

**BASIC ENVIRONMENTAL IMPACT ASSESSMENT AND
WATER USE LICENSE FOR PIPE CRACKING: PERTH
EMPIRE SEWER PIPE REPLACEMENT IN WESTDENE,
CITY OF JOHANNESBURG**

REF No. :

SEPTEMBER 2021



Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. The report 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 report is in the form of a table that can extend itself as each space is filled with typing.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities**

found on site may lead to an application for environmental authorisation being refused.

10. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the of the Environmental Affairs Branch
P.O. Box 8769
Johannesburg
2000
Administrative Unit of the of the Environmental Affairs Branch
Ground floor Diamond Building
11 Diagonal Street, Johannesburg
Administrative Unit telephone number: (011) 240 3377
Department central telephone number: (011) 240 2500

(For official use only)

NEAS Reference Number:						
File Reference Number:						
Application Number:						
Date Received:						

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

[Redacted]

Is a closure plan applicable for this application and has it been included in this report?

if not, state reasons for not including the closure plan.
[Redacted]

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity? YES

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person? YES

If no, state reasons for not attaching the list.
[Redacted]

Have State Departments including the competent authority commented? YES

If no, why?

Contents

1	SECTION A: ACTIVITY INFORMATION.....	8
1.1	Proposal or development description.....	8
1.2	Applicable legislation, policies and/or guidelines.....	10
1.3	Alternatives	14
1.4	Physical size of the activity	16
1.5	Site Access.....	17
1.6	LAYOUT OR ROUTE PLAN	18
2	SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT.....	21
2.1	Property Description.....	22
2.2	Activity Position.....	22
2.3	Gradient Of the Site	22
2.4	Location In Landscape	23
2.5	Groundwater, Soil and Geological stability of the site.....	23
2.6	Agriculture	24
2.7	Groundcover.....	25
2.8	Land use character of surrounding area.....	26
	NORTH.....	27
	WEST.....	27
	EAST.....	27
2.9	SOCIO-ECONOMIC CONTEXT	28
2.10	Cultural/Historical Features	34
3	SECTION C: PUBLIC PARTICIPATION (SECTION 41).....	35
3.1	Local Authority Participation.....	35
3.2	Consultation With Other Stakeholders	36
3.3	General Public Participation Requirements.....	36
3.4	Appendices For Public Participation.....	37
4	SECTION D: RESOURCE USE AND PROCESS DETAILS.....	37
4.1	Waste, effluent, and emission management.....	38
4.2	Liquid effluent (other than domestic sewage).....	39

4.3	Liquid effluent (domestic sewage).....	40
4.4	Water Use	42
4.5	Power Supply	43
4.6	Energy Efficiency.....	43
5	SECTION E: IMPACT ASSESSMENT	44
5.1	Issues raised by interested and affected parties.....	44
5.2	Impacts That May Result From The Construction And Operational Phase.....	44
5.3	Impacts That May Result From The Decommissioning And Closure Phase	78
6	ENVIRONMENTAL IMPACT STATEMENT	81
7	IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE	81
8	SPATIAL DEVELOPMENT TOOLS	82
9	RECOMMENDATION OF THE PRACTITIONER	83
10	THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED	84
11	ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)	85
12	SECTION F: APPENDIXES.....	86
	APPENDIX A: SITE PLAN(S).....	87
	APPENDIX B: PHOTOGRAPHS.....	88
	APPENDIX C: FACILITY ILLUSTRATION	89
	APPENDIX D: ROUTE POSITION INFORMATION	90
	APPENDIX E : PUBLIC PARTICIPATION INFORMATION	91
	APPENDIX E1: PROOF OF SITE NOTICE.....	92
	APPENDIX E2: BACKGROUND INFORMATION DOCUMENT	93
	APPENDIX E3: PROOF OF NEWSPAPER ADVERTISEMENTS.....	95
	APPENDIX E4: COMMUNICATIONS TO AND FROM INTERESTED AND AFFECTED PARTIES	96

APPENDIX E5: MINUTES OF ANY PUBLIC AND/OR STAKEHOLDER MEETINGS..... 97

APPENDIX E6: COMMENTS AND RESPONSE REPORT 98

APPENDIX E7: COMMENTS FROM I&APS ON BASIC ASSESSMENT (BA) REPORT 99

APPENDIX E8: COMMENTS FROM I&APS ON AMENDMENTS TO THE BA REPORT 100

APPENDIX E9: COPY OF THE REGISTER OF I&APS..... 101

APPENDIX F: WATER USE LICENSE 102

APPENDIX G: SPECIALIST STUDIES..... 103

APPENDIX G1: ECOLOGICAL STUDIES 104

APPENDIX G2: FRESHWATER AND AQUATIC STUDY 105

APPENDIX H: EMPR..... 106

APPENDIX I: DETAILS OF THE EAP&EXPERTISE..... 107

DRAFT

1 SECTION A: ACTIVITY INFORMATION

Project title (must be the same name as per application form):

Basic Environmental Impact Assessment And Water Use License For Pipe Cracking: Perth Empire Sewer Pipe Replacement In Westdene, City Of Johannesburg

1.1 Proposal or development description

The activity involves the replacement and upgrade of sewer pipes using pipe cracking method.

Pipe Cracking Method Explained

a) Preparation

- HDPE pipes on will be inspected for defects.
- All house connection along the section will be identified from design maps and on preconstruction CCTV footage and reports.
- Sewer pumps (with standby pumps) will be tested, and hoses inspected for leaks.
- Excavation for launch and receiving, and house connection will commence.
- HDPE pipes will be butt welded to the required length

b) Pipe Cracking Sequence

- When butt welding and excavation is complete, the manholes, upstream and downstream of the section will be plugged and over pumping will commence.
- Existing sewer pipe will be cut at house connections and the sewer from affected houses will be blocked.
- The newly butt-welded HDPE pipe will then be pulled through to replace the existing pipe.
- As soon as the whole length has been pulled through, the HDPE pipe will be cut at house connections and the HDPE Y-Junctions will be jointed for house connections using the electrofusion method.
- Air testing will be conducted in accordance with Clause 7.2 of SANS 1200LD. No water level drop will be allowed for these types of joints, as they are expected to be airtight.
- On acceptance and approval, house connections will commence. Bedding and backfilling will be done on launch and receiving pits, and on house connections.
- Compaction tests will be done on the bedding and on backfill.
- On completion, post CCTV inspection will be conducted and a report will be submitted to the Employer



Figure 1: Project location

Select the appropriate box

The application is for an upgrade of an existing development

X

The application is for a new development

--

Other, specify

--

Does the activity also require any authorisation other than NEMA EIA authorisation?

YES	
-----	--

If yes, describe the legislation and the Competent Authority administering such legislation

The activity trigger the need for a water use license under Section 21 (c) and (i) of the Water Act. The sections state that:

- ✓ Section 21 (c): Impeding or diverting the flow of water in a watercourse
- ✓ Section 21(i): Altering the bed, banks, course or characteristics of a watercourse.

If yes, have you applied for the authorisation(s)?

