment - (**Low impact before mitigation and low impact with mitigation measures**);
- Loss of and impacts on low sensitivity terrestrial indigenous vegetation - (**Medium impact before mitigation and medium impact with mitigation measures**);
- Impact on terrestrial fauna and avifauna occurring on the site and surrounds (**Medium impact before mitigation and low impact with mitigation measures**);

- Impact on terrestrial Critical Biodiversity Areas and Ecological Support Areas (**Medium impact before mitigation and low impact with mitigation measures**);
- Jobs - (**Medium impact (POSITIVE) before mitigation and medium impact (POSITIVE) with mitigation measures**);
- Traffic - (**Medium impact before mitigation and low impact with mitigation measures**);
- Property value and unforeseen opportunity costs - (**Low impact before mitigation and low with mitigation measures**);
- Crime and security - (**Medium impact before mitigation and low impact with mitigation measures**);
- Heritage management - (**Low impact before mitigation and low impact with mitigation measures**).

Operational phase:

- Potential erosion of the site and surrounds due to stormwater flow or flooding (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact of noise on surrounding environment - (**High impact before mitigation and medium impact with mitigation measures**);
- Loss of and impacts on low sensitivity terrestrial indigenous vegetation - (**Low impact before mitigation and low impact with mitigation measures**);
- Impact on terrestrial fauna and avifauna occurring on the site and surrounds - (**Low impact before mitigation and low impact with mitigation measures**);
- Impact on terrestrial Critical Biodiversity Areas and Ecological Support Areas - (**Medium impact before mitigation and low impact with mitigation measures**);
- Traffic - (**Medium impact before mitigation and medium impact with mitigation measures**);
- Property value and unforeseen opportunity costs - (**Low impact before mitigation and low impact with mitigation measures**);
- Crime and security - (**Medium impact before mitigation and low impact with mitigation measures**);
- Increased demand on services - (**Medium impact before mitigation and low impact with mitigation measures**).

Decommissioning phase:

- Similar to impacts associated with construction phase with the added positive impact of the site to be rehabilitated.

SECTION A: PROJECT INFORMATION

1. ACTIVITY LOCATION

Location of all proposed sites:	The housing project is proposed on erven 7752 and 1003, Louwville which is located on the corner of Maclon and Kootjieskloof Streets opposite the existing cemetery and Weston Secondary School.
Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site:	Erf 7752 Erf 1003
Property size(s) in m^2 for each proposed site:	Erf 7752: 39240.5m^2 Erf 1003: 298232.7m^2
Development footprint size(s) in m^2:	±5.1220ha
Surveyor General (SG) 21-digit code for each proposed site:	Erf 7752: C04600140000775200000 Erf 1003: C04600140000100300000

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).

Saldanha Bay Municipality proposes a housing development and associated infrastructure on erven 7752 and 1003 with a total development area of ±5.122 ha. The development proposes the following:

- ±154 residential erven (±120-160m^2);
- 3 open space erven (±1.1158ha) mainly along the southern border of the site which includes the concrete stormwater channel and its 1:100 year floodline area;
- Creche/church erf (±1989m^2);
- Road erf (±1.5539m^2); access roads to the development will be from Kootjieskloof street (250m from Maclon street) and Maclon street (127m from Kootjieskloof street); Proposed new roads situated in the 16m road reserves will be 5,0m wide, and new roads situated in the 10m road reserves will be 4,5m wide. The 5,0m wide roads will have kerbs installed on both sides, namely CK5 and MK10, while the 4,5m wide roads will have CK5 and edging (90mm).
- Internal Sewer main pipelines will be 160mm diameter uPVC Class 34, with a maximum capacity of 16 l/s; house connections will be 110mm diameter uPVC Pipes;
- Internal Water main pipelines will be 160mm/110mm diameter uPVC Class 12, with a maximum capacity of 17 l/s; house connections will be 25/20mm HDPe pipes;
- Internal underground stormwater pipelines will be 375mm/450mm diameter concrete pipes, with a maximum capacity of 150 l/s, the proposed stormwater system will drain to the existing stormwater concrete canal and connect to the existing canal at three points, the stormwater design will allow for the 1:2 and 1:50 year floods;
- Re-route 300mm diameter existing sewer main pipelines, with a maximum capacity of 100 l/s;
- All proposed infrastructure will connect to existing Municipal infrastructure;
- The 1:50 and 1:100 year floodline areas of the concrete stormwater channel running along the southern border of the site will be excluded as no-go/no-development area for the duration of the construction phase of the development unless activities relate to installation of service and road infrastructure or rehabilitation of disturbed area, and will eventually be fenced as a safety precaution with 2,4m high ClearVu fencing.

- Approximately 2ha of severely degraded and homogenous Saldanha Granite Strandveld indigenous vegetation listed as Endangered will be removed.

See the site development plan located in Appendix B, and for more details on services proposed refer to Pre-liminary Engineer Report Appendix K3 and GLS report located in Appendix K4

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,	5 years
(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;	10 years
(iii)	the period that should be granted for the non-operational aspects of the environmental authorisation; and	10 years
(iv)	the period that should be granted for the operational aspects of the environmental authorisation.	Unlimited

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):

Activity No(s):	Provide the relevant **Basic Assessment Listed Activity(ies)** as set out in **Listing Notice 1** (GN No. R. 983) as amended
27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.
Activity No(s):	Provide the relevant **Basic Assessment Listed Activity(ies)** as set out in **Listing Notice 3** (GN No. R. 985) as amended
12	The clearance of an area of 300 square metres or more of indigenous vegetation - **i. Western Cape:** 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; ii. Within critical biodiversity areas identified in bioregional plans.
Activity No(s):	Provide the relevant **Scoping and EIR Listed Activity(ies)** as set out in **Listing Notice 2** (GN No. R. 984) as amended
NOT APPLICABLE	
Activity No(s):	Provide the relevant **Category A Waste Management Activity(ies)** as set out in **List of Waste Management Activities** (GN No. R. 921)
NOT APPLICABLE	
Activity No(s):	Provide the relevant **Category B Waste Management Activity(ies)** as set out in **List of Waste Management Activities** (GN No. R. 921)
NOT APPLICABLE	

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

Category A Listed Activity No(s):	Describe the relevant Category A 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~~
Saldanha Bay Municipality proposes a housing development and associated infrastructure on erven 7752 and 1003 with a total development area of ±5.122 ha. The development proposes the following: • ±154 residential erven (±120-160m^2); • 3 open space erven (±1.1158ha); • Creche/church erf (±1989m^2); • Road erf (±1.5539m^2); ***See the site development plan located in Appendix B.***		
Infrastructure (*e.g.,* roads, power and water supply/ storage) Provide brief description below:	YES	~~NO~~
• Internal Sewer main pipelines will be 160mm diameter uPVC Class 34, with a maximum capacity of 16 l/s; house connections will be 110mm diameter uPVC Pipes; • Internal Water main pipelines will be 160mm/110mm diameter uPVC Class 12, with a maximum capacity of 17 l/s; house connections will be 25/20mm HDPe pipes; • Internal Stormwater pipelines will be 375mm/450mm diameter concrete pipes, with a maximum capacity of 150 l/s; • Re-route 300mm diameter existing sewer main pipelines, with a maximum capacity of 100 l/s All proposed infrastructure will connect to existing Municipal infrastructure. ***Please refer to details of services in Engineering and GLS reports located in Appendices K3 and K4.*** **<u>Roads and Stormwater:</u>** Access roads to the development will be from Kootjieskloof street (250m from Maclon street) and Maclon street (127m from Kootjieskloof street). Proposed new roads situated in the 16m road reserves will be 5,0m wide, and new roads situated in the 10m road reserves will be 4,5m wide. The 5,0m wide roads will have kerbs installed on both sides, namely CK5 and MK10, while the 4,5m wide roads will have CK5 and edging (90mm). See **Annexure C of the Preliminary Engineering Report (Appendix K3)** for proposed street layouts. The geometric design of the project streets will be done in accordance with the recommended design standards. Surface drainage will be accommodated on the streets and will consist of a CK5 kerb. Storm water runoff will be discharged on surface and into kerb inlets will be provided at certain positions. The minimum K- values and vertical design criteria will be according to the normal standards. Road signage should be provided where applicable. The design approach for this project will be based on the following principles: • To optimise the use of in-situ materials. • To provide an appropriate pavement structure for the selected design life. • The design must be economical and cost effective also in terms of maintenace operations. The following pavement structure are envisaged for the new roads but are subject to final design and approval by Saldanha Bay Municipality. **Asphalt surfacing (5,0m wide roads)** • 25mm asphalt surfacing • 125mm G4 base course compacted to 98% MOD AASHTO • 150mm G5 base course compacted to 95% MOD AASHTO • 150mm in-situ material compacted to 93% MOD AASHTO (100% for sand)		

- Precast concrete kerbs, CK5 and MK10.

Asphalt surfacing (4,5m wide roads)
- 25mm asphalt surfacing
- 100mm G4 base course compacted to 98% MOD AASHTO
- 125mm G5 base course compacted to 95% MOD AASHTO
- 150mm in-situ material compacted to 93% MOD AASHTO (100% for sand)
- Precast concrete kerbs, CK5 and edging (90mm wide).

Run-off peaks with return period of the 1:2-year flood frequency will be used in the stormwater run-off calculations to confirm the required pipeline diameters.

The Manning equation for circular pipes and the design flow charts were used to determine the required pipeline diameters and to confirm the capacities required.

Minimum longitudinal slopes play a major role in the design of the capacity of the pipelines, as well as in obtaining self-cleansing velocities to prevent siltation and thus keep maintenance to a minimum. The proposed 375mm Ø underground stormwater pipe system with grid inlets will be constructed to ensure sufficient drainage from the area. The proposed stormwater system will drain to the existing stormwater concrete canal and connect to the existing canal at three points. See **Annexure F of the Preliminary Engineering Report (Appendix K3)** for proposed stormwater layout.

The stormwater design will allow for the 1:2 and 1:50 year floods.

An external stormwater report was completed in regards with the existing canal to determine the 1:50 and 1:100 flood lines along the canal and these areas was excluded from the proposed housing development site.
Please refer to further details of proposed services in Preliminary Engineering Report located in Appendix K3.

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		

1. 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	Erf 7752 = 3.92405 Erf 1003 = 29.82327	ha
(b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken	5.1220	ha
(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)	5.1220	ha

(d) Size of the activity: Indicate the physical size (footprint) of the development proposal	5.1220	ha
(e) For linear development proposals: Indicate the length (L) and width (W) of the development proposal	(L) NA	km
	(W) NA	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:

The proposed development will link on the northern boundary to Kootjieskloof Street.

A southern boundary access to link to the internal road network via Swavel Street is proposed for future potential development.

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).

The propose development site of ±5.12ha is located within a medium dense developed urban setting. The housing project is proposed on erven 7752 and 1003, Louwville which is located on the corner of Maclon and Kootjieskloof Streets opposite the existing cemetery and Weston Secondary School within Louwville residential area. In terms of topography, the site is fairly flat lying with a slight slope down from the west towards the south-east. A portion of the development area has been used for informal recreational sports purposes, and there are existing creche and church erven and a number of established informal gravel vehicle and foot paths throughout the development site which serve as thoroughfare for the neighbouring residents. A concrete stormwater channel runs along the southern boundary of the development site.

The proposed development site is mapped as being within an area supporting Saldanha Granite Strandveld. According to a recent analysis by CapeNature's conservation planner only 27.3% of this vegetation type is remaining. Therefore, Saldanha Granite Strandveld qualifies as an Endangered ecosystem and has very little formal protection. Approximately 2ha of the south and south-eastern section of the site has been mapped as terrestrial CBA. ESA and ESA2, this is due to the botanical sensitivity of the indigenous vegetation originally occurring within this area but also due to the importance of the concrete stormwater channel maintaining its hydrological connectivity and functioning.

It is expected that less than 2ha (but more than 1ha) of indigenous vegetation species (mainly consisting of grass and herbaceous species associated with disturbed veld) will be cleared during the proposed development, which relates to the proposed listed activities.

Coordinates of all proposed sites: Latitude (S)	32°	54'	53.71"
Longitude (E)	18°	0'	26.18"

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).

A concrete stormwater channel is located on the southern boundary of the proposed development area. This area will remain undisturbed with most of this area to be zoned as public open space. As such it is not foreseen that it will be heavily impacted upon by the proposed development (impacts associated have been assessed in the impact tables located in Appendix J of this report).

Photograph 1: Concrete stormwater channel adjacent to the proposed development.

Photograph 2: Concrete stormwater channel adjacent to the proposed development.

Photograph 3: Encased sewer line and footbridge crossing.

Photograph 4: Existing 1/2100 x 900mm culvert crossing at Kootjieskloof Street.

Photograph 5: Footbridge crossing at Kootjieskloof channel.

Take note that a floodline investigation for the affected stormwater channel has been completed and included in Appendix K2 of this report.

The summary and recommendations of the report includes:

The floodlines represent the most severe conditions possible during a 1:50 and 1:100 year return period flood, as it is assumed that the storm will occur over the full catchment and that the stream will convey a peak flood.

According to the survey the low point on Maclon Street is approximately 25m north of the start of the channel. To ensure that the maximum peak flow reaches the existing channel, an open drain or a berm is recommended to divert the overland flow towards the channel. Refer to Drawing 301038-00-SW-DAL-0002-001 in Appendix 2 for position of the drain.

It is recommended that the proposed development be constructed above the expected 1:50 and 1:100 year flood levels and that the floor levels specifically be above the expected 1:100 year flood peak. As a result of the rather steep gradients of the existing channel and the stream vegetation, high flow velocities, above 1.5 m/s, can be expected. This will result in the 1:50 year and 1:100 year floodlines to be quite close to one another. It is thus proposed that the 1:100 year floodlines be used for planning purposes. As a result of the high flow velocities during large interval flood events, erosion on the unlined channel side slopes above the concrete section can be expected. For this reason it

is proposed that these unlined side slopes be protected against erosion by the placing of concrete erosion blocks on geotextile to mitigate this possibility.

It is further recommended that any disturbance of vegetation or soil, below the 1:50 and 1:100 year floodline, during the construction works, be re-vegetated and protected against possible erosion. ***The full report is included in Appendix K2.***

Recommendations of the 1:100 year floodline area to be excluded from the proposed development area has been incorporated into the preferred development layout and additional recommendations as per the floodline report included in the EMPr requirements.

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)		
	32°	54‘	53.71 “	18°	0‘	26.18“
	°	'	"	°	'	"
	°	'	"	°	'	"
	°	'	"	°	'	"

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).

NA						
For linear activities: (See Appendix J)	**Latitude (S):**			**Longitude (E):**		
• 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:	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: • 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). 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. Coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94; WGS84 co-ordinate system.
Site Plan:	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: • 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 the site plan. • 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 must 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): o Watercourses / Rivers / Wetlands - including the 32 meter set back line from the edge of the bank of a river/stream/wetland; o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable; o Ridges; o Cultural and historical features; o 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 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. The GIS shape file for the site development plan(s) must be submitted digitally.

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.

Louwville is a suburb in the town of Vredenburg located in the Saldanha Bay Municipality. The housing project is proposed on erven 7752 and 1003, Louwville which is located on the corner of Maclon and Kootjieskloof Streets opposite the existing cemetery and Weston Secondary School. The site has a relatively flat topography. The western half of the development area has been used for recreational sports purposes, and there are number of established paths throughout the development site which serve as thoroughfare for the neighbouring residents. A concrete stormwater channel runs along the southern boundary of the development site. The eastern portion of the development site is salso everely degraded indigenous vegetation consisting predominantly of grass species, *Oncosiphon suffruticosum* – commonly known as Stinkkruid as well as weeds and scattered aliens throughout the 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.

Soils and Geology:
Land Type: Db299
Soil: Prismacutanic and/or pedocutanic diagnostic horizons dominant, B horizons mainly not red.
Geology: Aeolian sand with limestone and calcrete of the Langebaan Formation and greywacke, phyllite and quartz schist with thin lenses of limestone and grit; Malmesbury Group.
Source: ENPAT. CapeFarmMapper. 28/02/2019. https://gis.elsenburg.com/apps/cfm/#

Soil Clay and Depth:
Symbol: CA
Class: Soils with a strong texture contrast.
Description: Soils with a marked clay accumulation, strongly structured and a non-reddish colour. In addition, one or more of vertic, melanic and plinthic soils may be present.
Depth: >= 750 mm
Clay: < 15%
Source: Department of Agriculture, Forestry and Fisheries. CapeFarmMapper. 28/02/2019. https://gis.elsenburg.com/apps/cfm/#

Soil Erodibility:
Erodibility: High
Erodibility Factor: 0.67
Source: SA Atlas of Climatology and Agrohydrology (R.E. Schulze, 2009). CapeFarmMapper. 28/02/2019. https://gis.elsenburg.com/apps/cfm/#

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/Stornwater Channel	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.

A concrete stormwater channel runs along the southern boundary of the development site.
Take note that a floodline investigation for the affected stormwater channel has been completed and included in Appendix K2 of this report, and that the stormwater channel and its associated

1:100 year floodline area has been excluded from the proposed development area, therefore hydrological functioning of the stormwater channel to continue as is.

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	Approximately 2ha of the south and south-eastern sections of the site is mapped as terrestrial Critical Biodiversity Area, Ecological Support Areas and Ecological Support Area 2 (Restore).			
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)	**CBA Terrestrial** - Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. **Objective** - Maintain in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate. **Observations and Findings on Site** – There are no natural habitat nor flora or fauna species of conservation concern remaining on site, only a concrete storm water channel along the			

	southern border of the site. The stormwater channel and its associated 1:100-year floodline area has been excluded from the proposed development area therefore hydrological functioning of the channel will continue as is. **ESA Terrestrial** - Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services. **Objective** - Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised. **Observations and Findings on Site** – There are no natural habitat nor flora or fauna species of conservation concern remaining on site, only a concrete storm water channel along the southern border of the site. The stormwater channel and its associated 1:100-year floodline area has been excluded from the proposed development area therefore hydrological functioning of the channel will continue as is. **ESA 2 Restore from other land use** - Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services. **Objective** - Restore and/or manage to minimize impact on ecological processes and ecological infrastructure functioning, especially soil and water-related services, and to allow for faunal movement. **Observations and Findings on Site** – There are no natural habitat nor flora or fauna species of conservation concern remaining on site, only a concrete storm water channel along the southern border of the site. The stormwater channel and its associated 1:100-year floodline area has been excluded from the proposed development area therefore hydrological functioning of the channel will continue as is.

(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%	Ha	NA
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	Ha	NA
Degraded (includes areas heavily invaded by alien plants)	100%	5.122ha	Essentially the whole study site can be considered transformed and significantly degraded due to previous and ongoing urban development and associated human activities. The western half of the site was previously cleared for development of the creche and church erven as well as informal sport fields and is mainly covered with returning grass and weed species. Due to the significantly low plant diversity and limited indigenous vegetation species recorded on the
Transformed (includes cultivation, dams, urban, plantation, roads, *etc*.)			

			eastern half of the site it is expected that this area was also previously cleared potentially for intended development. The only significant returning indigenous vegetation species recorded to occur in abundance on the site was Oncosiphon suffruticosum (Stinkkruid), which is also an indication of significantly disturbed veld. No species of conservation concern were recorded on the site and none is expected to occur in viable population numbers on the site or immediate surrounds given the previous disturbance and the current state of the area concerned. The whole site is dominated by weeds, grasses and annual herbaceous species i.e. Stinkkruid with various informal foot- and vehicle paths. The site has no remaining natural vegetation in good condition (i.e. no viable populations of threatened or localised plant species). All ecological processes on the site have been significantly impacted by soil disturbance (excavations, site clearance, urban development etc.), inappropriate fire regimes, loss of pollinators and seed dispersers, alien-, weed- and garden plant invasion, habitat fragmentation due to urban development and the creation of the concrete storm water drainage line along the southern border. The heavily disturbed and isolated site also present a very difficult conservation and/or rehabilitation challenge, and formal conservation or rehabilitation of the site is therefore highly unlikely and not feasible. It is expected that less than 2ha of indigenous vegetation species (mainly consisting of grass and herbaceous species associated with disturbed veld) will be cleared during the proposed development) No indigenous fauna or avifauna species were recorded during the survey and due to the location of the site within an active urban setting as well as the significant transformed state of the natural habitat on site it is not expected that any indigenous fauna or avifauna of conservation concern inhabits this site and may only occasionally visit the site for short periods of time.

(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**
Ecosystem threat status as per the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	~~Critically~~	NA
	Endangered	Saldanha Granite Strandveld Status 2016: EN Status 2014: Endangered (EN) Status 2011: EN
	~~Vulnerable~~	NA
	~~Least Threatened~~	NA

Aquatic Ecosystems		
	Estuary	Coastline

Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands) - Channelled concrete stormwater channel within urban area						
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.

Essentially the whole study site can be considered transformed and significantly degraded due to previous and ongoing urban development and associated human activities.

The western half of the site was previously cleared for development of the creche and church erven as well as informal sport fields and is mainly covered with returning grass and weed species. Due to the significantly low plant diversity and limited indigenous vegetation species recorded on the eastern half of the site it is expected that this area was also previously cleared potentially for intended development. The only significant returning indigenous vegetation species recorded to occur in abundance on the site was Oncosiphon suffruticosum (Stinkkruid), which is also an indication of significantly disturbed veld.

No species of conservation concern were recorded on the site and none is expected to occur in viable population numbers on the site or immediate surrounds given the previous disturbance and the current state of the area concerned. The whole site is dominated by weeds, grasses and annual herbaceous species i.e. Stinkkruid with various informal foot- and vehicle paths.

The site has no remaining natural vegetation in good condition (i.e. no viable populations of threatened or localised plant species). All ecological processes on the site have been significantly impacted by soil disturbance (excavations, site clearance, urban development etc.), inappropriate fire regimes, loss of pollinators and seed dispersers, alien-, weed- and garden plant invasion, habitat fragmentation due to urban development and the creation of the concrete storm water drainage line along the southern border. The heavily disturbed and isolated site also present a very difficult conservation and/or rehabilitation challenge, and formal conservation or rehabilitation of the site is therefore highly unlikely and not feasible.

It is expected that less than 2ha of indigenous vegetation species (mainly consisting of grass and herbaceous species associated with disturbed veld) will be cleared during the proposed development)

No indigenous fauna or avifauna species were recorded during the survey and due to the location of the site within an active urban setting as well as the significant transformed state of the natural habitat on site it is not expected that any indigenous fauna or avifauna of conservation concern inhabits this site and may only occasionally visit the site for short periods of time.

The site is considered to be of low terrestrial botanical/biodiversity sensitivity and conservation value due to the following reasons:

- Significantly low indigenous plant species diversity remaining on site.
- No plant, fauna or avifauna species of conservation concern recorded on site.
- Previous site clearance and developments leading to habitat transformation and fragmentation.
- Ongoing human impacts due to the urban surroundings and developments i.e. school grounds, residential areas, cemetery, informal sport fields, church and creche erven.
- Low terrestrial ecological connectivity opportunities due to isolation of site inside urban developed area.
- Low conservation and/or rehabilitation potential due to transformed state, the location within the urban area, low ecological connectivity value and small size of the site.

It is however important to note that the hydrological functioning of the stormwater channel along the southern border is to be maintained due to the supporting role which it plays in replenishing water resources which in turn maintains ecological functioning of remaining undeveloped areas

surrounding Louwville, therefore this area has been mapped as important to maintain current hydrological functioning. The concrete stormwater channel and its associated 1:100 year floodline area which includes most of the mapped CBA, ESA and ESA2 areas on site have been excluded from the proposed development area (accept for required services infrastructure i.e. the access road which will be along existing access road over the channel) to be maintained as Public Open Space and therefore hydrological functioning of the stormwater channel will be maintained.

Also refer to Appendix G2: Terrestrial Biodiversity Impact Assessment

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):	Concrete stormwater channel and creche			

(a) Provide a description.

The eastern portion (most of erf 1003 which forms part of the development site) is mostly undeveloped although the vegetation on site is significantly transformed and degraded due to previous and ongoing urban environment related impacts. A concrete stormwater channel runs along the southern boundary of the development site.

Erf 7752 is the more developed portion of the development site. There is a church and creche located on the property which borders Maclon Street. The property has numerous established paths through the property which serves as thoroughfare for the residents adjacent to the property. A large portion of erf 7753 is used for informal recreational sports activities.

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 & 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 or 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):~~				

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

Louwville is a suburb in the town of Vredenburg located in the Saldanha Bay Municipality. The housing project is proposed on erven 7752 and 1003, Louwville which is located on the corner of MacIon and Kootjieskloof Streets opposite the existing cemetery and Weston Secondary School.

Adjacent to the development site is:
- North – is the existing Louwville cemetery and residential property.
- West - Weston High School and residential property.
- East - is the church and residential property.
- South - is Louwville High School and residential property.

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.*).

Historically Vredenburg developed from a farming community, with the town of Vredenburg being founded in 1862 when a church was built at a water spring. During 1880, the first government school was built followed by the post office in 1886. A shortage of fresh water slowed the growth of Vredenburg with the town gaining Municipal Status in 1932.

Source: Saldanha Bay Municipality 4th Generation Integrated Development Plan 2017 - 2022.

Introduction

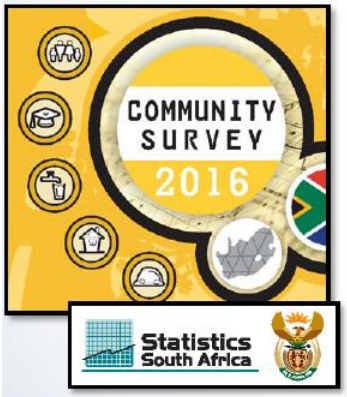
Saldanha Bay Municipality (WC014) is a local municipality located on the West Coast of South Africa, approximately 140 kilometers north of Cape Town. It forms part of the West Coast District Municipality (DC1), situated in the Western Cape Province. The Swartland Municipality borders the municipality in the west by the Atlantic Ocean, in the north by the Bergrivier Municipality and the east.

The Saldanha Bay Municipality covers an area of 2 015 km² (approximately 166 565,48 hectares) and has a coastline of 238km. In total 6.5% of the geographical land are urban land and 93.5% rural land. Overall Saldanha Bay municipality constitutes 6.4% of the entire West Coast geographical land making it the smallest municipal area in the district. The area includes the towns of Hopefield; Langebaan, Saldanha, Jacobsbaai, Vredenburg, Paternoster and St Helenabaai. The administrative office of SBM is located in Vredenburg, with satellite offices in Hopefield, St Helena Bay, Paternoster, Saldanha and Langebaan.

The 2016 Community Survey statistics:

2016 COMMUNITY SURVEY

	Households		Total Population			Youth proportion		Education	Poverty	
	Total	Size	Male	Female	Total	Youth (15-34)	% Youth	Persons > 20 with Grade 12	Head count	Intensity
2011	22835	3,4	49389	49 804	99193	36264	36,6%	24137	2,2%	41,0%
2016	35550	3,1	55584	55588	111173	40696	36,6%	26723	6,7%	45,4%



	Housing							
	Formal		Traditional		Informal		Other	
	Total	%	Total	%	Total	%	Total	%
2011	23564	82%	134	1%	4950	17%	187	1%
2016	26592	75%	835	2%	7855	22%	268	1%

	Water				Sanitation			
	Access to piped water		No access to piped water		Flush/chemical toilet		Other Toilet	
	Total	%	Total	%	Total	%	Total	%
2011	28660	99%	175	1%	27 766	96%	1 068	4%
2016	32063	90%	3487	10%	30496	86%	5055	14%

Population and Age

SBM has the second largest population at 111 173 (2011 Stats: 99 193) in the West Coast District which, according to the 2016 Community Survey conducted by Statistics South Africa. The forecasts of the Western Cape Department of Social Development, is that this total will gradually increase across the 5-year planning cycle and is expected to reach 122 265 by 2023. This equates to an approximate 9.8 % growth off the 2017 base estimate.

The 2016 community results revealed a strong concentration of persons within the age category of 15-34 years at 40 696 in comparison to the 2011 Statistics which reflected a total of 36 264. Whilst the percentage increase remained at 36.6% the in-and-out migration of persons seeking employment and business opportunities will have a significant impact on the municipal services with the realisation of the economic growth and development projects forecasted.

The Western Cape Department of Social Development reflected in the 2016 Socio-Economic Profile that there is an increasing dependency ratio of 44.0, 46.3 and 46.9 for the respective years of 2011, 2017 and 2023. As higher dependency ratios imply greater strain on the working age to support their economic dependents (children and aged), this increase will have far reaching social, economic and labour market implications.

From a national perspective, the relative decrease in the working age population will result in lower tax revenues, pension shortfalls and overall inequality as citizens struggle to tend to the needs of their dependents amidst increased economic hardship. At the municipal level, this decrease will also result in a smaller base from which local authorities can collect revenue for basic services rendered and will necessitate the prioritisation of spending on social services such as education, health and welfare.

Education

Education remains one of the key avenues through which the state is involved in the economy. In preparing individuals for future engagement in the labour market, policy choices and decisions in the sphere of education play a critical role in determining the extent to which future economic and poverty reduction plans can be realised. Saldanha Bay's matric outcomes peaked at 90.5 per in 2013 and levelled out to 87.9 per cent in 2014 and 2015 respectively as per the Western Cape

Education Department, 2016; Annual Survey of Public and Independent Schools (ASS), 2015 Learner enrolment in Saldanha Bay increased at an average annual growth rate of 2.7 per cent between 2013 and 2015, which is an indication that access to education has improved in the Saldanha Bay area and should translate into opportunities for an inclusive society.

The learner teacher ratio within Saldanha Bay was at its lowest in 2012 and deteriorated in 2013 and 2014 to more than 30 learners per teacher. The learner to teacher ratio was at its highest in 2015 at 47.7 learners per teacher which is well above the national standard of 30.3 learners per teacher. Factors influencing the learner teacher ratio is the ability of schools to employ more educators when needed as well as schools struggling to collect fees from their learners are more likely to have high learner teacher ratios.