YES	
	NO

If yes, have you received approval(s)? (attach in appropriate appendix)

1.2 Applicable legislation, policies and/or guidelines

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations:

**Title of legislation, policy or Administering authority:
guideline:**

**Promulgation
Date:**

National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	November 1998
National Water Act, 1998 (Act No. 36 of 1998) as amended	Provincial	1998
National Environmental Management: Waste Act (Act no. 59 of 2008) as amended	National & Provincial	March 2009
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	National & Provincial	April 1999
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	National & Provincial	June 2004
Environmental Conservation Act, 1989 (Act No. 73 of 1989)	National & Provincial	June 1989
Environmental Impact Assessment Regulations, 2014 (as amended)	National	December 2014
DEA Guidelines on Public Participation	National DEA	October 2012
National Environmental Management: Waste Act, as amended	National & Provincial	November 2013
Occupational Health and Safety Act (No 85 of 1993)	National	June 1993
Gauteng Provincial Environmental Management Framework	Provincial	May 2015
Gauteng Environmental Implementation Plan 2015-2020	Provincial	2015
Gauteng Conservation Plan Version 3.3 (C-Plan 3.3)	Provincial	October 2011
Gauteng Urban Edge 2008 / 2009	Provincial	2009

Legislation, policy of guideline	Description of compliance
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	<p>The listed activities triggered by the proposed bulk water supply pipeline have been identified and assessed in the EIA process being undertaken (i.e. Basic Assessment). This Basic Assessment Report will be submitted to the competent and commenting authority in support of the application for authorisation.</p> <p>While no permitting or licensing requirements arise directly, the holistic consideration of the potential impacts of the proposed project has found application in the EIA process. The implementation of mitigation measures are included as part of the EMPr and will continue to apply throughout the life cycle of the Project</p>
National Water Act, 1998 (Act No. 36 of 1998) as amended	The objectives of the National Water Act, 1998 (Act No. 36 of 1998) have been addressed in the Water Use General Authorisation. Mitigation and management measures have been compiled in this Basic Assessment Report for the protection of natural water resources
National Environmental Management: Waste Act (Act no. 59 of 2008,) as amended	<p>As no waste disposal site will be associated with the proposed pipeline, no permit is required in this regard.</p> <p>Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of the Act, as detailed in the EMPr</p>
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	The Act aims to promote the good management of the national heritage resources. According to the Act the South African Heritage Resources Agency (SAHRA) must be notified during the early planning phases of a project for any development that meet certain criteria. Any artefacts uncovered during the project life cycle will be reported to SAHRA as provided for in the EMPr

National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	The Act provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA. Areas of high biodiversity need to be protected. Should any protected plants be found on site, these will be managed in consultation with GDARD
Conservation of Agricultural Resources Act (CARA) (Act No 43 of 1983)	A wetland impact assessment study was undertaken which identified fauna and flora and CARA was taken into account. The relevant mitigations measures were identified and are included in the EMPr
Environmental Impact Assessment Regulations, 2014 (as amended)	The proposed development constitutes activities listed under GN R. 983 and GN R. 985 (as amended); therefore, a Basic Assessment Report process is being followed to obtain authorisation from the GDARD
DEA Guidelines on Public Participation	This guideline was taken cognisance of during the Stakeholder Engagement process conducted for the proposed pipeline
National Environmental Management: Waste Act, as amended	No waste management license would be required for the construction or operational phases of the proposed activity. Only a limited amount of solid construction waste will be created on the site during the construction phase. Waste that is created will be hauled away and dumped at the nearest registered landfill site. Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of the Act, as detailed in the EMPr
Occupational Health and Safety Act (No 85 of 1993)	The Act provides for the health and safety of persons at work and for the health and safety of persons in connection with the use of machinery; the protection of persons other than persons at work; and against hazards to health and safety arising out of or in connection with the activities of persons at work. The EMPr provides for measures to ensure that objectives of the Act are met on this site
APPLICABLE POLICIES AND GUIDELINES	

Gauteng Provincial Environmental Management Framework	The aim of the EMF is to guide the protection and enhancement of environmental assets and natural resources along with development patterns to ensure sustainable environmental management and development patterns within and around the Gauteng Province
Gauteng Environmental Implementation Plan 2015-2020	The plan seeks to ensure that the numerous governance controls or mechanisms, which set the targets and oversee the performance of the national and provincial Departments and Municipalities, are monitored. The recommendations proposed in the EMPr are in line with the environmental priorities and targets of the EIP 2015 – 2020
Gauteng Conservation Plan Version 3.3 (C-Plan 3.3)	The Gauteng Conservation Plan was considered in ensuring the protection of the surrounding ecology by preventing the sterilisation of soils and biodiversity. Moreover, the pipeline has been designed and will be laid in such a way as to prevent any further degradation to the disturbed upper reaches of the existing wetland.

1.3 Alternatives

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not** include the no go option into the alternative table below.

Note: After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Please describe the process followed to reach (decide on) the list of alternatives below

Possible alternatives considered:

The following alternative types were initially discussed during the project design phase:

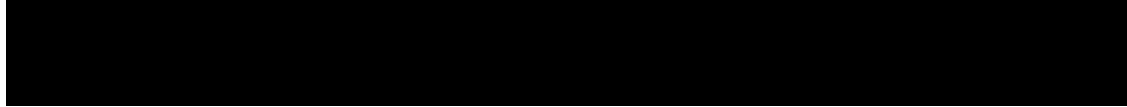
- a) Pipeline connection points;
- b) Pipeline route;
- c) Pipeline layout along the route.

No technically and practically feasible alternatives existed for proposed project, and as such, these were not further investigated. No other connection location, or route alternatives have been proposed for the project as this is the only site available for the applicant

Provide a description of the alternatives considered

No.	Alternative type, <i>either alternative: site on property, properties, activity, design, technology, energy, operational or other (provide details of "other")</i>	Description
1	Proposal	
2	Alternative 1 (Preferred Alternative).	Pipe Cracking Method: <ul style="list-style-type: none"> • HDPE pipes on will be inspected for defects. • All house connection along the section will be identified from design maps and on preconstruction CCTV footage and reports. • Sewer pumps (with standby pumps) will be tested, and hoses inspected for leaks. • Excavation for launch and receiving, and house connection will commence. • HDPE pipes will be butt welded to the required length
3	Alternative 2	Excavations along the pipeline servitude to replace the existing pipeline
4	Alternative 3	

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.



1.4 Physical size of the activity

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Size of the activity:

Proposed activity Total environmental (landscaping, parking, etc.) and the building footprint

Approximately 9000 m²

Alternatives:

Alternative 1 (if any)

Approximately 9000 m²

Alternative 2 (if any)

Approximately 9000 m²

or, for linear activities:

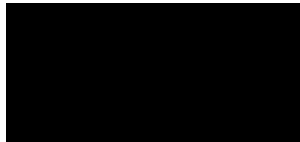
Length of the activity:

Proposed activity

750m

Alternatives:

Alternative 1 (if any)



Alternative 2 (if any)

m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Size of the site/servitude:

Proposed activity

Approximately 9000 m²

Alternatives:

Alternative 1 (if any)

Approximately 9000 m²

Alternative 2 (if any)

Approximately 9000 m²

Ha/m²

1.5 Site Access

Proposal

Does ready access to the site exist, or is access directly from an existing road?