The drop-out rate for learners within Saldanha Bay that enrolled from grade 10 in 2014 to grade 12 in 2016 was recorded at 29.5 per cent, which is slightly higher than the average drop-out rate for the District (29.2 per cent) over the same period. This might be due to the fact that Saldanha Bay has a very high percentage of no-fee schools in the District, as research indicates that learners often drop-out of school due to lack of money.

Households

The household indicators according to the 2016 Community Survey results reflect as follow:

The annual income for households living within the Saldanha Bay municipal area divided into three categories i.e. the proportion of people that fall within the low, middle and high income brackets. Poor households fall under the low income bracket, which ranges from no income to just of R50000 annually (R4166 per month). An increase in living standards can be evidenced by a rising number of households entering the middle and high income brackets.

Approximately 48.6 per cent of households in Saldanha Bay fall within the low income bracket, of which 14.1 per cent have no income. A sustained increase in economic growth within the Saldanha Bay municipal area is needed if the 2030NDP income target of R110000 per person, per annum is to be achieved.

The Non-Financial Census of Municipalities released by Statistics South Africa in 2016 indicates increases or decreases of indigent households per municipal area between 2014 and 2015.

The Saldanha Bay municipal area experienced an increase in the number of indigents between 2014 and 2015, which implies an increased burden on municipal resources.

Poverty Indicators

The intensity of poverty as well as the poverty headcount is analyzed in this section. The intensity of poverty is measured by calculating the Poverty Gap Index, which is the average poverty gap in the population as a proportion of the poverty line. The Poverty Gap Index estimates the depth of poverty by considering how far, on the average, the poor are from that poverty line. The Poverty Gap Index is a percentage between 0 and 100 per cent. A theoretical value of zero implies that no one in the population is below the poverty line. Individuals whose income is above the poverty line have a gap of zero while individuals whose income is below the poverty line would have a gap ranging from 1 per cent to 100 per cent, with a theoretical value of 100 per cent implying that everyone in the population has an income that is below the poverty line or zero. A higher poverty gap index means that poverty is more severe.

This section also provides information on annual household income for residents living within the Saldanha Bay municipal area. Poverty tends to be prevalent in areas where the majority of households fall within the low income bracket.

The higher poverty headcount shows that the number of poor people within the Saldanha Bay municipal area has increased significantly from 2.2 per cent of Saldanha Bay's population in 2011 to 6.7 per cent of the population in 2016. The increasing poverty headcount is a concern as it may strain municipal financial resources as more households demand free basic services.

The intensity of poverty, i.e., the proportion of poor people that are below the poverty line within the Saldanha Bay municipal area, increased from 41.0 per cent in 2011to 45.4per cent in 2016. This percentage is high and should be dropping towards zero as income of more households within the Saldanha Bay municipal area moves away from the poverty line.

The Economy

Economic growth at the municipal level is essential for the attainment of economic development, the reduction of poverty and improved accessibility. Fostering this growth requires an in-depth understanding of the economic landscape within which each respective municipality operates.

Saldanha Bay comprised R5.86 billion (or 30.56 per cent) of the District's total R19.16 billion GDPR as at the end of 2015. GDP growth averaged 2.95 per cent per annum over the period 2005–2015. This is below the District average of 3.42 per cent. Average annual growth of 2.67per cent in the post-recessionary period remains below the long-term trend but is on par with the District average of 2.75per cent.

Saldanha Bay employed 28 per cent (46330 labourers) of the West Coast District's labour force in in 2015, and employment grew at a moderate rate of 1.7 per cent per annum on average since 2005, which was above the overall district employment growth rate of1.1 per cent per annum. Employment growth has nevertheless picked up significantly in the post–recessionary period (2010-2015) averaging 2.5 per cent per annum-this is on par with the district's employment growth rate of 2.7 per cent per annum over this period. Saldanha Bay has experienced job losses prior to and during the recession, but these jobs have been recovered and approximately 5720(net) additional jobs have been created since 2005(the majority of which has been created post-2010).

The majority of the workforce in Saldanha Bay operates within the semi-skilled (32.50 per cent) and low-skilled sector (32.14 per cent). The semi-skilled sector was the only sector to experience a contraction in employment over the long term (-0.1 per cent per annum over the period 2005 – 2015). Low-skilled employment remained fairly stagnant over the long term, whilst skilled employment (which makes up 13.35 per cent of the municipality's workforce) grew at a moderate rate of 1.9 per cent per annum since 2005. The informal sector (which employs 22 per cent of the municipality's workforce) experienced robust growth of 7.8per cent per annum over the past decade.

Primary Sector - Agriculture, Forestry and Fishing - This sector comprised R887.21 million (or 15.15 per cent) of the Municipality's GDP in 2015. It displayed steady growth of 2.85 per cent for the period 2005 – 2015; growth has nevertheless shown significant improvement in the post-recessionary period (the sector experienced a growth rate of 4.49 per cent per annum over the period 2010 – 2015).

Agriculture, Forestry and Fishing employed 31.77 per cent of the area's workforce. Employment over the period 2005 – 2015 has grown by 0.9 per cent per annum on average. Employment growth nevertheless improved significantly in the late half of the decade (growing at a rate of 4.5 per cent per annum on average since 2010). This growth has however been insufficient with regard to recovering all the jobs lost prior to- and during the recession, and as such, 500 jobs have been lost on net since 2005.

The labour force in the primary sector is characterised by a relatively large proportion of unskilled labour. The majority (43.32 per cent or 6 376 workers) of the workforce in Agriculture, Forestry and Fishing operate within the low-skill sector, which has experienced growth of 4.6 per cent per annum since 2010. The semi-skilled sector employs 32.59 per cent of the industry's workforce and has grown at a rate of 4.4 per cent per annum since 2010. The skilled sector employs the smallest proportion of the municipality's workforce (5.20 per cent or 765 workers). This segment has shown robust growth post-recession (4.7 per cent per annum).

Despite the fast growth since 2010, employment in these three categories has stagnated over the long term (2005 – 2015) and all the jobs lost between 2005 – 2010 have not yet been recovered. The informal sector makes up 18.89 per cent of the industry's workforce and experienced robust long term growth as employment grew by 4.6 per cent per annum over the period 2005 – 2015.

Informal employment growth within the Agriculture, Forestry and Fishing industry remained consistent throughout the last 10 years and the informal sector may have absorbed some of the job losses from the other sectors.

The Secondary Sector – Manufacturing - The manufacturing sector comprised R1.305 billion (or 22.3 per cent) of the Municipality's GDP in 2015, making it the second largest sector in the Saldanha Bay region. The sector has experienced moderate growth of 1.25 per cent per annum on average over the period 2010 – 2015, and fared slightly better over the long term with growth averaging 1.49 per cent per annum since 2005. GDP growth in the manufacturing sector is consistently below the long term overall GDP trend for the region as the sector struggles to fully recover after the recession.

The manufacturing sector employed 10.65 per cent of the area's workforce (making it the 4th largest employer in Saldanha Bay). Employment growth has nevertheless remained constrained over the past decade with a contraction of 0.7 per cent recorded for the period 2005 – 2015. Approximately 778 jobs have been lost on net in Saldanha Bay's manufacturing industry since 2005.

A large number of workers employed in the manufacturing sector are classified as semi-skilled (39.6 per cent) and low-skilled (31.8 per cent). Semi-skilled employment within the manufacturing sector contracted over the last decade, whilst employment within the low-skilled sector contracted by 0.3 per cent per annum since 2005. Only 11.8 per cent of those employed in the manufacturing sector are categorised as skilled workers, and employment growth within this category has remained relatively stagnant since 2005. The informal sector makes up 16.8 per cent of the industry's workforce and experienced robust long term growth as employment grew by 7.2 per cent per annum over the period 2005 – 2015. Informal employment within the manufacturing industry furthermore experienced robust growth of 6.6 per cent per annum post-recession.

Construction - The construction sector comprised R 239.3 million (or 4.08 per cent) of the municipality's GDP in 2015. Construction has nevertheless been the fastest growing industry since 2005, with growth averaging 5.94 per cent per annum. GDP growth has nevertheless slowed since the recession and averaged 1.80 per cent over the period 2010 – 2015 as the sector struggles to fully recover after the recession.

The construction sector employed only 4.96 per cent of the area's workforce in 2015. Employment in the municipality's construction sector has grown by 2.4 per cent per annum since 2005. Approximately 209 jobs have been created on net since 2005, the majority of which were created over the period 2010 – 2015 (where employment growth averaged 1.2 per cent per annum).

The majority (42.4 per cent) of the workers employed in the construction industry operate within the informal sector. Employment growth within this sector has been consistently high since 2005. Low-skilled employment makes up 17.5 per cent and semi-skilled employment makes up 33.1 per cent of the workforce in the construction industry, and employment within both these sectors has contracted over the past decade (with employment contracting the fastest in the latter half of the decade). Workers employed in these sectors who have lost their jobs may have found employment in the informal sector. Skilled employment makes up only 7.1 per cent of the construction industry's workforce, and has grown at a moderate rate of 2.2 per cent per annum over the period 2005 – 2015 (with growth nevertheless stagnating in the post-recessionary period as employment in the sector struggles to recover).

Commercial Services - Commercial services encompass the wholesale & retail trade, catering & accommodation, transport, storage & communication and finance, insurance, real estate & business services industries. This sector comprised R2.404 billion (or 41.0 per cent) of the Municipality's GDP in 2015 (the largest sector in the region). The industry grew at a faster rate than the overall municipality over the period 2005 – 2015 (3.59 per cent compared to the municipal average of 2.95 per cent); growth tapered downward to 2.87 per cent per annum in the post-recessionary (which is above the municipal average over this period).

This sector employed 32.1 per cent of the areas workforce (making it the largest employer). Employment has shown consistent growth throughout the past decade recording a 3.4 per cent

growth rate per annum on average. Employment growth dropped to 2.1 per cent per annum over the period 2010 – 2015 which is below the overall municipal employment growth in the post-recessionary period. On net, 4 027 jobs have been created within the commercial services industry in Saldanha Bay since 2005.

More than a third (35.2 per cent) of the industry's workforce is classified as semi-skilled, while 18.6 per cent is classified as low-skilled and 15.5 per cent is classified as skilled. Employment within the skilled and low-skilled sectors grew at moderate rates of 2.1 per cent and 2.4 per cent per annum since 2005, whilst the semi-skilled sector experienced relatively slower rates of 0.8 per cent over the period 2005 – 2015. Low-skilled employment growth tapered down to 2.0 per cent in the post-recessionary period, whilst skilled employment increased marginally to 1.9 per cent per annum over this period (2010 – 2015). Informal employment within the Commercial services industry makes up a significant portion (30.6 per cent) of the industries workforce and has experienced robust growth of 10.8 per cent per annum since 2005, and lower (but still strong) growth of 4.5 per cent per annum over the last 5 years. The informal sector is responsible for the majority of the new jobs created in the industry.

Government and Community, Social and Personal Services - The general government & community, social and personal services is moderately sized (comprising only 16.1 per cent or R943.63 million of the municipality's overall GDPR in 2015). The industry experienced GDPR growth of 3.61 per cent over the period 2005 – 2015 (and a marginally decreased rate of 3.21 per cent per annum since 2010) making it the third largest contributor to the overall municipal GDP figure within Saldanha Bay.

The industry similarly employs a noteworthy share (20.27 per cent) of the area's workforce and its employment growth over the period 2005 – 2015 averaged 3.4 per cent per annum. Employment growth has slowed since the recession (to 2.8 per cent per annum over the period 2010 - 2015).
A large proportion (39.9 per cent) of the industry's formally employed workforce are classified as low-skilled, while 23.9 per cent fall within the semi-skilled and 24.9 per cent are classified as skilled. Employment in the skilled category grew at 3.0 per cent per annum over the period 2005 - 2015 overall, and has decelerated slightly since the recession (with growth averaging 2.5 per cent per annum over the period 2010 – 2015). Low-skilled employment grew at 2.8 per cent per annum since 2005, with growth tapering off at 2.2 per cent in the post-recessionary period. Semi-skilled employment similarly grew at a rate of 1.9 per cent per annum since 2005, with growth tapering off at 1.6 per cent per annum in the post-recessionary period. The informal sector employed only 11.2 per cent of the industries workforce, but grew at a rate of 17.6 per cent per annum over the period 2005 – 2015 (this growth nevertheless stemming from a small base).

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:	A Notice of Intent to Develop (NID) was submitted to HWC, as the proposed development will change the character of a site "*(i) exceeding 5 000m² in extent*". HWC has provided comment on the submitted HWC NID which states as follows: "You are hereby notified that, since there is no reason to believe that the proposed development of 200 IRDP houses along with associated infrastructure, will not 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 execution of the activities, all works must be stopped immediately and Heritage Western Cape must be notified without delay." The RoD has been included in Appendix E2 of the BAR.		
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	ADMINISTERING AUTHORITY	TYPE Permit/ license/ authorisation/comment / relevant consideration (e.g. rezoning or consent use, building plan approval)	DATE (if already obtained):
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.	N/A
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEMWA] and relevant regulations	Western Cape Department of Environmental Affairs and Development Planning	General duty in respect of waste management and requires that holders of waste follow the waste management hierarchy.	N/A
National Environmental Management: Biodiversity Act 10 of 2004 [NEMBA]	Western Cape Department of Environmental Affairs and Development Planning	N/A	N/A
National Environmental Management: Air Quality Act, 39 of 2004 [NEMAQA] and Relevant Regulations	Western Cape Department of Environmental Affairs and Development Planning	N/A	N/A
National Water Act, 1998 (Act No. 36 of 1998) [NWA] and relevant regulations	Department of Water Affairs	N/A	N/A
Conservation of Agricultural Resources Act, 43 of 1983 [CARA]	National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture	N/A	N/A
National Health Act, 61of 2003 [NHA]		N/A	N/A
Constitution of the Republic of South Africa, 1996 [CRSA]		General application of individual rights of all on and adjacent to the site.	N/A
Fencing Act, 31 of 1963 [FA]		N/A	N/A
National Building Regulations and Building Standards Act 103 of 1977 [NBRBSA] and relevant regulations		N/A	N/A
National Heritage Resources Act 25 of 1999 [NHRA]	Heritage Western Cape South African Heritage Resource Agency	Notice of Intent to Develop	27/11/218
National Veld and Forest Fire Act 101 of 1998 [NVFFA]		N/A	N/A
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	N/A	N/A
Section 42 of Spatial Planning and Land Use Management Act (16 of 2013) ("SPLUMA")	Saldanha Bay Municipality	Rezoning application	N/A
Western Cape Land Use Planning Act, 2014 ("LUPA")	Saldanha Bay Municipality	Rezoning application	N/A

POLICY/ GUIDELINES/BY-LAWS	ADMINISTERING AUTHORITY
EADP 0028/2014 One Environmental Management System	Western Cape Department of Environmental Affairs and Development Planning
Guideline on Need and desirability	The Department of Environmental Affairs (first version published in terms of section 24J of the NEMA in 2014 and second version in 2017)
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
Western Cape Biodiversity Spatial Plan Handbook 2017	CapeNature Western Cape Department of Environmental Affairs and Development Planning

(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	Various general activities, including but not limited to, the control of emergency incidents and the care and remediation of environmental damage.
NEMWA	All waste management activities to be conducted during the development and operational phases of the project to adhere to the requirements of the act and its applicable regulations.
NEMBA	The management and conservation of biological diversity and the sustainable use of indigenous biological resources.
NEMAQA	Activities that may affect the air quality on site and the environment surrounding it.
NWA	Impacts and pollution to ground and surface water. Development within the regulated area in terms of Section 21 c and i.
CARA	Weeds and the tolerance thereof.
National Health Act	Development and operation of a cemetery.
Constitution of the RSA	General application to individual rights of all on and adjacent to the sites.
Fencing Act	The erection and maintenance of fences.
National Building Regulations and Building Standards Act	The erection of new buildings.
NHRA	Development of the site and dealing with graves and burial sites and any structures older than 60 years.
NVFFA	Any activities that could result in the start of veld fires.
FFFARSRA	Activities associated with pest control and the use of agricultural remedies.
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.
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
EADP 0028/2014 One Environmental Management System	The guideline was used to ensure that a holistic approach to the EIA process is followed.

LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS	Describe how the proposed development complies with and responds to:
Western Cape Biodiversity Spatial Plan Handbook 2017	The handbook and the guidelines used therein have been considered in determining the relative environmental/biodiversity impact as a result of the proposed activities associated with the proposal.

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.

1. 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
CapeNature	11/03/2019	25/03/2019	Support with conditions

DEA&DP: Development Management **(Competent Authority)**	15/03/2019	16/04/2019	Support with conditions
DEA&DP: Pollution and Chemicals Management	15/03/2019	15/04/2019	Support with conditions
DEA&DP: Waste Management	15/03/2019	11/04/2019	Support with conditions
Department of Agriculture, Western Cape (Provincial)	18/03/2019	-	-
Department of Human Settlements	11/03/2019	-	-
Department of Water and Sanitation	18/03/2019	-	-
Heritage Western Cape	11/03/2019	-	-
Saldanha Bay Local Municipality	11/03/2019	-	-
West Coast District Municipality	11/03/2019	28/03/2018	Support
Western Cape Department of Health	11/03/2019	04/04/2019	Support

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**).

ACKNOWLEDGEMENT OF THE NOTICE OF INTENT TO DEVELOP AS SUBMITTED TO DEA&DP

Based on the Screening Tool developed by the National Department of Environmental Affairs the proposed site is located within a medium sensitivity area from an agricultural perspective, a low aquatic biodiversity perspective, a high sensitivity civil aviation perspective, a medium sensitivity area from a defence perspective and a very high sensitivity area from a terrestrial biodiversity perspective. The Screening Report must be considered as part of the EIA process. The Screening Report has identified a number of specialist studies to be conducted, it is the responsibility of the Environmental Assessment Practitioner to confirm whether these specialist studies will be conducted or provide a motivation as why the specialist studies will not be conducted as part of the EIA process.

Specialist Assessment Identified by Screening Tool	**EAP Response**
Landscape/Visual Impact Assessment	The proposed development is located with the urban edge and urban developed area as part of the Louwville residential area. Proposed housing structures will be similar to existing surrounding housing developments and will therefore be in line with existing sense of place and visual landscape therefore will not have a significant visual impact and therefore no visual impact assessment is required.
Archaeological and Cultural Heritage Impact Assessment	A notice of intent to develop was submitted to Heritage Western Cape to determine whether any heritage related impact assessments i.e. archaeological, cultural or paleontological were required. Heritage Western Cape replied that no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. Therefore, no heritage related impact assessments are required.
Palaeontology Impact Assessment	A notice of intent to develop was submitted to Heritage Western Cape to determine whether any heritage related impact assessments i.e. archaeological, cultural or paleontological were required. Heritage Western Cape replied

	that no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required. Therefore, no heritage related impact assessments are required.
Terrestrial Biodiversity Impact Assessment	A terrestrial biodiversity impact statement was obtained from a botanical specialist, refer to Appendix G.
Aquatic Biodiversity Impact Assessment	As per the findings of the screening report the site is located within a low aquatic biodiversity perspective. No natural watercourses exist within the site or nearby surrounds only a man-made concrete stormwater channel runs along the southern border of the proposed site. This stormwater channel with its associated 1:100-year floodline area has also been excluded from the proposed housing development area and will continue to function as is. Therefore there will be no significant negative impact on any aquatic biodiversity features and an aquatic biodiversity impact assessment is not required.
Avian Impact Assessment	The proposed development is a housing development located within the urban edge and urban developed area and will be similar to surrounding residential areas and in line with current maximum building heights, therefore a avian impact assessment is not required.
Socio-economic Assessment	Housing opportunities will be created for individuals residing in Saldanha Bay municipal area. The municipality have developed a Human settlements plan and consultations were conducted in the community on the various types of housing projects planned for the area. It is the municipality's aim to develop sustainable human settlements to improve the quality of household life by providing access to adequate accommodation that is suitable, relevant, appropriately located, affordable and fiscally sustainable – in tune with this is the importance of schools in the communities we serve. When analysing the reasons people choose to live where they live, the top three priorities are; affordability, is it a safe neighbourhood, and is there access to good schools. It is incumbent on the municipalities to develop housing projects and use schools and other social and economic facilities as anchors for all neighbourhood development plans – in that way the current site was highly ranked as a preferred site for the project in terms of positive socio-economic opportunities that it will provide. Therefore, a socio-economic assessment will not be conducted.

REGISTRATION PERIOD
HERITAGE WESTERN CAPE

You are hereby notified that, since there is no reason to believe that the proposed development of 200 IRDP houses along with associated infrastructure, will not 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 execution of the activities, all works must be stopped immediately and Heritage Western Cape must be notified without delay.

Manner in which the comments were incorporated:
Recommendations included in EMP requirements.

UNI-FAITH MINISTRIES (NPO 043-825)
We Respect your decision to build houses for the community but we ask that u also consider we as a church who look after the property for 16 years, to include us in your planning & new developments.

Manner in which the comments were incorporated:
It is the intention of the Municipality to retain both the church and the creche currently located on the development area as part of the proposed development. Please refer to Appendix B – SDP which provides a visual perspective of the proposed development.

WESTON HIGH SCHOOL
Die skoolbeheerliggaam van Hoërskool Weston neem kennis van die voorgestelde behuisingsprojek van 200 HOP huise op erwe 7752 en 1003 te Louwville, Vredenburg.

Ons skool is langs die erwe geleë. As verteenwoordigers van die skoolgemeenkskap van Hoërskool Weston, maak ons teen sterkste kapsie teen die ligging van die projek. Ons neem verder aanstoot omdat die voorgestelde behuisingsprojek juis hier beplan word. Enige nugterdenkende persoon met bietjie intellek sal weet wat beteken 200 HOP huise langs drie skole. Ons neem met skok kennis dat die Saldanhabaai Munisipaliteit hierdie ligging vir die projek sou oorweeg, terwyl daar ander ruimtes grensend aan die bestaande HOP behuisingskema vir verdere uitbreiding aangewend kan word.

Ons skool gaan gebuk onder vandalisme, inbrake, leerders wat naskool beroof, aangerand word en dergelike ander sosio-ekonomiese probleme. Die vestiging van HOP behuisingskema langs die skool sal lei tot toename in genoemde probleme. Ons leerdervervoer word daagliks deur sewe busse bedien. "n Toename in verkeer en gepaardgaande geraas gaan steurend inwerk op die daaglikse skoolprogram.

Die skool is geleë in 'n middelklas ekonomiese woonbuurt. Die ouers is bekommerd oor die afgradering van die waarde van hul eiendom sou die behuisingsprojek op die voorgestelde ligging voortgaan. Dit plaas 'n vraagteken oor die rasionaal t.o.v. ligging. Geen HOP behuisingskema sal langs enige gegoede buurt oorweeg word nie.

Ons versoek dat die voorgestelde 200 HOP huise nie op erwe 7752 en 1003, gebou word nie. Ons is in die proses om met die Saldanhabaai Munisipaliteit te onderhandel, oor 'n moontlike sportkompleks vir die skole in Louwville op erwe 7752 en 1003.

Manner in which the comments were incorporated:
Response provided by Mr. Ryan Groenewald – Senior Management Housing, Saldanha Bay Municipality.

The housing project that you are referring to, is identified as the Louwville 200 project where housing opportunities will be created for individuals residing in Saldanha Bay municipal area. The municipality have developed a Human settlements plan and consultations were conducted in the community on the various types of housing projects planned for the area and the revised plan will be communicated in due future. The municipality further would like to express our sincere regrets if

the school was not informed about the processes but as stated the consultation processes were conducted.

It is the municipality's aim to develop sustainable human settlements to improve the quality of household life by providing access to adequate accommodation that is suitable, relevant, appropriately located, affordable and fiscally sustainable – in tune with this is the importance of schools in the communities we serve. When analyzing the reasons people choose to live where they live, the top three priorities are; affordability, is it a safe neighborhood, and is there access to good schools. It is incumbent on us as municipalities to develop housing projects and use schools and other social and economic facilities as anchors for all neighborhood development plans – in that way the current site was highly ranked as a preferred site for the project.

In your email below you are mentioning that the development will have a direct impact to the school without any substantive information and we would like to invite the school to provide us with the details and if there are any challenges you may have, how we can possibly seek ways to address these matters.

SKOENLAPPERTJIE DAGSORG
We would love for you to include us in your Housing Project. Please inform us of the way forward.

Manner in which the comments were incorporated:
It is the intention of the Municipality to retain both the church and the creche currently located on the development area as part of the proposed development. Please refer to Appendix B – SDP which provides a visual perspective of the proposed development.

PRE-APPLICATION PERIOD
CAPENATURE

- The Operational Environmental Management Plan should include requirements for frequent litter and other debris removal from the watercourse to improve water quality and reduce the risk of overtopping and flooding.
- The adjacent open spaces should also be maintained and activities which may cause erosion and other degradation should be prevented so that the space will become of value to the residents.
- Natural vegetation should be allowed to naturally rehabilitate in the open space areas.

Manner in which the comments were incorporated:
Recommendations included in the EMP requirements. With regards to the operation measures as identified – please refer to Actions specified in Goal 3 of the Operational Management Plan. Please refer to the Actions specified in Goal 8 for aspects relating to vegetation management.

DEA&DP: WASTE MANAGEMENT

- Note that the NEM: WA is relevant to the application that it imposes a general duty in respect of waste management and requires that holders of waste follow the waste management hierarchy.
- Please include the need for a service provider to transport waste during the development phase.
- The applicant must adhere to and implement the mitigation measures obtained in the Environmental Management Programme.
- The applicant must ensure that evidence of all disposed contaminated products, waste or residues, which have been generated during construction, is documented.
- Emergency incidents that fall within the definition of section 30(1) 9a) of the National environment Management Act, Act 107 of 1998, must be dealt with as the section requires and the responsible person must ensure containment and notify Ms. Nazeema Duarte, the Environmental Officer of Saldanha Bay Municipality on 0227017116/Nazeema.Duarte@sbm.gov.za as well as the Pollution and Chemicals

Management Directorate of DEA&DP on 021 483 0752/ 2571 / Simon.Botha@westerncape.gov.za.

- Vegetation that has been cleared should be considered to chipping (mulching) or composting.
- On p.29 & 30 of 69 of the EMP it states that construction rubble must be collected and disposed of at a suitable landfill site. Consideration must also be given to the reuse and recycling of construction waste as it is stated on page 34 of 69.

Manner in which the comments were incorporated:

- Section B(11) has been amended to reflect the applicability of the Waste Act accordingly.
- The requirement for a service provider for the transportation of waste during the development phase has been included in the relevant section of the BAR as per the directorate's recommendations.
- Noted.
- The provision has been added to Objective C11 of the construction EMPr.
- The provision has been included in Goal 6 as well as Chapter 8 of the EMPr.
- The provision has been added in Objective C6 and C14 as well as Goal 5 of the EMPr.
- The provision has been included in Objection C9 of the EMPr.

DEA&DP: POLLUTION AND CHEMICALS MANAGEMENT

- The presence of an existing concrete storm water channel along the southern portion of the site is noted. According to the DBAR and supporting documentation, floodline mapping has been undertaken and 1:50 and 1:100-year floodlines associated with the storm water channel mapped for the site. The proposed development, with the exception of limited road and service infrastructure, will remain outside the 1:00 year floodline with the southern portion of the site set aside as Public Open Space erven. Furthermore, floor levels are to be constructed above the 1:100-year flood peak. This approach is supported by the D:PCM along with the implementation of the recommendations outlined in the floodline report compiled by iX engineers, dated 12 November 2018, specifically relating to erosion control measures within the channel and revegetation of disturbed areas below the 1:100 year floodline.
- Given the proximity of the storm water channel to the proposed development, management of runoff from the site is critical. The DBAR and environmental Management Programme ("EMPr") makes reference to storm water management and installation of new storm water infrastructure. Implementation of "goal 3" (page 44) of the EMPr is essential. In addition, it is recommended that as a minimum litter-traps are installed on all storm water outlets, which are to be monitored and cleaned on an ongoing regular basis.
- During the construction phase, it is recommended that the area below the 1:100-year floodline is considered as a "no-go" area unless activities relate to installation of service and road infrastructure or rehabilitation of disturbed area. In addition, it is recommended that no construction material, equipment or waste be stored within close proximity to the storm water channel.
- Clarity must be provided on whether a sewerage pump station is required for the development. If so, the location of the pump station must be clearly indicated on the site layout map. Mechanisms related to the management of spills, pump breakdowns and power outages must be addressed and incorporated into the proposal.
- Provision must be made for measures to be put in place to handle additional sewage and grey water generated by potential backyard dwellers.

Manner in which the comments were incorporated:

- Noted, recommendations as per floodline report has been taken into consideration in layout and EMPr requirements.
- The implementation of litter traps has been included in Goal 3 of the EMPr.
- Agreed, the area to be demarcated as a "no-go" area for the duration of the construction phase of the development unless activities relate to installation of service and road infrastructure or

rehabilitation of disturbed area. This has been included under Objective PD1: Pre-conditions of the EMPr.

- The development falls within the existing Vredenburg gravity drainage area. The recommended position for the sewer connection for proposed development is at the existing 450 mm Ø outfall sewer in Kootjieskloof Street, as shown in Appendix K3. A pump station is therefore not required in terms of this development. The management requirement as indicated is therefore not applicable to the development proposal.
- Backyard dwellings (formal and informal) can not be foreseen as a measurable parameter. Based on the data for the Saldanha Bay region of the people that are on the registered housing database approximately 2.7% live in backyard dwellings. This data however is only for persons on the registered database and does not consider the overall housing demand in the Municipality. Should extensions be made to the houses the homeowners would have to obtain building plans which must be approved by the Municipality. This would allow for legal connection to be made to the existing infrastructure. An assessment of informal structures that may be placed on the premises cannot be determined during the development phase of this development and would be impossible to accurately determine at this stage. According to the GLS Report the infrastructure proposed for the sewer main pipelines have a maximum capacity of 16 l/s. the expected PWWF (Peak Wet Weather Flow) for the development is calculated at 4.26 l/s. The infrastructure will therefore be more than capable of double the expected capacity proposed in terms of this development.

DEA&DP: DEVELOPMENT MANAGEMENT

- A detailed description of the proposed internal roads must be provided. The width and length of the roads along with the width of the road reserve must be provided.
- Page 18 of Appendix F of the draft BAR indicated that an existing creche and church will be incorporated into the proposed development. However, the activity description does not indicate whether the building will be refurbished/upgraded. Clarification is required.
- Although the draft BAR indicates that need and desirability, environmental and adjacent urban constraints have been considered, the design / layout alternatives identified and considered have been poorly described.
- You are therefore required to provide a detailed description of the constraints considered. This must include a description of how the recommendations of the floodline Report (compiled by IX Engineers and dated 12 November 2018) has been incorporated into the preferred layout alternative.
- Reasons as to why the preferred design / layout alternative has been deemed the preferred must be provided.
- The Screening Report (dated 14 November 2018) has identified a number of specialist studies to be conducted. The Environmental Assessment Practitioner was required to confirm whether these specialist studies will be conducted or provide a motivation as to why the specialist studies will not be conducted as part of the EIA process. The motivation must be provided.
- It is noted that the existing sports field will be used for the proposed housing development. An indication of whether the proposed open spaces will compensate for the loss of the sports field must be provided.
- The recommendation of the Floodline report (dated 12 November 2018) has not been included in the draft BAR and EMPr. Please include the recommendation accordingly.
- It is noted that the proposed site is mapped as a Critical Biodiversity Area and the site contains endangered vegetation. However, botanical specialist input has not been provided. The significance rating of the potential botanical impact is therefore premature. You are required to obtain specialist input from a botanist. The botanical specialist's input must be provided in the revised BAR.
- Confirmation of sufficient, spare and unallocated electricity supply must be provided in the BAR.

- A description of the access to the site must be included in the EMPr.
- The EMPr does not specify any "no-go" areas. The recommendations of the floodline report (dated 12 November 2018) must be included in the EMPr.
- The working hours specified in the EMPr are too long and may result in significant noise impacts to nearby residences and community facilities.
- Mitigation measures with respect to dust and noise during the development phase must be included in the EMPr.
- A stormwater management plan, which includes the recommendations of the Floodline Report (dated 01 November 2018) must be included in the EMPr.
- The zoning of the proposed site (i.e. Erven 1003 and 7752) must be provided.

Manner in which the comments were incorporated:

- A detailed description as well as layout of the road has been included in Section A(2)(e) of the BAR. Please see the proposed street layout in Annexure K3 – Engineering Report: Annexure C (page 29).
- The main building will be retained unchanged as part of the development proposal. The two pre-fabricated buildings east of the main building will be demolished.
- The description of alternatives has been amended to provide further details as to the considerations made in terms of the development proposal.
- A detailed description of the constraints as well as the inclusion of the floodline study in the determination of the preferred layout has been provided.
- Reasons as to why the preferred has been selected has been provided.
- Screening Tool Motivations have been provided in section C3 of the BAR
- Yes, public open spaces are provided at the development and additional facilities are available in the vicinity, within 750m from center of development.
- The recommendations of the floodline report have been included in the BAR and EMPr.
- A terrestrial biodiversity impact assessment has been conducted, please refer to Appendix G. The impact assessment under Appendix J has also been amended accordingly. Electricity availability confirmation will be provided in the Final BAR to be submitted to the Department .
- Site access has been added to the description in the EMPr.
- No-go areas have been specified in the EMPr. The recommendations of the floodline study have been included in the EMPr.
- The working hours have been amended according to the Department's recommendation.
- Dust has been dealt with in Objectives C3 and C15; Noise is dealt with in Objectives C1 and C5.
- General operational; stormwater management plan has been included in the EMPr as Annexure A and recommendations of the Floodline Report (dated 1 November) has also been included in the EMPr. As per correspondence received from iX Engineers, "*Stormwater from the proposed Louwville housing development will be managed according to proposals as per the Preliminary Engineering Report 301038 March 2019. The proposed 375mm Ø underground stormwater pipe system with grid inlets will be constructed to ensure sufficient drainage from the area. The proposed stormwater system will drain to the existing stormwater concrete canal and connect to the existing canal at three points. The proposed stormwater layout is attached as Annexure F to the report. The stormwater design will allow for the 1:2 and 1:50 year floods. The detailed design of the stormwater management system for the proposed housing development will be done upon receiving approval for the project from the Housing Department. The current housing development layout has been designed above the expected 1:50 and 1: 100 year flood levels and the floor levels specifically above the 1:100 year flood peak. Therefore as stated in the Floodline Report 301038 November 2018 the current floodlines of the southern stormwater channel have no effect on the proposed housing development and the upgrades as proposed for the southern stormwater channel in the floodline report is not required as part of stormwater management for the 154 erven housing*

development, the housing development as proposed can proceed without implementation of these upgrades. It is however recommended that the upgrades be considered by the Saldanha Bay Municipality for future stormwater management upgrades to be implemented as part of the Vredenburg/Louwville Basic Stormwater Master Plan. A stormwater management plan for the upgrades as proposed within the southern stormwater channel will therefore not be compiled at this stage as it will be included as part of the Vredenburg/Louwville Basic Stormwater Master Plan. Refer to Appendix K6 for a copy of engineer letter as per above and K7 for a copy of the Stormwater master plan for Louwville.

- The zoning of the erven has been indicated in Section D(1) of the BAR, please also refer to the land audit and cadastral report in Appendix K5.

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.

Refer to comments and response report as provided under Appendix F.

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
Erf 1003 is identified as one of the commonage erven of Vredenburg and as the town of Vredenburg grew over the years portions of 1003 was subdivided and alienated to create new neighbourhood blocks, Erf 7752 being one of the portions of Erf 1003. Erf 7752 has an existing land use: existing creche and is zoned as open space zone. Erf 1003 has a current land use: vacant and is zoned as "undetermined". The property is located inside the designated urban edge and identified for residential development in the SDF, but a rezoning approval is needed. Refer to the land audit and cadastral report in Appendix K5.			
2. Will the development be in line with the following?			
(a) Provincial Spatial Development Framework ("**PSDF**").	YES	~~NO~~	Please explain
Residential development on an area included in the urban edge and SDF for residential development. The proposed development is consistent with the PSDF as the application area is vacant and underutilised land.			
(b) Urban edge / edge of **built environment** for the area.	~~YES~~	NO	Please explain
Residential development on an area inside of the urban edge.			
(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 property is located inside the designated urban edge and identified for residential development in the SDF, but a rezoning approval is needed.			
(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 for the 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 environmental authority (in other words, is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	~~NO~~	Please explain
The property is located inside the designated urban edge and identified for residential development in the SDF, but a rezoning approval is needed.			
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
The property is located inside the designated urban edge and identified for residential development in the SDF, but a rezoning approval is needed.			
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
The 2012 – 2017 IDP indicated that the demand for housing, especially affordable housing. The SBM's housing waiting list contained 7 501 people on 31 January 2013 of whom 2948 were seeking GAP housing. The waiting list for Vredenburg alone was 1 966 at 31 January 2013. The municipality have developed a Human settlements plan and consultations were conducted in the community on the various types of housing projects planned for the area and the revised plan will be communicated in due future. The housing development is therefore in line with the Human Settlements Plan which is instrumented to complies with the policies of national legislation and policy frameworks concerned with housing and the Western Cape Human Settlement Plan. It is the municipality's aim to develop sustainable human settlements to improve the quality of household life by providing access to adequate accommodation that is suitable, relevant, appropriately located, affordable and fiscally sustainable. When analyzing the reasons people choose to live where they live, the top three priorities are; affordability, is it a safe neighborhood, and is there access to good schools. It is incumbent on us as municipalities to develop housing projects and use schools and other social and economic facilities as anchors for all neighborhood development plans – in that way the current site was highly ranked as a preferred site for the project.			
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

There is sufficient available services available for the proposed development. Please refer to services confirmation in Appendix E1 and the GLS report I Appendix K4.			
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
There is sufficient available services available for the proposed development. Please refer to services confirmation in Appendix E1 and the GLS report I Appendix K4.			
8. Is this project part of a **national programme** to address an issue of national concern or importance?	YES	~~NO~~	~~Please explain~~
The 2012 – 2017 IDP indicated that the demand for housing, especially affordable housing. The SBM's housing waiting list contained 7 501 people on 31 January 2013 of whom 2948 were seeking GAP housing. The waiting list for Vredenburg alone was 1 966 at 31 January 2013. The housing development is therefore in line with the Human Settlements Plan which is instrumented to complies with the policies of national legislation and policy frameworks concerned with housing and the Western Cape Human Settlement Plan.			
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 property is located inside the designated urban edge and identified for residential development in the SDF, but a rezoning approval is needed. The development will link to municipal services that have the capacity to service the development.			
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
See Section 6(e) above which describes the receiving environment in relation to the sensitive areas on and adjacent to the development site.			
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
The proposed development will provide new housing for the current community of Saldanha Bay residence on the housing waiting list and formal housing for people living in informal structures/ backyard dwellers. Temporary nuisances such as noise, vehicular movement, dust etc. will be produced during the construction phase. Thereafter, during the operational phase the impacts will be similar to that occurring in the existing residential areas adjacent to the site. The visual character of the land will change from degraded natural and agricultural land to residential, which will be mitigated by designing the proposed development as according to existing architectural and layout characteristics of Louwville to blend in with adjacent urban developed areas.			
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~~
Development cost will be for the government in terms of subsidised housing and Municipal Infrastructure development.			
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?			
The expansion of the town will result in cumulative impacts associated with residential development in the area, such as vehicle traffic and services. The necessary services and road infrastructure can however accommodate these impacts.			
14. Is the development the **best practicable environmental option** for this land/site?	~~YES~~	NO	Please explain
Although there is some degree of vegetation loss expected by the proposed development, due to the surrounding built up nature of the suburb of Louwville the proposed site is ideal for the purposes proposed. It is not foreseen that the loss in vegetation would cause fragmentation of sever loss to biodiversity due to its location in the landscape.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The property is included in the Saldanha Bay urban edge and Municipality SDF, but rezoning is required. The development will impact positively on people's health and well-being as the development is for the development of houses and infrastructure for which there is a great need in the 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:			
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 included and written into the EMP.

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 as 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 – Erven 7752 and 1003 as proposed is the only location alternative assessed.

Development constraints for Erven 7752 and 1003:

- Stormwater channel along the southern border
- Surrounding existing urban developments and cemetery limiting size of developable area
- South and south-eastern areas of site identified as terrestrial Critical Biodiversity Area and Ecological Support Area and contains indigenous vegetation listed as Endangered

Reasons why this is the preferred location alternative:

- The 2012 – 2017 IDP indicated that the demand for housing, especially affordable housing. The SBM's housing waiting list contained 7 501 people on 31 January 2013 of whom 2948 were seeking GAP housing. The waiting list for Vredenburg alone was 1 966 at 31 January 2013. The municipality have developed a Human settlements plan and consultations were

conducted in the community on the various types of housing projects planned for the area and the revised plan will be communicated in due future. The housing development is therefore in line with the Human Settlements Plan which is instrumented to complies with the policies of national legislation and policy frameworks concerned with housing and the Western Cape Human Settlement Plan. It is the municipality's aim to develop sustainable human settlements to improve the quality of household life by providing access to adequate accommodation that is suitable, relevant, appropriately located, affordable and fiscally sustainable. When analyzing the reasons people choose to live where they live, the top three priorities are; affordability, is it a safe neighborhood, and is there access to good schools. It is incumbent on us as municipalities to develop housing projects and use schools and other social and economic facilities as anchors for all neighborhood development plans – in that way the current site was highly ranked as a preferred site for the project.

- Within close proximity to existing civil services infrastructure
- Within the urban edge and urban developed area adjacent to existing residential areas.
- Have been earmarked for residential development in the SDF of Saldanha Bay Municipality

It is for the reasons above that no other property alternative has been considered in terms of this application.

(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:

No other activity alternatives were assessed as no feasible or reasonable activity exists. There is a need for residential and housing within the community of Saldanha Bay and no other alternative activities was assessed as they are not feasible or reasonable.
Please see motivation regarding needs and desirability in section D – 5 above.

(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 – Layout alternative 1 with a total footprint of ±5.122ha as proposed consists of the following:

- ±154 residential erven (±120-160m^2);
- 3 open space erven (±1.1158ha);
- Creche/church erf (±1989m^2); and
- Associated services infrastructure and roads

Development constraints for layout alternative 1:

- Existing concrete stormwater channel along the southern border of the proposed site.
- 1:50 and 1:100 year floodline areas associated with the channel
- Three channel flow obstructions as identified during the floodline assessment, namely the encased sewer main at station no 267; existing 1/2100 x 900mm culvert crossing at Kootjieskloof; and the foot bridge at HecRas station no 51
- Surrounding existing urban developments and cemetery limiting size of developable area
- South and south-eastern areas of site identified as terrestrial Critical Biodiversity Area and Ecological Support Area which contains indigenous vegetation listed as Endangered

Reasons why layout alternative 1 as proposed is preferred:

- Excludes the 1:50 and 1:100 year floodline areas of the southern stormwater channel from the proposed erven development area as identified by IX Engineers in the floodline assessment
- Excludes most of the area marked as terrestrial CBA and ESA for development along the southern border to be zoned as public open space.
- Creche and church erven have been incorporated into the layout.
- Can connect to existing civil services and road infrastructure on or adjacent to the site.

(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:

The only technological alternatives assessed and considered, were the use of electricity conservation.

Electricity:

- Use of energy efficient equipment;
- CFL's must be used to save energy cost where possible;
- Fluorescent lighting must be used in communal spaces where possible.

(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 were not assessed as they are not feasible or reasonable. The only operational activity applicable to the development relates to maintenance.

(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 is. Erven 1003 and 7751 are situated within the urban edge of Vredenburg and have been earmarked for residential development in the SDF of Saldanha Bay Municipality and is therefore ideally situated to alleviate some of the housing needs that exist. If the proposed does not proceed current housing shortage in Vredenburg will persist as is.

(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:

N/A

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

Location alternatives – Erven 7752 and 1003 as proposed is the only location alternative assessed.

Development constraints for Erven 7752 and 1003:

- Stormwater channel along the southern border
- Surrounding existing urban developments and cemetery limiting size of developable area
- South and south-eastern areas of site identified as terrestrial Critical Biodiversity Area and Ecological Support Area and contains indigenous vegetation listed as Endangered

Reasons why this is the preferred location alternative:

- The 2012 – 2017 IDP indicated that the demand for housing, especially affordable housing. The SBM's housing waiting list contained 7 501 people on 31 January 2013 of whom 2948 were seeking GAP housing. The waiting list for Vredenburg alone was 1 966 at 31 January 2013. The municipality have developed a Human settlements plan and consultations were conducted in the community on the various types of housing projects planned for the area and the revised plan will be communicated in due future. The housing development is therefore in line with the Human Settlements Plan which is instrumented to complies with the policies of national legislation and policy frameworks concerned with housing and the Western Cape Human Settlement Plan. It is the municipality's aim to develop sustainable human settlements to improve the quality of household life by providing access to adequate accommodation that is suitable, relevant, appropriately located, affordable and fiscally sustainable. When analyzing the reasons people choose to live where they live, the top three priorities are; affordability, is it a safe neighborhood, and is there access to good schools. It is incumbent on us as municipalities to develop housing projects and use schools and other social and economic facilities as anchors for all neighborhood development plans – in that way the current site was highly ranked as a preferred site for the project.