YES	<input type="checkbox"/>
-----	--------------------------

If NO, what is the distance over which a new access road will be built

N/A	<input type="checkbox"/>
-----	--------------------------

Describe the type of access road planned:

Access is through Lewes and/or Ash Road.

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 1

Does ready access to the site exist, or is access directly from an existing road?

YES	<input type="checkbox"/>
-----	--------------------------

If NO, what is the distance over which a new access road will be built

	<input type="checkbox"/>
--	--------------------------

Describe the type of access road planned:

Not applicable

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 2

Does ready access to the site exist, or is access directly from an existing road?

YES	<input type="checkbox"/>
-----	--------------------------

If NO, what is the distance over which a new access road will be built

	<input type="checkbox"/>
--	--------------------------

Describe the type of access road planned:

Not applicable

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been Number of times duplicated

(only complete when applicable)

1.6 LAYOUT OR ROUTE PLAN

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);

layout plan is of acceptable paper size and scale, e.g.

- A4 size for activities with development footprint of 10sqm to 5 hectares;
- A3 size for activities with development footprint of > 5 hectares to 20 hectares;
- A2 size for activities with development footprint of >20 hectares to 50 hectares);
- A1 size for activities with development footprint of >50 hectares);

The following should serve as a guide for scale issues on the layout plan:

- A0 = 1: 500
- A1 = 1: 1000
- A2 = 1: 2000
- A3 = 1: 4000
- A4 = 1: 8000 (±10 000)

Shapefiles of the activity must be included in the electronic submission on the CD's; the property boundaries and Surveyor General numbers of all the properties within 50m of the site; the exact position of each element of the activity as well as any other structures on the site; the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure; servitudes indicating the purpose of the servitude; sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):

- Rivers and wetlands;
- the 1:100 and 1:50 year flood line;
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);

Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometers, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

REFER TO APPENDIX A – A3 MAPS

7. SITE PHOTOGRAPHS

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

REFER TO APPENDIX B – SITE PHOTOGRAPHS

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned

activity. The illustration must give a representative view of the activity to be attached in the appropriate Appendix.

REFER TO APPENDIX C - FACILITY ILLUSTRATION

DRAFT

2 SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

Note: Complete Section B for the proposal and alternative(s) (if necessary)

Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections Times
of the route

Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for time (complete only
location/route alternatives s when appropriate)

Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route (complete only when appropriate
for above)

Section B - Location/route Alternative No. (complete only when appropriate
for above)

2.1 Property Description

Province	Gauteng
Municipality	City of Johannesburg
Ward Number	69
Farm name and number	Braamfontein 53IR Westdene 773IR
Portion number	
SG code	T0IR00000000005300000 T0IR10110000077300000

2.2 Activity Position

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 decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:

Latitude (S):

Longitude (E):



In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

Starting point of the activity

26°10'48.14"

27°59'31.91"

Middle point of the activity

26°10'57.38"

27°59'20.34"

End point of the activity

26°11'3.66"

27°59'14.96"

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached

REFER TO APPENDIX H

The 21-digit Surveyor General code of each cadastral land parcel

REFER TO SECTION 2.1 ABOVE UNDER PROPERTY DESCRIPTION

2.3 Gradient Of the Site

Indicate the general gradient of the site.

1:50 – 1:20

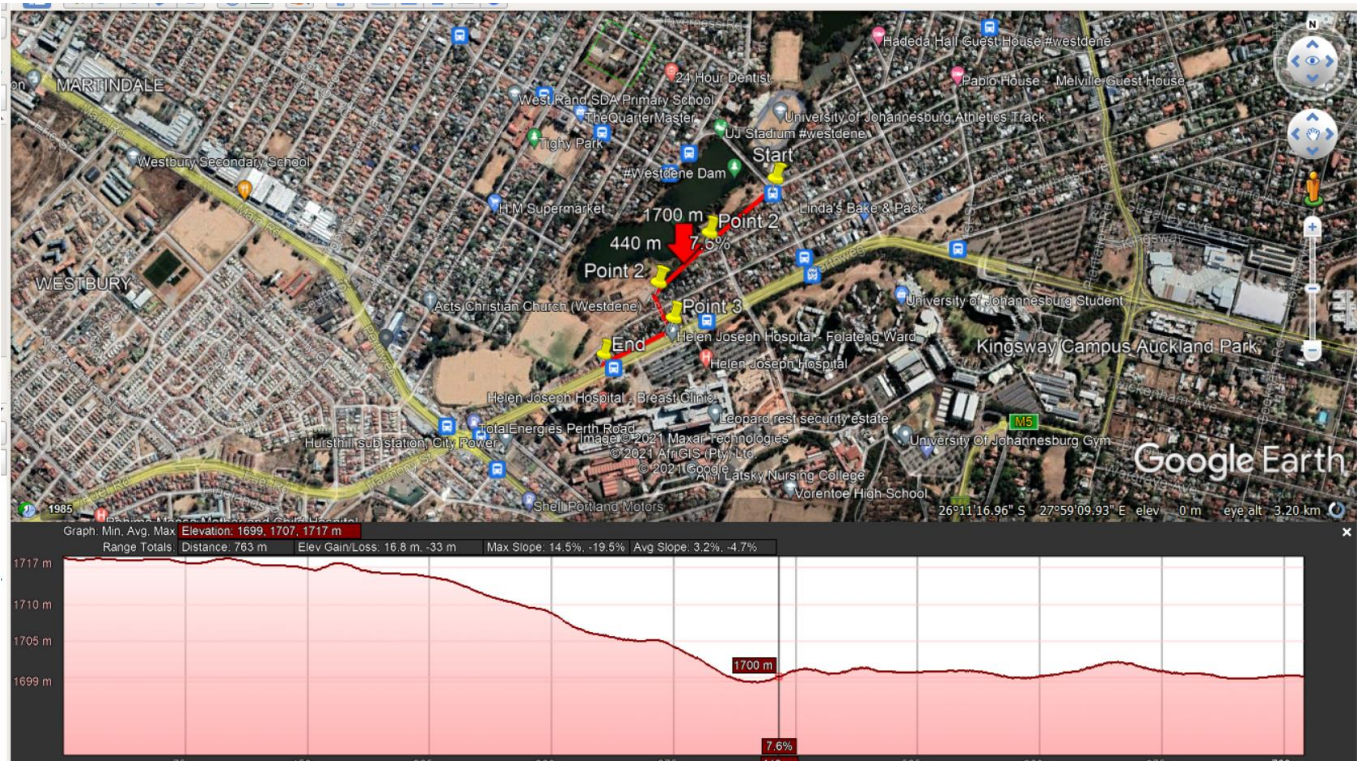


Figure 2: Site elevation and gradient

2.4 Location In Landscape

Indicate the landform(s) that best describes the site.

	River front
--	-------------

2.5 Groundwater, Soil and Geological stability of the site

a) Is the site located on any of the following?