- Within close proximity to existing civil services infrastructure
- Within the urban edge and urban developed area adjacent to existing residential areas.
- Have been earmarked for residential development in the SDF of Saldanha Bay Municipality

Activity alternatives - No other activity alternatives were assessed as no feasible or reasonable activity exists. There is a need for residential and housing within the community of Saldanha Bay and no other alternative activities was assessed as they are not feasible or reasonable.
Please see motivation regarding needs and desirability in section D – 5 above.

Layout alternatives – Layout alternative 1 with a total footprint of ±5.122ha as proposed consists of the following:

- ±154 residential erven (±120-160m^2);
- 3 open space erven (±1.1158ha);
- Creche/church erf (±1989m^2); and
- Associated services infrastructure and roads

Development constraints for layout alternative 1:

- Existing concrete stormwater channel along the southern border of the proposed site.
- 1:50 and 1:100 year floodline areas associated with the channel
- Three channel flow obstructions as identified during the floodline assessment, namely the encased sewer main at station no 267; existing 1/2100 x 900mm culvert crossing at Kootjieskloof; and the foot bridge at HecRas station no 51
- Surrounding existing urban developments and cemetery limiting size of developable area
- South and south-eastern areas of site identified as terrestrial Critical Biodiversity Area and Ecological Support Area which contains indigenous vegetation listed as Endangered

Reasons why layout alternative 1 as proposed is preferred:

- Excludes the 1:50 and 1:100 year floodline areas of the southern stormwater channel from the proposed erven development area as identified by IX Engineers in the floodline assessment
- Excludes most of the area marked as terrestrial CBA and ESA for development along the southern border to be zoned as public open space.
- Creche and church erven have been incorporated into the layout.
- Can connect to existing civil services and road infrastructure on or adjacent to the site.

Technology alternatives - The only technological alternatives assessed and considered, were the use of electricity conservation.

Electricity:

- Use of energy efficient equipment;
- CFL's must be used to save energy cost where possible;

Fluorescent lighting must be used in communal spaces where possible.

Operational alternatives – Operational alternatives were not assessed as they are not feasible or reasonable. The only operational activity applicable to the development relates to maintenance.

The No-Go Option - The No-Go option will result in the site remaining as is. Erven 1003 and 7751 are situated within the urban edge of Vredenburg and have been earmarked for residential development in the SDF of Saldanha Bay Municipality and is therefore ideally situated to alleviate some of the housing needs that exist. If the proposed does not proceed current housing shortage in Vredenburg will persist as is.

(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.

Saldanha Bay Municipality proposes a housing development and associated infrastructure on erven 7752 and 1003 with a total development area of ±5.122 ha. The development proposes the following:

- ±154 residential erven (±120-160m^2);
- 3 open space erven (±1.1158ha) mainly along the southern border of the site which includes the concrete stormwater channel and its 1:100 year floodline area;
- Creche/church erf (±1989m^2);
- Road erf (±1.5539m^2); access roads to the development will be from Kootjieskloof street (250m from Maclon street) and Maclon street (127m from Kootjieskloof street); Proposed new roads situated in the 16m road reserves will be 5,0m wide, and new roads situated in the 10m road reserves will be 4,5m wide. The 5,0m wide roads will have kerbs installed on both sides, namely CK5 and MK10, while the 4,5m wide roads will have CK5 and edging (90mm).
- Internal Sewer main pipelines will be 160mm diameter uPVC Class 34, with a maximum capacity of 16 l/s; house connections will be 110mm diameter uPVC Pipes;
- Internal Water main pipelines will be 160mm/110mm diameter uPVC Class 12, with a maximum capacity of 17 l/s; house connections will be 25/20mm HDPe pipes;
- Internal underground stormwater pipelines will be 375mm/450mm diameter concrete pipes, with a maximum capacity of 150 l/s, the proposed stormwater system will drain to the existing stormwater concrete canal and connect to the existing canal at three points, the stormwater design will allow for the 1:2 and 1:50 year floods;
- Re-route 300mm diameter existing sewer main pipelines, with a maximum capacity of 100 l/s;
- All proposed infrastructure will connect to existing Municipal infrastructure;
- The 1:50 and 1:100 year floodline areas of the concrete stormwater channel running along the southern border of the site will be excluded as no-go/no-development area for the duration of the construction phase of the development unless activities relate to installation of service and road infrastructure or rehabilitation of disturbed area, and will eventually be fenced as a safety precaution with 2,4m high ClearVu fencing.
- Approximately 2ha of severely degraded and homogenous Saldanha Flats Strandveld indigenous vegetation listed as Endangered will be removed.

****See the site development plan located in Appendix B, for more details on services proposed refer to GLS report located in Appendix K4***

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 action will not have a significant adverse cumulative effect on topography, slopes, soils and groundwater resources, if operational and construction mitigation measures are implemented. The proposed development will not be a potential source of contamination to the underlying groundwater and will cause no significant degradation of the potable drinking water supply.

(b) Ecological aspects:

Will the proposed development and its alternatives have an impact on CBAs or ESAs?	YES	~~NO~~

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.		

Approximately 2ha of the south and south-eastern sections of the site is mapped as terrestrial Critical Biodiversity Area, Ecological Support Areas and Ecological Support Area 2 (Restore).

CBA Terrestrial - Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
Objective - Maintain in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.
Observations and Findings on Site – There are no natural habitat nor flora or fauna species of conservation concern remaining on site, only a concrete storm water channel along the southern border of the site. The stormwater channel and its associated 1:100-year floodline area has been excluded from the proposed development area therefore hydrological functioning of the channel will continue as is.

ESA Terrestrial - Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.
Objective - Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.
Observations and Findings on Site – There are no natural habitat nor flora or fauna species of conservation concern remaining on site, only a concrete storm water channel along the southern border of the site. The stormwater channel and its associated 1:100-year floodline area has been excluded from the proposed development area therefore hydrological functioning of the channel will continue as is.

ESA 2 Restore from other land use - Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.
Objective - Restore and/or manage to minimize impact on ecological processes and ecological infrastructure functioning, especially soil and water-related services, and to allow for faunal movement.
Observations and Findings on Site – There are no natural habitat nor flora or fauna species of conservation concern remaining on site, only a concrete storm water channel along the southern border of the site. The stormwater channel and its associated 1:100-year floodline area has been excluded from the proposed development area therefore hydrological functioning of the channel will continue as is.

The site is considered to be of low terrestrial botanical/biodiversity sensitivity and conservation value due to the following reasons:

- Significantly low indigenous plant species diversity remaining on site.
- No plant, fauna or avifauna species of conservation concern recorded on site.
- Previous site clearance and developments leading to habitat transformation and fragmentation.
- Ongoing human impacts due to the urban surroundings and developments i.e. school grounds, residential areas, cemetery, informal sport fields, church and creche erven.
- Low terrestrial ecological connectivity opportunities due to isolation of site inside urban developed area.
- Low conservation and/or rehabilitation potential due to transformed state, the location within the urban area, low ecological connectivity value and small size of the site.

It is however important to note that the hydrological functioning of the stormwater channel along the southern border is to be maintained due to the supporting role which it plays in replenishing water resources which in turn maintains ecological functioning of remaining undeveloped areas surrounding Louwville, therefore this area has been mapped as important to maintain current hydrological functioning. The concrete stormwater channel and its associated 1:100 year floodline area which includes most of the mapped CBA, ESA and ESA2 areas on site have been excluded from the proposed development area (accept for required services infrastructure i.e. the access

road which will be along existing access road over the channel) to be maintained as Public Open Space and therefore hydrological functioning of the stormwater channel will be maintained.

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~~

Essentially the whole study site can be considered transformed and significantly degraded due to previous and ongoing urban development and associated human activities.

The western half of the site was previously cleared for development of the creche and church erven as well as informal sport fields and is mainly covered with returning grass and weed species. Due to the significantly low plant diversity and limited indigenous vegetation species recorded on the eastern half of the site it is expected that this area was also previously cleared potentially for intended development. The only significant returning indigenous vegetation species recorded to occur in abundance on the site was *Oncosiphon suffruticosum* (Stinkkruid), which is also an indication of significantly disturbed veld.

No species of conservation concern were recorded on the site and none is expected to occur in viable population numbers on the site or immediate surrounds given the previous disturbance and the current state of the area concerned. The whole site is dominated by weeds, grasses and annual herbaceous species i.e. Stinkkruid with various informal foot- and vehicle paths.

The site has no remaining natural vegetation in good condition (i.e. no viable populations of threatened or localised plant species). All ecological processes on the site have been significantly impacted by soil disturbance (excavations, site clearance, urban development etc.), inappropriate fire regimes, loss of pollinators and seed dispersers, alien-, weed- and garden plant invasion, habitat fragmentation due to urban development and the creation of the concrete storm water drainage line along the southern border. The heavily disturbed and isolated site also present a very difficult conservation and/or rehabilitation challenge, and formal conservation or rehabilitation of the site is therefore highly unlikely and not feasible.

It is expected that less than 2ha of indigenous vegetation species (mainly consisting of grass and herbaceous species associated with disturbed veld) will be cleared during the proposed development)

No indigenous fauna or avifauna species were recorded during the survey and due to the location of the site within an active urban setting as well as the significant transformed state of the natural habitat on site it is not expected that any indigenous fauna or avifauna of conservation concern inhabits this site and may only occasionally visit the site for short periods of time.

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~~	NO

NA

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

Removal of terrestrial vegetation identified as a CBA and EAS will impact on biological aspects within the development area.

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.
N/A

(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?	Unknown	
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?	± 30	
What is the expected value of the employment opportunities during the development phase?	Unknown	
What percentage of this will accrue to previously disadvantaged individuals?	90%	
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?	Unknown	
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:

A Notice of Intent to Develop was submitted to the HWC. Should any human remains be disturbed, exposed or uncovered during excavations and earthworks for the proposed project, all work must cease and immediately be reported to HWC.

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?	$50m^3$ – Inert $1m^3$ – Contaminated soil $10m^3$ – Construction waste	
Construction and operational waste will be generated. Construction waste will consist of construction waste and possible contaminated soil as result of leaking or re-fuelling of construction vehicles. Inert and access soil waste will be recycled where possible on site for the levelling of the road foundations. Contaminated soil, tar and other construction waste that cannot be reused will be disposed at a licensed waste disposal facility.		

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?	Domestic Waste - ± 10 m^3/month	

Operational waste (hazardous and general) will be waste generated during the operations. All waste will link to Saldanha Bay Municipal Waste Management services and the waste will be transported by the municipality to their landfill site. Waste that cannot be reused must be disposed of at licensed waste management facilities. Refer to the EMP operational section for list of possible operational wastes to be generated and the management and disposal thereof.

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?	Domestic Waste - ± 10 m^3/month	
No treatment. Operational waste (hazardous and general) will be waste generated during the operations. All waste will link to Saldanha Bay Municipal Waste Management services and the waste will be transported by the municipality to their landfill site. Waste that cannot be reused must be disposed of at licensed waste management facilities. A services provider would be required for the transportation of waste required to be disposed of at a registered waste facility during the development phase of the project. Refer to the EMP operational section for list of possible operational wastes to be generated and the management and disposal thereof.		
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?		
N/A		
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?	No	
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:
Standard EMP waste management requirements to reduce, reuse or recycle waste must be promoted and implemented as far as feasibly and reasonably 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?	N/A	
Describe the emissions in terms of type and concentration and how these will be avoided/managed/treated/mitigated:		
N/A		

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:	N/A	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.		

NA

(d) Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water:

The use of municipal water for construction and operation must as far as reasonably practicable is to be done in accordance with Circular C1 of 2018: Water Crisis Response Guidelines for the Western Cape.

4. POWER SUPPLY

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

Eskom via municipal grid.

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

N/A

5. ENERGY EFFICIENCY

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

Energy efficient street lighting, energy efficient lighting inside homes.

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

Solar power energy solution will be part of the development as far as reasonably practicable and feasible. Please take note that this is a Municipal project which would be subject to strict budget constraints and limitations.

6. TRANSPORT, TRAFFIC AND ACCESS

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

The proposed development will link on the northern boundary to Kootjieskloof Street.

A southern boundary access to link to the internal road network via Swavel Street is proposed for future potential development.

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

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

Noise

Additional noise due to construction activities and associate operational phase of the proposed development are expected to be produced, however construction noise will only be temporary and all possible mitigation measures will be implemented as per the requirements of the EMP to minimise noise production as far as possible. Noise levels produced during the construction and operational phases 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 Affair's 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 mitigatibility

	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.

(c) Please describe the underlying assumptions.

In undertaking the investigation and compiling this report, the following have 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. have 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:	**Impact Summary** **Construction phase:** • Disturbance to subsurface geological layers (**Low impact before mitigation and low impact with mitigation measures**); • Soil erosion and dust - (**Medium impact before mitigation and low impact with mitigation measures**); • Diesel and oil spills affecting ground and surface water - (**Medium impact before mitigation and low impact with mitigation measures**); • Impact of noise on surrounding environment - (**Low impact before mitigation and low impact with mitigation measures**); • Loss of and impacts on low sensitivity terrestrial indigenous vegetation - (**Medium impact before mitigation and medium impact with mitigation measures**); • Impact on terrestrial fauna and avifauna occurring on the site and surrounds (**Medium impact before mitigation and low impact with mitigation measures**); • Impact on terrestrial Critical Biodiversity Areas and Ecological Support Areas (**Medium impact before mitigation and low impact with mitigation measures**); • Jobs - (**Medium impact (POSITIVE) before mitigation and medium impact (POSITIVE) with mitigation measures**); • Traffic - (**Medium impact before mitigation and low impact with mitigation measures**); • Property value and unforeseen opportunity costs - (**Low impact before mitigation and low with mitigation measures**);

	• Crime and security - (**Medium impact before mitigation and low impact with mitigation measures**); • Heritage management - (**Low impact before mitigation and low impact with mitigation measures**). **<u>Operational phase:</u>** • Potential erosion of the site and surrounds due to stormwater flow or flooding (**Medium impact before mitigation and low impact with mitigation measures**); • Impact of noise on surrounding environment - (**High impact before mitigation and medium impact with mitigation measures**); • Loss of and impacts on low sensitivity terrestrial indigenous vegetation - (**Low impact before mitigation and low impact with mitigation measures**); • Impact on terrestrial fauna and avifauna occurring on the site and surrounds - (**Low impact before mitigation and low impact with mitigation measures**); • Impact on terrestrial Critical Biodiversity Areas and Ecological Support Areas - (**Medium impact before mitigation and low impact with mitigation measures**); • Traffic - (**Medium impact before mitigation and medium impact with mitigation measures**); • Property value and unforeseen opportunity costs - (**Low impact before mitigation and low impact with mitigation measures**); • Crime and security - (**Medium impact before mitigation and low impact with mitigation measures**); • Increased demand on services - (**Medium impact before mitigation and low impact with mitigation measures**). **<u>Decommissioning phase:</u>** • Similar to impacts associated with construction phase with the added positive impact of the site to be rehabilitated.
No-go Alternative:	The No-Go option will result in the site remaining as is. Erven 1003 and 7751 are situated within the urban edge of Vredenburg and have been earmarked for residential development in the SDF of Saldanha Bay Municipality and is therefore ideally situated to alleviate some of the housing needs that exist. If the proposed does not proceed current housing shortage in Vredenburg will persist as is.