Shallow water table (less than 1.5m deep)

Dolomite, sinkhole or doline areas

Seasonally wet soils (often close to water bodies)

Unstable rocky slopes or steep slopes with loose soil

Dispersive soils (soils that dissolve in water)

Soils with high clay content (clay fraction more than 40%)

YES	
	NO
YES	
	NO
	NO
YES	

Any other unstable soil or geological feature

	NO
YES	

An area sensitive to erosion

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s)

	NO
--	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):

Longitude (E):

--

c) are any caves located within a 300m radius of the site(s)

	NO
--	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):

Longitude (E):

--

d) are any sinkholes located within a 300m radius of the site(s)

	NO
--	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):

Longitude (E):

--

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

2.6 Agriculture

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?

	NO
--	----

Please note: The Department may request specialist input/studies in respect of the above.

2.7 Groundcover

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Indicate the types of groundcover present on the site and include the estimated percentage found on site

[Redacted]			Landscaped (vegetation) % =80
			<table border="1"> <tr> <td>Paved surface (hard landscaping) % =28</td> <td>Building or other structure % =90</td> <td>Bare soil % =2</td> </tr> </table>
Paved surface (hard landscaping) % =28	Building or other structure % =90	Bare soil % =2	

Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site.

[Redacted]	NO
------------	----

If YES, specify and explain:

[Redacted]

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.

[Redacted]	NO
------------	----

If YES, specify and explain:

[Redacted]

Are there any special or sensitive habitats or other natural features present on the site?

YES	[Redacted]
-----	------------

If YES, specify and explain:

The development is close to shores of Westdene Dam

Was a specialist consulted to assist with completing this section

YES

If yes complete specialist details

Name of the specialist:	Witness Dube		
Qualification(s) of the specialist:	Bsc Hons Environmental Sciences		
Postal address:	51 Lloyd Street, Kempton Park		
Postal code:	1618		
Telephone:		Cell:	0726389634
E-mail:	witdube@yahoo.co.uk	Fax:	

Are any further specialist studies recommended by the specialist? NO

If YES, specify: Not applicable

If YES, is such a report(s) attached?

If YES list the specialist reports attached below

Not applicable

Signature of specialist: _____ Date: _____

Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

2.8 Land use character of surrounding area

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

	3. Nature conservation area	4. Public open space	
6. Dam or reservoir	8. Low density residential		

	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial ^{AN}	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
		23. Train station or shunting yard ^N	24. Railway line ^N	
Other land uses (describe):				

NOTE: Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

NORTH						
	8,12,13,20,1 5,19	8,12,13,20,1 5,19	8,12,13,20,15, 19	8,12,13,20,15,1 9	8,12,13,20,15 ,19	
	8,12,13	6,8,12,13,20, 15	6,8,12,13,20,1 5,19	2,8,2,16,17,23,2 4,19	8,12,13	
WE ST	8,12,13,20,1 5	6,8,12,13,20, 15	SITE	6,2,8,2,16,17,23, 24	2,8,2,16,17,2 3,24	EA ST
	8,12,13	6,8,12,13,20, 15	6,8,12,13,20,1 5	2,6,8,2,16,17,23, 24	2,8,2,16,17,2 3,24	
	8,12,13,20,1 5,19	8,12,13,20,1 5,19	8,12,13,20,15, 19	8,12,13,20,15,1 9	8,12,13,20,15 ,19	
SOUTH						

Note: More than one (1) Land-use may be indicated in a block

Please 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 activity/ies. Specialist reports

that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an “A” and with an “N” respectively.

Have specialist reports been attached

YES	[REDACTED]
-----	------------

If yes indicate the type of reports below

- a) Freshwater and Aquatic Assessment
- b) Ecological Assessment

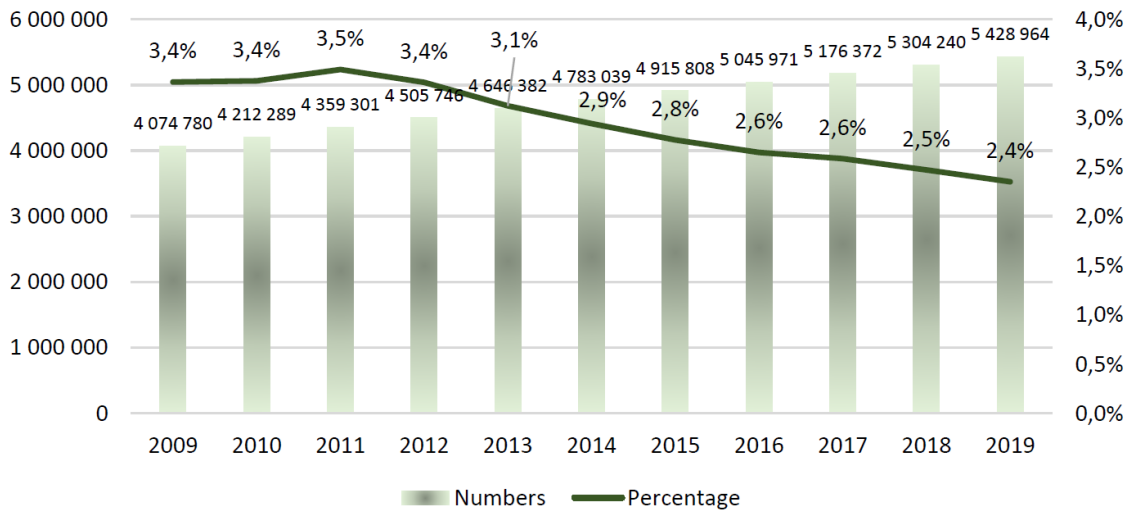
2.9 SOCIO-ECONOMIC CONTEXT

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

City Of Johannesburg Population

Johannesburg is home to about 5.5 million people, making it the biggest metro by population size in South Africa. The metro also prides itself as the economic and financial hub of the country. In 2018, the city housed nearly 10% of South Africa’s total population. Since 2011 the population growth rate has been declining from 3,5% to 2,4%. However, this was significantly higher than the Gauteng and National average, indicating that the City remains an inward migration pole.