(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 the assessment of impacts related to the proposed development and related activities.

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

The property and layout were the only alternative considered against the no-go alternative based on the motivation provided as per Section E.

(d) Outcome of the site selection matrix.

Location alternatives – Erven 7752 and 1003 as proposed is the only location alternative assessed.

Development constraints for Erven 7752 and 1003:

- Stormwater channel along the southern border
- Surrounding existing urban developments and cemetery limiting size of developable area

- South and south-eastern areas of site identified as terrestrial Critical Biodiversity Area and Ecological Support Area and contains indigenous vegetation listed as Endangered

Reasons why this is the preferred location alternative:

- The 2012 – 2017 IDP indicated that the demand for housing, especially affordable housing. The SBM's housing waiting list contained 7 501 people on 31 January 2013 of whom 2948 were seeking GAP housing. The waiting list for Vredenburg alone was 1 966 at 31 January 2013. The municipality have developed a Human settlements plan and consultations were conducted in the community on the various types of housing projects planned for the area and the revised plan will be communicated in due future. The housing development is therefore in line with the Human Settlements Plan which is instrumented to complies with the policies of national legislation and policy frameworks concerned with housing and the Western Cape Human Settlement Plan. It is the municipality's aim to develop sustainable human settlements to improve the quality of household life by providing access to adequate accommodation that is suitable, relevant, appropriately located, affordable and fiscally sustainable. When analyzing the reasons people choose to live where they live, the top three priorities are; affordability, is it a safe neighborhood, and is there access to good schools. It is incumbent on us as municipalities to develop housing projects and use schools and other social and economic facilities as anchors for all neighborhood development plans – in that way the current site was highly ranked as a preferred site for the project.
- Within close proximity to existing civil services infrastructure
- Within the urban edge and urban developed area adjacent to existing residential areas.
- Have been earmarked for residential development in the SDF of Saldanha Bay Municipality

Activity alternatives - No other activity alternatives were assessed as no feasible or reasonable activity exists. There is a need for residential and housing within the community of Saldanha Bay and no other alternative activities was assessed as they are not feasible or reasonable.
Please see motivation regarding needs and desirability in section D – 5 above.

Layout alternatives – Layout alternative 1 with a total footprint of ±5.122ha as proposed consists of the following:

- ±154 residential erven (±120-160m^2);
- 3 open space erven (±1.1158ha);
- Creche/church erf (±1989m^2); and
- Associated services infrastructure and roads

Development constraints for layout alternative 1:

- Existing concrete stormwater channel along the southern border of the proposed site.
- 1:50 and 1:100 year floodline areas associated with the channel
- Three channel flow obstructions as identified during the floodline assessment, namely the encased sewer main at station no 267; existing 1/2100 x 900mm culvert crossing at Kootjieskloof; and the foot bridge at HecRas station no 51
- Surrounding existing urban developments and cemetery limiting size of developable area
- South and south-eastern areas of site identified as terrestrial Critical Biodiversity Area and Ecological Support Area which contains indigenous vegetation listed as Endangered

Reasons why layout alternative 1 as proposed is preferred:

- Excludes the 1:50 and 1:100 year floodline areas of the southern stormwater channel from the proposed erven development area as identified by IX Engineers in the floodline assessment
- Excludes most of the area marked as terrestrial CBA and ESA for development along the southern border to be zoned as public open space.
- Creche and church erven have been incorporated into the layout.
- Can connect to existing civil services and road infrastructure on or adjacent to the site.

Technology alternatives - The only technological alternatives assessed and considered, were the use of electricity conservation.

Electricity:

- Use of energy efficient equipment;
- CFL's must be used to save energy cost where possible;

Fluorescent lighting must be used in communal spaces where possible.

Operational alternatives – Operational alternatives were not assessed as they are not feasible or reasonable. The only operational activity applicable to the development relates to maintenance.

The No-Go Option - The No-Go option will result in the site remaining as is. Erven 1003 and 7751 are situated within the urban edge of Vredenburg and have been earmarked for residential development in the SDF of Saldanha Bay Municipality and is therefore ideally situated to alleviate some of the housing needs that exist. If the proposed does not proceed current housing shortage in Vredenburg will persist as is.

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.

Terrestrial Biodiversity Impact Assessment. July 2019. Eco Impact

Identification and Assessment of Potential Terrestrial Biodiversity Impacts

The biodiversity impacts will be both direct and indirect, although the latter (habitat fragmentation, loss of ecological connectivity) will be less significant for this project than the direct impacts. Construction phase impacts will be both permanent and long term.

In the case of this project the primary construction phase impact is loss of indigenous terrestrial vegetation species in a significantly transformed habitat within the development footprint. All development located within the proposed development footprint area will result in the permanent loss of that vegetation. It is assumed that the disturbance will be restricted to the footprint areas shown in Figure 2, and that is what is assessed here.

(See Appendix B attached for Impact Assessment Methodology used)

Construction Phase Terrestrial Biodiversity Impacts:

Nature of potential impact: Loss of and impacts on low sensitivity terrestrial indigenous vegetation
Discussion: The habitat loss is deemed to be permanent (>15 years). The original vegetation type occurring within the area is Saldanha Granite Strandveld listed as Endangered. However the site has no remaining natural vegetation in good condition (i.e. no viable populations of threatened or localised plant species). All ecological processes on the site have been significantly impacted by soil disturbance (excavations, site clearance, urban development etc.), inappropriate fire regimes, loss of pollinators and seed dispersers, alien-, weed- and garden plant invasion, habitat fragmentation due to urban development and the creation of the concrete storm water drainage line along the southern border. The heavily disturbed and isolated site also present a very difficult conservation and/or rehabilitation challenge, and formal conservation or rehabilitation of the site is therefore highly unlikely and not feasible. No loss of high sensitivity habitat or plant species of conservation concern will take place as a result of this proposed development; however habitat will be lost and therefore a medium impact on processes is expected to occur.
Cumulative impacts: Habitat fragmentation and loss of ecological connectivity.
Mitigation:

- The southern concrete stormwater channel and its associated 1:100 year floodline area are to be demarcated as a "no-go" area for the duration of the construction phase of the development unless activities relate to installation of service and road infrastructure or rehabilitation of disturbed area.
- No construction related disturbance should be allowed outside of the proposed development 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 to prevent (or if prevention is not possible limit) any erosion from occurring on the development footprint area and surrounds.

Criteria	**Without Mitigation**	**With Mitigation**
Extent	2	1
Duration	5	5
Magnitude	4	4
Probability	5	5
Significance	55 - Medium	50 - Medium
Status	Medium Negative Significance without Mitigation	Medium Negative Significance with Mitigation
Reversibility	100% Reversible	100% Reversible
Irreplaceable loss of resources	2-Partial loss of resource will occur	2-Partial loss of resource will occur
Degree to which impact can be mitigated	2 – Cannot be completely mitigated	

Nature of potential impact:
Impact on terrestrial fauna and avifauna occurring on the site and surrounds

Discussion:
No loss of high sensitivity habitat or fauna or avifauna Species of Conservation Concern will take place as a result of this proposed development.

Cumulative impacts:
Habitat fragmentation and loss of ecological connectivity.

Loss of; and impacts on Low Sensitivity terrestrial fauna and avifauna habitat.

Which in turn will lead to potential displacement of fauna and avifauna species inhabiting/visiting the site.

No indigenous fauna or avifauna species were recorded during the survey and due to the location of the site within an active urban setting as well as the significant transformed state of the natural habitat on site it is not expected that any indigenous fauna or avifauna of conservation concern inhabits this site and may only occasionally visit the site for short periods of time.

Mitigation:
- The southern concrete stormwater channel and its associated 1:100 year floodline area are to be demarcated as a "no-go" area for the duration of the construction phase of the development unless activities relate to installation of service and road infrastructure or rehabilitation of disturbed area.
- No construction related disturbance should be allowed outside of the proposed development 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 to prevent (or if prevention is not possible limit) any erosion from occurring on the development footprint area and surrounds.

Criteria	**Without Mitigation**	**With Mitigation**

Extent	2	1
Duration	5	5
Magnitude	4	2
Probability	5	5
Significance	55 - Medium	40 – Low
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation
Reversibility	100% Reversible	100% Reversible
Irreplaceable loss of resources	2-Partial loss of resource will occur	2-Partial loss of resource will occur
Degree to which impact can be mitigated	2 – Cannot be completely mitigated	

Nature of potential impact:
Impact on terrestrial Critical Biodiversity Areas and Ecological Support Areas

Discussion:
As can be seen from Figure 2 in the report approximately 2ha of the south and south-eastern sections of the site is mapped as terrestrial Critical Biodiversity Area, Ecological Support Areas and Ecological Support Area 2 (Restore).

There are no natural habitat nor flora or fauna species of conservation concern remaining on site, only a concrete storm water channel along the southern border of the site.

The hydrological functioning of the stormwater channel along the southern border is to be maintained due to the supporting role which it plays in replenishing water resources which in turn maintains ecological functioning of remaining undeveloped areas surrounding Louwville, therefore this area has been mapped as important to maintain current hydrological functioning. The concrete stormwater channel and its associated 1:100 year floodline area which includes most of the mapped CBA, ESA and ESA2 areas on site have been excluded from the proposed development area (accept for required services infrastructure i.e. the access road which will be along existing access road over the channel) to be maintained as Public Open Space and therefore hydrological functioning of the stormwater channel will be maintained

Cumulative impacts:
Habitat fragmentation and loss of ecological connectivity associated with mapped CBAs and ESAs.

Mitigation:
- The southern concrete stormwater channel and its associated 1:100 year floodline area are to be demarcated as a "no-go" area for the duration of the construction phase of the development unless activities relate to installation of service and road infrastructure or rehabilitation of disturbed area.
- No construction related disturbance should be allowed outside of the proposed development 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 to prevent (or if prevention is not possible limit) any erosion from occurring on the development footprint area and surrounds.

Criteria	**Without Mitigation**	**With Mitigation**
Extent	2	1
Duration	5	5
Magnitude	4	2
Probability	5	5
Significance	55 - Medium	40 – Low
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation

Reversibility	100% Reversible	100% Reversible
Irreplaceable loss of resources	2-Partial loss of resource will occur	2-Partial loss of resource will occur
Degree to which impact can be mitigated	2 – Cannot be completely mitigated	

Operational Phase Terrestrial Biodiversity Impacts:

Nature of potential impact:
Potential erosion of the site and surrounds due to stormwater flow or flooding

Discussion:
Soil erosion which can occur due to overland storm water flow and flooding should heavy rains fall.

Cumulative impacts:
Exposing soil may lead to erosion of site and surrounds if not mitigated.

Mitigation:
- Disturbed and open space areas must be rehabilitated and planted with indigenous vegetation to promote rehabilitation.
- If erosion is detected implement erosion rectification and preventions measures as guided by an ECO
- Frequent (three monthly and/or after heavy rains) litter and debris removal from the stormwater channels must be conducted to prevent potential flooding, erosion and improve water quality.

Criteria	**Without Mitigation**	**With Mitigation**
Extent	3	1
Duration	5	1
Magnitude	6	2
Probability	4	2
Significance	56 - Medium	8 - Low
Status	Medium Negative	Low Negative (Acceptable)
Reversibility	100%	100%
Irreplaceable loss of resources	2-Partial loss of resources but can be rehabilitated	1 – Resource will not be lost
Degree to which impact can be mitigated	1 – Can be completely mitigated	

Nature of potential impact:
Impact on terrestrial Critical Biodiversity Areas and Ecological Support Areas

Discussion:
The hydrological functioning of the stormwater channel along the southern border is to be maintained due to the supporting role which it plays in replenishing water resources which in turn maintains ecological functioning of remaining undeveloped areas surrounding Louwville.

Cumulative impacts:
Habitat fragmentation and loss of ecological connectivity associated with mapped CBAs and ESAs.

Mitigation:
- Disturbed and open space areas must be rehabilitated and planted with indigenous vegetation to promote rehabilitation.
- If erosion is detected implement erosion rectification and preventions measures as guided by an ECO
- Frequent (three monthly and/or after heavy rains) litter and debris removal from the stormwater channels must be conducted to prevent potential flooding, erosion and improve water quality.

Criteria	

	Without Mitigation	With Mitigation
Extent	3	1
Duration	5	1
Magnitude	6	2
Probability	4	2
Significance	56 - Medium	8 - Low
Status	Medium Negative	Low Negative (Acceptable)
Reversibility	100%	100%
Irreplaceable loss of resources	2-Partial loss of resources but can be rehabilitated	1 – Resource will not be lost
Degree to which impact can be mitigated	1 – Can be completely mitigated	

Decommissioning/Rehabilitation Phase:

Nature of potential impact: Potential erosion of the site and surrounds during rehabilitation phase
Discussion: Decommissioning (i.e. demolishing developed structures) could lead to soil erosion which can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should heavy rains fall.
Cumulative impacts: Exposing soil may lead to erosion of site and surrounds if not mitigated.
Mitigation: • 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 area on a 6 monthly basis until effective/successful rehabilitation has been obtained. • If erosion is detected implement erosion rectification and preventions measures as guided by an ECO

Criteria	Without Mitigation	With Mitigation
Extent	3	1
Duration	5	1
Magnitude	6	2
Probability	4	2
Significance	56 - Medium	8 - Low
Status	Medium Negative	Low Negative (Acceptable)
Reversibility	100%	100%
Irreplaceable loss of resources	2-Partial loss of resources but can be rehabilitated	1 – Resource will not be lost
Degree to which impact can be mitigated	1 – Can be completely mitigated	

No-Go Alternative

The status quo would appear to be ongoing active loss of habitat due to ongoing human activities associated within the urban setting of the site.

Given this variability it is thus difficult to generalise about the No Go impact, and to infer likely future impacts. On balance, assuming continuation of the status quo, it is likely that the No Go alternative will have a Neutral to Medium negative botanical impact.

1. 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 site or immediate surrounds. Terrestrial botanical diversity is very low to non existent.

Essentially the whole study site can be considered transformed and significantly degraded due to previous and ongoing urban development and associated human activities.

The original vegetation type occurring within the area is Saldanha Granite Strandveld listed as Endangered. However the site has no remaining natural vegetation in good condition (i.e. no viable populations of threatened or localised plant species). All ecological processes on the site have been significantly impacted by soil disturbance (excavations, site clearance, urban development etc.), inappropriate fire regimes, loss of pollinators and seed dispersers, alien-, weed- and garden plant invasion, habitat fragmentation due to urban development and the creation of the concrete storm water drainage line along the southern border. The heavily disturbed and isolated site also present a very difficult conservation and/or rehabilitation challenge, and formal conservation or rehabilitation of the site is therefore highly unlikely and not feasible.