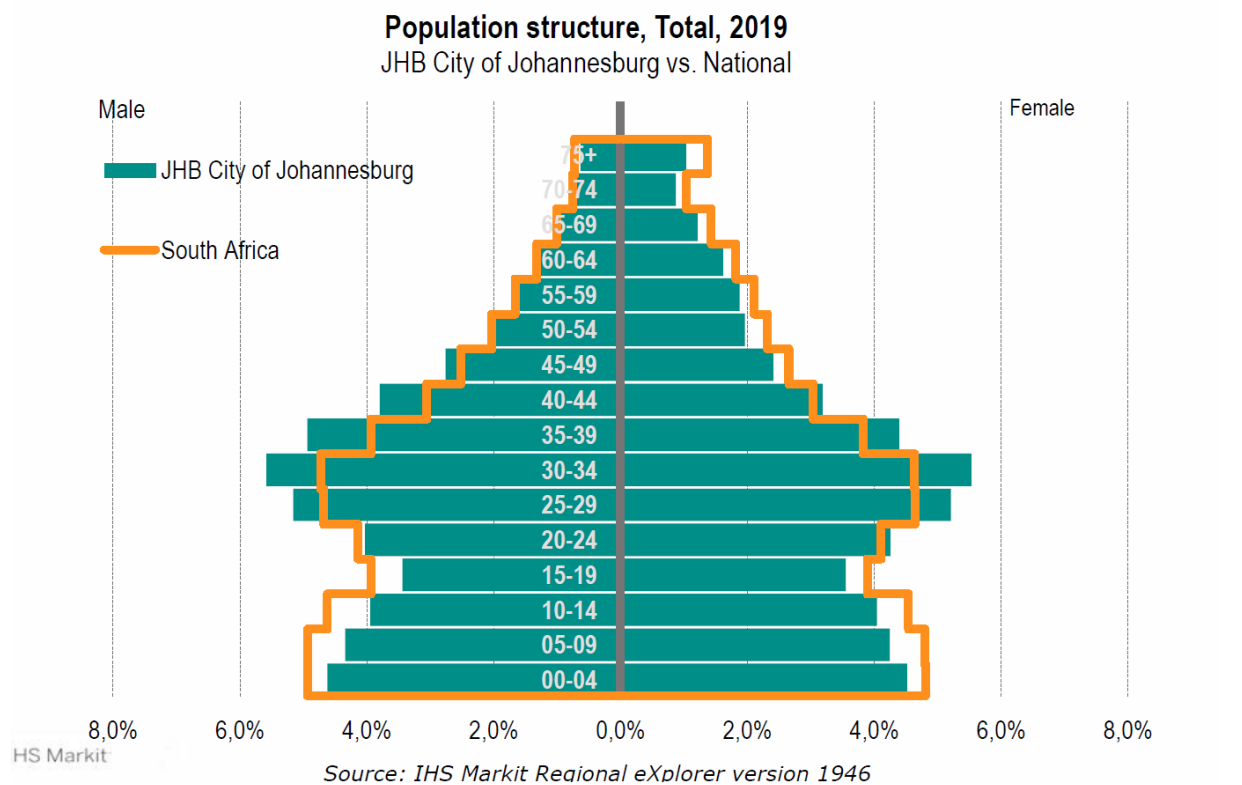
City of Johannesburg Population Growth in Numbers and Percentage: 2009 - 2019



Gender, Age and Race.

In Johannesburg, during the 2016 Household Survey there was an equal split between women and men. Currently, the male/female split in population is 100.3 males per 100 females in 2018. The City of Johannesburg Metropolitan Municipality has more males (50.06%) relative to South Africa (48.96%). In total there were 2.57 million (49.94%) females and 2.58 million (50.06%) males. This distribution holds for Gauteng as a whole where the female population is 6.95 million which constitutes 49.75% of the total population of 14 million.

The largest share of Johannesburg's population, about 40%, is within the young working age (25-44 years) category. Relative to the national population, Johannesburg has a significantly larger share of the working age population between 25 and 49 years old. This may be because young people migrate to Johannesburg to look for opportunities.



The female population for the 20 to 34 years age group amounts to 16.1% of the total female population, the male population group for the same age amounted to 16.7% of the total male population. The largest share of population is within the young working age (25-44 years) age category with a total number of 2.03 million or 39.5% of the total population.

In terms of race, the City's population consists of 80.17% Black Africans (4.13 million), 9.79% White (504 000), 5.27% Coloured (272 000) and 4.76% Asian (245 000) people in 2018.

Households

In 2018, the City of Johannesburg Metropolitan Municipality comprised of 1.68 million households. This equates to an average annual growth rate of 3.04% in the number of households from 2008 to 2018. With an average annual growth rate of 2.91% in the total population, the average household size in the City of Johannesburg Metropolitan Municipality is decreasing. The average household size in 2008 decreased from approximately 3.9 individuals per household to 3.1 persons per household in 2018.

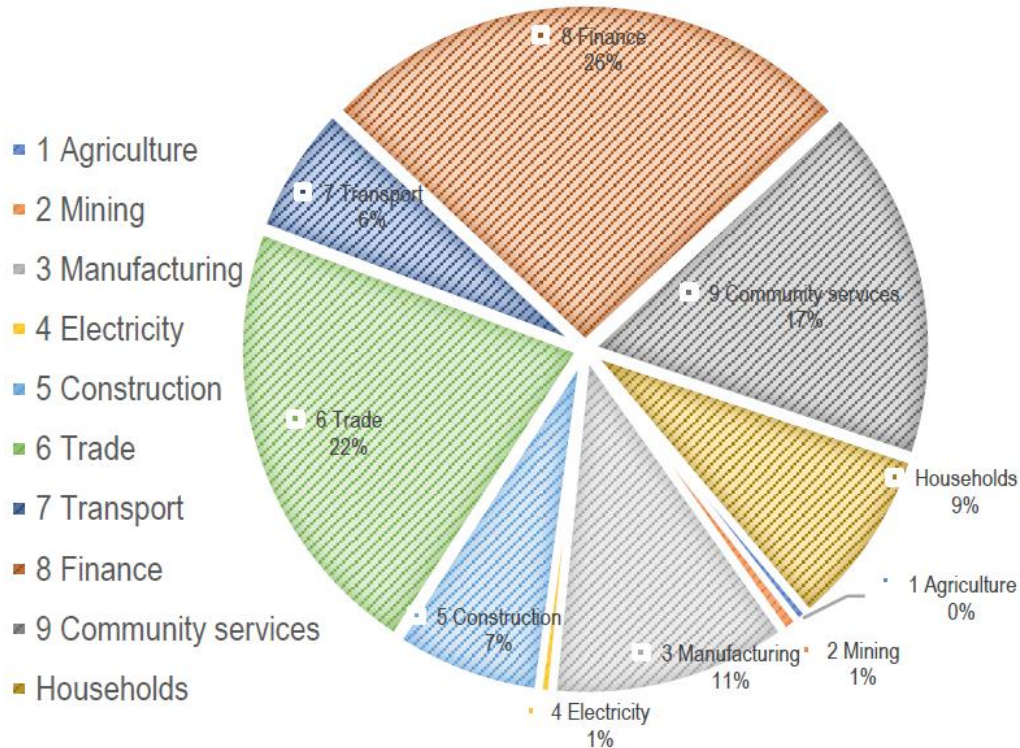
About 37.7% of Households in the City are women headed. This figure is slightly higher than the rate in Gauteng: 35.86% and about 90% of the rate in South Africa (41.32%). In 2018 there were 5 144 child headed households. These constitute about one-third of the figure in Gauteng (15,241) and less than 10% of the figure in South Africa (111,471).

Employment/Unemployment

52,6% of the economically active population are employed, in Johannesburg. 77% of them are employed in the formal sector. The finance sector employs the most with for 26.1% of those employed in that sector. 22% are employed in the trade and retail sector. 17% are in the community services sector which includes the general government services, given that the provincial capital is in the city.

The agriculture sector employs the least share of people at 0.6%.

EMPLOYMENT COMPOSITION CITY OF JOHANNESBURG, 2018



8% of the employed are employed in the informal sector, which has significantly grown from employing 225 000 people in 2008 to an estimated 351 000 in 2018. The City continues to fight unemployment, which is one of the major challenges facing South Africa. Unemployment in the city is currently at 26,5% and youth unemployment is estimated to be over 46,6%. Youth unemployment is a critical challenge facing the City. Slow formal sector growth is the major causes of youth unemployment. Although over 65,5% of young people have completed matric only 9% have post matric qualifications consequently, the majority of youth due to their low skills are employed in the wholesale, retail & trade and private households. Only 5% of young people are employed in the highly skilled manufacturing sector, thus pointing to a need for education and skills development targeting this youth.

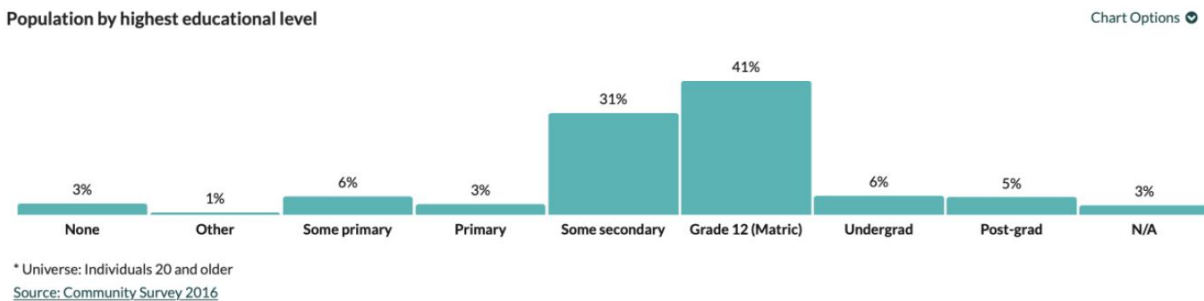
Number of unemployed & Unemployment rate City of Johannesburg, 2008-2018



Source: IHS Markit Regional eXplorer version 1692

Education and Skills Profile

According to the 2016 Community Survey 53% of Johannesburg’s residents had completed matric, which is 25% higher than the national average. 6% had an undergraduate degree and 5% a post graduate qualification. 3% have no education.

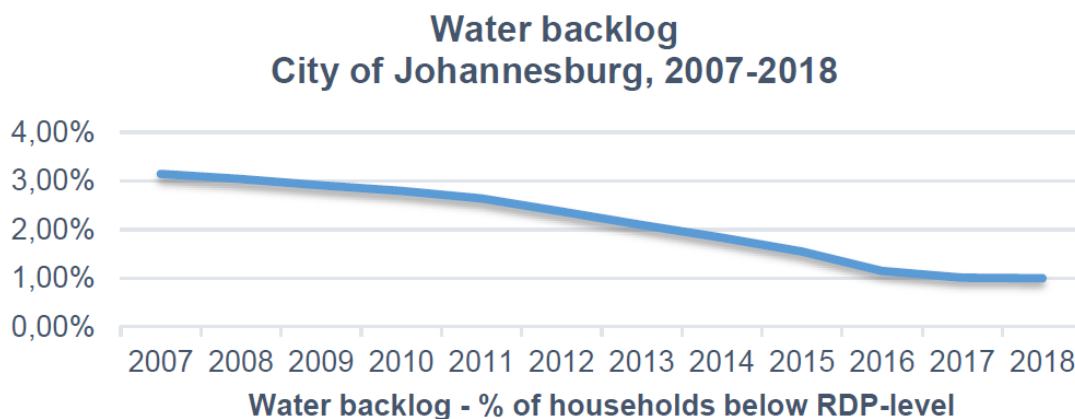


The number of people without any schooling decreased from 2008 to 2018 by an average annual rate of -1.97%, while the number of people within the 'matric only' category, increased from 848,000 to 1.28 million. The number of people with 'matric and a certificate/diploma' increased with an average annual rate of 2.63%, with the number of people with a 'matric and a Bachelor's' degree increasing with an average annual rate of 4.72%. Overall improvement in the level of education is visible.

There are 5 education circuits in Johannesburg with 1 232 schools of which 481 are independent schools. This means just under 44% of the province's schools are in Johannesburg. In total there are 889 036 learners of which 172 358 are in the independent schools. This constitutes 38% of the province's learners. The City has 30 186 educators, this means that about 37% of the province's educators are in the City of Johannesburg.

Water Services

A total of 1.47 million (98.4%) households in the city have access serviced through yard connection in formalised areas and through communal standpipes within a maximum walking distance of 200 metres in informal settlements. The City has been successful in reducing water backlogs over time. It can be seen that the percentage of households has shown a significant decrease, dropping annually by -7.14% between 2007 and 2018.

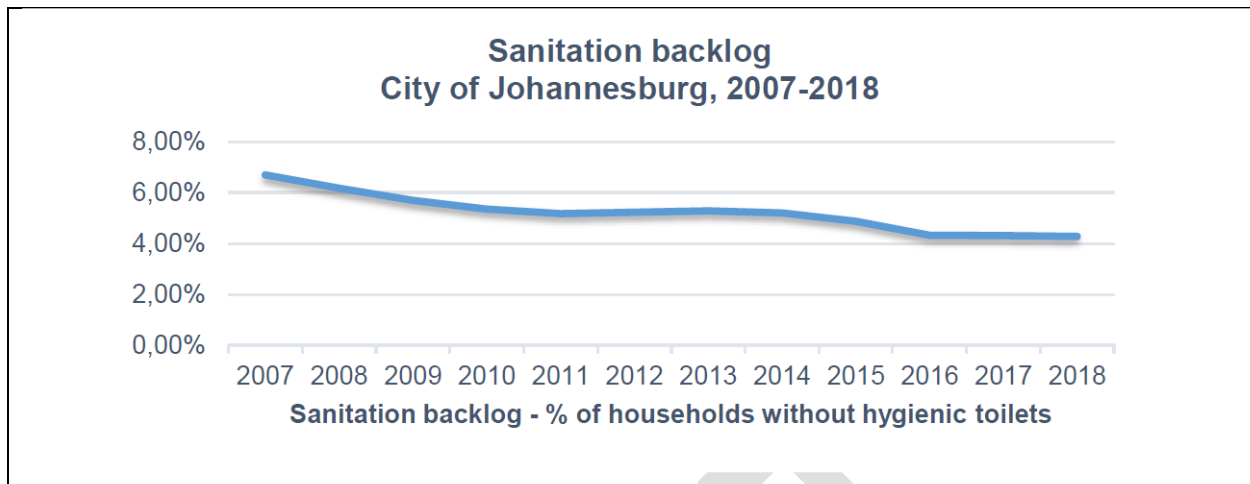


Source: IHS Markit Regional eXplorer version 1870

Sanitation

A total of 1.36 million (92.7%) of all households in the city of Johannesburg have access to sanitation through individual sewer connection to properties in formalised areas and at basic level through VIPs and ablution blocks in informal settlements. The sanitation backlog (number of households without hygienic toilets) has been steadily decreasing in the past 10 years, in 2018 there were 113 899 households with no access to basic level of sanitation which is reduced to 109 065 in 2019.

The City has made advances in the backlog associated with sanitation, but there is still more work to be achieved. The percentage of households without hygienic toilets has decreased annually at - 1.05% between 2007 and 2018.