It is expected that less than 2ha of indigenous vegetation species (mainly consisting of grass and herbaceous species associated with disturbed veld) will be cleared during the proposed development)

No indigenous fauna or avifauna species were recorded during the survey and due to the location of the site within an active urban setting as well as the significant transformed state of the natural habitat on site it is not expected that any indigenous fauna or avifauna of conservation concern inhabits this site and may only occasionally visit the site for short periods of time.

No specific botanical mitigation is required for this project, other than demarcating and restricting the proposed development from impacting negatively on the hydrological functioning of southern stormwater channel.

As can be seen from Figure 2 in the report approximately 2ha of the south and south-eastern sections of the site is mapped as terrestrial Critical Biodiversity Area, Ecological Support Areas and Ecological Support Area 2 (Restore).

There are no natural habitat nor flora or fauna species of conservation concern remaining on site, only a concrete storm water channel along the southern border of the site.

The hydrological functioning of the stormwater channel along the southern border is to be maintained due to the supporting role which it plays in replenishing water resources which in turn maintains ecological functioning of remaining undeveloped areas surrounding Louwville, therefore this area has been mapped as important to maintain current hydrological functioning. The concrete stormwater channel and its associated 1:100 year floodline area which includes most of the mapped CBA, ESA and ESA2 areas on site have been excluded from the proposed development area (accept for required services infrastructure i.e. the access road which will be along existing access road over the channel) to be maintained as Public Open Space and therefore hydrological functioning of the stormwater channel will be maintained.

Although development of the Low terrestrial botanical sensitivity area previous mapped as Endangered Saldanha Granite Strandveld 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 biodiversity features of the site and surrounds. If is therefore concluded that the proposed development could therefore be authorised without causing significant negative terrestrial biodiversity 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 and outside of any no-go areas identifeed.

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.
- The southern concrete stormwater channel and its associated 1:100 year floodline area are to be demarcated as a "no-go" area for the duration of the construction phase of the development unless activities relate to installation of service and road infrastructure or rehabilitation of disturbed area.
- No construction related disturbance should be allowed outside of the proposed development areas. This includes no dumping of fill, no roads, and all forms of temporary disturbance.
- 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
- 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.
- 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 stormwater channel 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 or flooding.
- Frequent (three monthly and/or after heavy rains) litter and debris removal from the stormwater channels must be conducted to prevent potential flooding, erosion and improve water quality.
- 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.

Phase 1 Geotechnical Site Investigation. February 2019. Core Geotechnical Investigations

Executive Summary

The investigated site is roughly a triangular-shaped piece of land approximately 5.1 ha in area, located in the Vredenburg suburb of Louwville. It is bordered by Klooitjieskloof Street to the north, Maclons Street to the west and Louwville High School to the south. The site is currently undeveloped. Vegetation consists of mostly small shrubs, grasses and weeds. In terms of topography, the site is fairly flat lying with a slight slope down from the west towards the south-east. A stormwater channel lies to the south of the site and forms the boundary between Louwville High School and the investigated site. The general geology of the area consists primarily of Tertiary Aged consolidated and unconsolidated limestone and lime rich sands (calcretes) overlain by sand and sandy soils. There are scattered outcrops of course grained porphyritic Vredenburg Granite (550-500 Ma) within the surrounding area, but these are not found within the site boundaries. Fill encountered across the entire site comprises gravelly clayey sand and variable amounts of builders and domestic waste. The waste is however mostly scattered and is generally less than 10 % of the fill profile. The fill ranges from 0.30 m deep (in test pit TP1) to approximately 0.8 m (in TP4) deep. Gravelly and clayey sands of transported origin underlie the fill and extend to a depth in excess of 2.90 m below ground level (bgl). The transported soils are relatively granular and coarse grained near surface increasing in clay content and becoming more clayey with depth. Residual soils and rock were not encountered on site. With depth, weathered residual granite soils and granite rock can be expected. Groundwater was encountered in TP2 at a depth of 2.8 m bgl. TP2 was located in the south-western corner of the site and is near the stormwater channel indicated earlier. The water in TP2 is potentially seepage from the nearby channel. Groundwater was not encountered in any of the other test pits. Highly compressible sandy fill soils are expected to have an impact on subsidy housing development and subsidy variations. A schedule of generic subsidy variations applicable to the site is outlined in Table 6.2. The Residential Site Class Designation (after Watermeyer & Tromp and the Joint Structural Division) is set out in Table 7.1. The entire site is classified as P(fill)/S/H, that is, compressible sandy fill material which in turn overlie moderately compressible sandy and clayey transported soils. This Phase 1 geotechnical site investigation indicates that the site is broadly suitable for project linked subsidy housing development, provided that aspects of concern relating to the geotechnical character of the site are addressed.

Foundation recommendations and solutions

The following founding options may be considered for single and possibly double storey structures with a bearing pressure not exceeding 120 kPa:

a) Found using strip foundations at approximately 0.50 - 1.0 m bgl in medium dense to dense soils. Settlement should not exceed 10 mm with a maximum allowable bearing pressure of 120 kPa. Surface beds may be founded conventionally on compacted sub-grade at terrace level after the removal of any unsuitable fill.

b) Structures could be founded using stiffened concrete raft foundations, founded at nominal depth on recompacted clayey sands (transported) and suitable recompacted fill soils. Rafts can be expected to reduce differential movement, depending on raft stiffness. Settlement of raft structures are raft type, stiffness and bearing pressure depended. The maximum allowable bearing pressure for raft foundations is 80 kPa.

Drainage

Close attention to drainage and the effective collection and disposal of storm water run-off is required throughout the site, as part of surface erosion management. Roads should also be constructed with adequate drainage to minimize the possible deleterious effects of seasonal shallow perched ground water and surface water run-off and to prevent deterioration of the upper layer works (base course and sub base layers). This may include subsurface drainage in low-lying

areas, or where shallow groundwater is anticipated unless levels can be raised sufficiently to ensure that shallow groundwater is kept well below road layer works. Further measures that need to be considered include grading of slopes to promote run-off and discourage ponding of water around buildings and effective collection and disposal of storm water and water from down pipes.

Special precautionary measures
Apart from the measures outlined above, and relating to fill treatment, roadbed sub-grade, drainage and foundation design, no special precautions with regard to infrastructure design are considered to be required.

Conclusions
The Phase 1 geotechnical site investigation indicates that the site is suitable for project linked subsidy housing development, although some design precautions will need to be considered in view of the nature of the site, including the presence of uncontrolled fill and compressible sandy soils.

Floodline Report for Proposed Development of Erf 7752 and Portion of Erf 1003. November 2018. iX Engineers

SUMMARY AND RECOMMENDATIONS
The floodlines represent the most severe conditions possible during a 1:50 and 1:100 year return period flood, as it is assumed that the storm will occur over the full catchment and that the stream will convey a peak flood.

According to the survey the low point on Maclon Street is approximately 25m north of the start of the channel. To ensure that the maximum peak flow reaches the existing channel, an open drain or a berm is recommended to divert the overland flow towards the channel. Refer to Drawing 301038-00-SW-DAL-0002-001 for position of the drain.

It is recommended that the proposed development be constructed above the expected 1:50 and 1:100 year flood levels and that the floor levels specifically be above the expected 1:100 year flood peak. As a result of the rather steep gradients of the existing channel and the stream vegetation, high flow velocities, above 1.5 m/s, can be expected. This will result in the 1:50 year and 1:100 year floodlines to be quite close to one another. It is thus proposed that the 1:100 year floodlines be used for planning purposes. As a result of the high flow velocities during large interval flood events, erosion on the unlined channel side slopes above the concrete section can be expected. For this reason it is proposed that these unlined side slopes be protected against erosion by the placing of concrete erosion blocks on geotextile to mitigate this possibility.

It is further recommended that any disturbance of vegetation or soil, below the 1:50 and 1:100 year floodline, during the construction works, be re-vegetated and protected against possible erosion.

CONCLUSION
Any enquiries with regards to flood levels can be referred directly to iX engineers.

4. ENVIRONMENTAL IMPACT STATEMENT

Provide an environmental impact statement of the following:

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

Impact Summary
Construction phase:

- Disturbance to subsurface geological layers (**Low impact before mitigation and low impact with mitigation measures**);
- Soil erosion and dust - (**Medium impact before mitigation and low impact with mitigation measures**);
- Diesel and oil spills affecting ground and surface water - (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact of noise on surrounding environment - (**Low impact before mitigation and low impact with mitigation measures**);
- Loss of and impacts on low sensitivity terrestrial indigenous vegetation - (**Medium impact before mitigation and medium impact with mitigation measures**);
- Impact on terrestrial fauna and avifauna occurring on the site and surrounds (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact on terrestrial Critical Biodiversity Areas and Ecological Support Areas (**Medium impact before mitigation and low impact with mitigation measures**);

- Jobs - (**Medium impact (POSITIVE) before mitigation and medium impact (POSITIVE) with mitigation measures**);
- Traffic - (**Medium impact before mitigation and low impact with mitigation measures**);
- Property value and unforeseen opportunity costs - (**Low impact before mitigation and low with mitigation measures**);
- Crime and security - (**Medium impact before mitigation and low impact with mitigation measures**);
- Heritage management - (**Low impact before mitigation and low impact with mitigation measures**).

Operational phase:

- Potential erosion of the site and surrounds due to stormwater flow or flooding (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact of noise on surrounding environment - (**High impact before mitigation and medium impact with mitigation measures**);
- Loss of and impacts on low sensitivity terrestrial indigenous vegetation - (**Low impact before mitigation and low impact with mitigation measures**);
- Impact on terrestrial fauna and avifauna occurring on the site and surrounds - (**Low impact before mitigation and low impact with mitigation measures**);
- Impact on terrestrial Critical Biodiversity Areas and Ecological Support Areas - (**Medium impact before mitigation and low impact with mitigation measures**);
- Traffic - (**Medium impact before mitigation and medium impact with mitigation measures**);
- Property value and unforeseen opportunity costs - (**Low impact before mitigation and low impact with mitigation measures**);
- Crime and security - (**Medium impact before mitigation and low impact with mitigation measures**);
- Increased demand on services - (**Medium impact before mitigation and low impact with mitigation measures**).

Decommissioning phase:

- Similar to impacts associated with construction phase with the added positive impact of the site to be rehabilitated.

The No Development Option - The No Development option will result in the site remaining as is. Erven 1003 and 7751 are situated within the urban edge of Vredenburg and have been earmarked for residential development in the SDF of Saldanha Bay Municipality and is therefore ideally situated to alleviate some of the housing needs that exist. If the proposed does not proceed current housing shortage in Vredenburg will persist as is.

(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 in appendix J, for a list of mitigation measures as proposed for each potential impact assessed, as well as the EMP included as 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.

None.

(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.

Not applicable.

(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 municipal services capacity.

In undertaking the investigation and compiling this report, the following have 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		
All possible impacts on the environment have been assessed and can be mitigated and managed. The assessment did not lead to any fatal flaws, if the development is approved, provided that the facility is operated in terms of all relevant applicable legislation and the EMP management activities implemented.		
(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.		
Construction phase: • Construction activities must be controlled and restricted to the development footprint only. • The construction area and all proposed no-go areas must be demarcated before construction starts and remain demarcated throughout construction phase. • The construction activities must be monitored by an Environmental Control Officer. • All disturbed areas should receive ongoing monitoring and management of erosion and invasive plant growth.		

- Construction work must be carried out in the low rainfall season (mid to late summer) and completed in that low rainfall season to minimise the impact on non-perennial rivers.
- Access to roads and other areas must be controlled to avoid disturbance of areas outside the development footprint. Personnel should be restricted to the immediate construction areas only.
- Monitor construction areas frequently for signs of erosion and if signs of erosion are detected implement repair and preventative measures immediately.
- Care should be taken that any soil used for construction purposes that is brought onto the site does not contain the seeds of alien invasive plants.
- Ablution facilities should be available for construction workers, should be located outside buffer zones and no-go areas and should be regularly serviced.
- Proper on-site management for the storage and use of materials waste and pesticides/weed killers to prevent any potential pollution of the stormwater channel should be addressed in the Environmental Management Plan for the project.

Operational phase:

- All no-go areas must remain demarcated throughout the operational phase. Demarcation must be by means of basic fence i.e. standard wooden droppers with 1 to 2 wire strands.
- Should any disturbance i.e. erosion occur within the no-go areas / buffer areas the affected areas should immediately be rehabilitated, and prevention measures must be put in place to ensure that the disturbance does not happen again.
- All alien invasive plant species must be removed and managed on an ongoing basis from the no-go areas. Removal of alien invasive plant species must take place according to CapeNature approved methods, having the least negative impact on the environment.
- Only use one existing access road to the sites for operational purposes and avoid disturbance of "new" areas outside the existing access road and infrastructure footprint.
- Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.
- Ablution facilities should be available for operational workers, should be located outside the buffer areas and should be regularly serviced.
- Proper on-site management for the storage and use of materials waste and pesticides/weed killers to prevent any potential pollution of the stormwater channel should be addressed in the Environmental Management Plan for the project.

These measures should be addressed, implemented and monitored in terms of the EMPr for the construction and operational phases.

(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.

Recommended that the EA prescribe that:

- Should any heritage artefacts be exposed during construction that all activities be stopped, and Heritage Western Cape contacted before any further action being permitted.
- The project implementation process should be subject to standard Environmental Management Programme prescripts and conditions under supervision of a competent and diligent ECO, during its construction and decommissioning phases.
- Independent auditing, monitoring and verification by a competent external environmental auditor during operations must be conducted at regular intervals to ensure compliance with the approved EA, EMPr.

(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;	5 years
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;	10 years

iii.	the period for which the portion of the environmental authorisation that deals with non-operational aspects is granted; and	10 years
iv.	the period for which the portion of the environmental authorisation that deals with operational aspects is granted.	Unlimited

SECTION I: APPENDICES

The following appendices must be attached to this report:

APPENDIX			**Confirm that Appendix is attached**
Appendix A:	**Locality map**		YES
Appendix B:	**Site development plan(s)**		YES
	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;		YES
Appendix C:	**Photographs**		YES
Appendix D:	**Biodiversity overlay map**		YES
Appendix E:	**Permit(s) / license(s) from any other Organ of State, including service letters from the municipality.**		YES
	Appendix E1:	**Services Confirmation**	YES
	Appendix E2	**Copy of comment from HWC**	YES
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.**		YES
Appendix G:	**Appendix G1: Geotechnical Investigation**		YES
	Appendix G2: Terrestrial Biodiversity Impact Assessment		YES
Appendix H:	**Appendix H: EMPr**		YES
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.**		YES
Appendix K:	**Any Other (if applicable).** **Appendix K1: EAP CV** **Appendix K2: Floodline Investigation** **Appendix K3: Engineering Services Report** **Appendix K4: GLS Report** **Appendix K5: Land Audit and Cadastral Report** **Appendix K6: iX Engineers Letter Stormwater Management** **Appendix K7: Louwville Stormwater Master Plan**		YES

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.