2.10 Cultural/Historical Features

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

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, powerline, 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 5 000 m² 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 10 000 m² 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.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?

	NO
--	----

If YES, explain:

[Redacted]

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

No structures or items of archaeological significance were found

Will any building or structure older than 60 years be affected in any way?

	NO
	NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

If yes, please attached the comments from SAHRA in the appropriate Appendix

3 SECTION C: PUBLIC PARTICIPATION (SECTION 41)

The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

3.1 Local Authority Participation

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?

YES	
-----	--

If yes, has any comments been received from the local authority?

NO

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

Comments not yet received

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

The project is for the local authority

3.2 Consultation With Other Stakeholders

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

[Redacted]

If "NO" briefly explain why no comments have been received

The PPP is currently ongoing. Any comments received will be included in the final BAR

3.3 General Public Participation Requirements

The Environmental Assessment Practitioner must ensure that the public participation process is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

3.4 Appendices For Public Participation

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report

Appendix 8 –Comments from I&APs on amendments to the BA Report

Appendix 9 – Copy of the register of I&APs

4 SECTION D: RESOURCE USE AND PROCESS DETAILS

Note: Section D is to be completed for the proposal and alternative(s) (if necessary)

Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 4) Each alternative needs to be clearly indicated in the box below
- 5) Attach the above documents in a chronological order

Section D has been duplicated for times
alternatives

(complete only when appropriate)

Section D Alternative (complete only when appropriate
No. for above)

4.1 Waste, effluent, and emission management

Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	<input type="checkbox"/>
-----	--------------------------

If yes, what estimated quantity will be produced per month?

±5m ³

How will the construction solid waste be disposed of (describe)?

Waste skips/bins will be provided throughout the construction site with separate skips/bins made available for construction debris and solid waste. Solid waste that is unsuitable for re-use for construction will be transported to a registered landfill site to avoid the pollution of surrounding areas and roads, as well as to minimize nuisance impacts such as dust and odors.

Where will the construction solid waste be disposed of (describe)?

Waste that can be reused or recycled will be disposed of at the licensed municipal waste disposal site.

Will the activity produce solid waste during its operational phase?

<input type="checkbox"/>	NO
--------------------------	----

If yes, what estimated quantity will be produced per month?

N/A

How will the solid waste be disposed of (describe)?

Construction waste that can be recycled will be recycled. Only waste that cannot be reused, reduced, or recycled will be disposed at a licensed waste disposal site.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?

YES	<input type="checkbox"/>
-----	--------------------------

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?



Note: If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? YES NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? YES NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

Waste Receptacles will be provided for different types of waste to enable waste segregation.

4.2 Liquid effluent (other than domestic sewage)

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? YES NO

If yes, what estimated quantity will be produced per month?

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)? YES NO

Will the activity produce any effluent that will be treated and/or disposed of on site? YES NO

If yes, what estimated quantity will be produced per month?

If yes describe the nature of the effluent and how it will be disposed.

[Redacted area]

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

Will the activity produce effluent that will be treated and/or disposed of at another facility?

	NO
--	----

If yes, provide the particulars of the facility:

Facility name:
Contact
person:
Postal
address:
Postal code:
Telephone:
E-mail:

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

4.3 *Liquid effluent (domestic sewage)*

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?

	NO
--	----

If yes, what estimated quantity will be produced per month?

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?

	NO
--	----

Will the activity produce any effluent that will be treated and/or disposed of on site?

	NO
--	----

If yes describe how it will be treated and disposed off.

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

	NO
--	----

If yes, is it controlled by any legislation of any sphere of government?

	NO
--	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

Particulate Matter

Some of these tiny particles are formed during combustion (primary PM). Others are formed in the atmosphere through chemical reactions between the various pollutants found in exhaust (secondary PM). PM2.5 may contain many substances including metals, acids, carbon, and polycyclic aromatic hydrocarbons. Diesel engines emit far greater amounts of PM than do gasoline engines.

Volatile organic compounds (VOCs)

VOCs are a large class of carbon-containing compounds. In vehicle exhaust, VOCs come from unburned or partially-burned fuel. Additional VOC emissions come from evaporation of fuel (particularly during refueling). Gasoline engines emit a higher proportion of VOCs than diesel engines, due to the greater volatility of the fuel.

Carbon Monoxide (CO)

CO results from the incomplete combustion of vehicle fuels. Gasoline engines emit a higher proportion of CO than diesel engines, due to the lower combustion temperature.

Sulphur Dioxide (SO₂)

SO₂ is emitted from the combustion of Sulphur contained in the fuel. Most SO₂ is from diesel engines as diesel has much more Sulphur than gasoline.

Air Toxics

Vehicles emit toxic air pollutants such as benzene, 1,3-butadiene, acrolein, formaldehyde and polycyclic aromatic hydrocarbons (PAH). Some of these components are VOCs, while others are contained in particle.

Coolants

Older vehicles may have air conditioning systems using Freon, an ozone depleting substance, as a refrigerant. This Freon could be emitted through leaks, or during repairs. Newer vehicles use non-ozone-depleting coolant. The coolants in newer vehicles are still pollutants as they act as greenhouse gases.

Passenger car emissions summary ("Average Annual Emissions and Fuel Consumption for Passenger Cars and Light Trucks". Transportation and Air Quality. United States Environmental Protection Agency.)

Component	Emission Rate	Annual pollution emitted
Hydrocarbons	2.80 grams/mile (1.75 g/Km)	77.1 pounds (35.0 kg)
Carbon monoxide	20.9 grams/mile(13.06 g/Km)	575 pounds (261 kg)
NO _x	1.39 grams/mile (0.87 g/Km)	38.2 pounds (17.3 kg)
Carbon dioxide	0.916 pounds per mile (258 g/km)	11,450 pounds (5,190 kg)

4.4 Water Use

Indicate the source(s) of water that will be used for the activity

	the activity will not use water
--	---------------------------------

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

--

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs?

YES	
-----	--

If yes, list the permits required

Water Use License

If yes, have you applied for the water use permit(s)?

YES	
-----	--

If yes, have you received approval(s)? (attached in appropriate appendix)

	NO
--	----

4.5 Power Supply

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

N/A

If power supply is not available, where will power be sourced from?

N/A

4.6 Energy Efficiency

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

N/A

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

DRAFT

5 SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

5.1 Issues raised by interested and affected parties

Summaries the issues raised by interested and affected parties.

Any issues raised will be included in the final BAR.

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)

(A full response must be provided in the Comments and Response Report that must be attached to this report):

Section to be completed once comments have been received

5.2 Impacts That May Result from The Construction And Operational Phase

Briefly describe the methodology utilised in the rating of significance of impacts

In order to establish a coherent framework within which all impacts could be objectively assessed, it was deemed appropriate to establish a rating system, to be applied consistently to all the criteria. For such purposes each aspect was assigned a value ranging from one (1) to four (4) depending on its definition. The tables below provide a summary of the criteria and the rating scales used in the assessment of potential impacts. The impacts associated with the project were evaluated according to the nature, extent, duration, intensity, probability and significance rating of the impacts as explained below.

Nature: classification of whether the impact is positive or negative, direct or indirect

Extent: spatial scale of impact and classified as:

- Site: the impacted area is the whole or significant portion of the site.
- Local: Within a radius of 2 km of the construction site.
- Regional: the impacted area extends to the immediate, surrounding and neighbouring properties.
- National: the impact can be considered to be of national significance. o International: impact has international ramifications

Duration: Indicates what the lifetime of the impact will be and is classified as:

- Short term: The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase.
- Medium term: The impact will last for the period of the construction phase, where after it will be entirely negated.
- Long term: The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non-transitory.
- Permanent: Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

Intensity: Describes whether an impact is destructive or benign;

- Low: Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.
- Moderate: Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way.
- High: Natural, cultural and social functions and processes are altered to extent that they temporarily cease.
- Very High: Natural, cultural and social functions and processes are altered to extent that they permanently cease.

Probability: Describes the likelihood of an impact occurring:

- **Improbable:** Likelihood of the impact materialising is very low
- **Possible:** The impact may occur
- **Highly Probable:** Most likely that the impact will occur o Definite: Impact will certainly occur

Significance: Based on the above criteria the significance of issues was determined. The total number of points scored for each impact indicates the level of significance of the impact, and is rated as:

- **Low:** the impacts are less important.
- **Medium:** the impacts are important and require attention; mitigation is required to reduce the negative impacts.
- **High:** the impacts are of great importance. Mitigation is therefore crucial.

Cumulative: In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area

Mitigation: Mitigation for significant issues is incorporated into the EMP.

CRITERIA FOR IMPACTS RATING

CRITERIA	DESCRIPTION			
Extent	National - The whole of South Africa	Regional- Provincial and parts of neighbouring provinces	Local- Within a radius of 2km of the site	Site- Confined to the construction site
Duration	Permanent -Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient	Long-term - The impact will continue or last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non-transitory	Medium-term -The impact will last for the period of the construction phase, where after it will be entirely negated	Short-term - The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase
Intensity	Very High- Natural, cultural and social functions and processes are altered to extent that they permanently cease	High - Natural, cultural and social functions and processes are altered to extent that they temporarily cease	Moderate - Affected environment is altered, but natural, cultural and social functions and processes continue	Low -Impact affects the environment in such a way that natural, cultural and social functions are not altered
Probability	Definite - Impact will certainly occur	Highly Probable - Most likely that the impact will occur	Possible - The impact may occur	Improbable - Likelihood of the impact materializing is very low
Rating	4	3	2	1

SIGNIFICANCE RATING

IMPACT	POINTS	DESCRIPTION
Low	4-6	An acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in either positive or negative medium to short term effects on the social and/or natural environment
Medium	7-9	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in either a positive or negative medium to long-term effect on the social and/or natural environment
High	10-12	A serious impact that may prevent the implementation of the project (if it is a negative impact). These impacts would be considered by society as constituting a major and usually a long-term change to the (natural &/or social) environment and result in severe effects or beneficial effects.
Very High	13-16	A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are unmitigable and usually result in very severe effects, or very beneficial effects
Status	Denotes the perceived effect of the impact on the affected area	
Positive (+)	Beneficial impact	
Negative (-)	Adverse impact	
Negative impacts are shown with a (-) while positive ones are indicated as (+)		

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
PROPOSED ACTIVITY				
PLANNING AND DESIGN				
Policy Compliance The proposed development may not be consistent with relevant environmental policy and/or spatial guideline documents, (e.g. close to a watercourse).	-ve	Development must comply with relevant legislation and/or policy, e.g., Municipal By-laws, SDFs, etc.	-ve	Low
Job Creation The project will result in temporary job creation and skills development during the construction and operation phase	+ve	No mitigation	+ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<p>Inadequate planning for routing of sewer pipeline and erosion protection measures</p> <p>Inappropriate launching at the launching sight might lead to sedimentation of Westdene Dam during the rainy season.</p>	-ve	Any excavations that will be done at the launch site should be done and backfilled before it rains.	-ve	Low
CONSTRUCTION PHASE				
<p>Site clearing affecting soils at the launch site.</p> <p>Exposure of soils, leading to increased runoff and erosion, and thus increased sedimentation of the dam;</p> <ul style="list-style-type: none"> Increased sedimentation might lead to smothering of biota and potentially 	-ve	<ul style="list-style-type: none"> Site camp and stockpiles to be established outside of the delineated riparian habitat and the applicable setback zone in consultation with the appropriate authority; No vehicle servicing or re-fuelling is to take place outside of the freshwater resources and its applicable setback zone; 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
deteriorating surface water quality.		<ul style="list-style-type: none"> Launching should be done when it's to avoid flooding risk which will increase contamination and affect construction activities. 		
Soil contamination. <ul style="list-style-type: none"> Spillage of chemicals or oil leaks from construction vehicle may result in the contamination of surface water. 	-ve	<ul style="list-style-type: none"> Contaminated soil must be treated on site using a spillage kit. All earthworks must be adequately controlled and managed Any excavations must be clearly marked and demarcated. 	-ve	Low
Noise Noise generated during construction can result in nuisance impact to neighboring property owners and office dwellers.	-ve	<ul style="list-style-type: none"> SANS 10103 and the National Noise Control Regulation should be used as the main guidelines for addressing the potential noise impact on this project. With regard to unavoidable very noisy construction activities in the vicinity of 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<p>noise sensitive areas, these should be screened off with acoustic screens, where possible. If no acoustic screening is used during exceptionally noisy construction times, prior warning to community members would be extremely important.</p> <ul style="list-style-type: none"> As construction workers operate in a very noisy environment, it must be ensured that their working conditions comply with the requirements of the Occupational Health and Safety act (Act No.85 of 1993) where necessary ear protection gear should be worn. 		
<p>Geology and soils -</p> <ul style="list-style-type: none"> Loss of soil from excavations due to erosion at the launch site. 	-ve	<ul style="list-style-type: none"> Excavation must not be left open for longer than four weeks. 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<p>Fauna and flora</p> <ul style="list-style-type: none"> • Construction activities may result in habitat destruction along the pipeline route and • Alien invasive proliferation at the launch site. 	<p>-ve</p>	<ul style="list-style-type: none"> • Any fauna directly threatened by the construction activities should be removed to a safe location by a suitably qualified person. • Fishing at the site should be strictly forbidden. • Vegetation clearing should be kept minimal and only area to be used for construction should be cleared. • Where soil disturbance is required, the topsoil should be put aside and replaced after the infrastructure has been installed. • Areas to be cleared should be demarcated. • Ensure that all activities impacting on Westdene Dam are managed per the relevant DWS Licensing regulations; 	<p>-ve</p>	

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<p>Waste Generation</p> <p>Waste generation during the construction phase will have a negative impact on the environment, if not controlled adequately. Waste streams likely to include domestic waste, spent grinding material, mixed concrete, construction rubble and other construction waste</p>	-ve	<ul style="list-style-type: none"> Care should be taken not to dump waste indiscriminately this could have a negative impact on the ecosystem and may lead to injury to humans and animals. <p>Construction Rubble:</p> <ul style="list-style-type: none"> All rubble must either be used on site as part of the existing development or must be taken off the site and disposed of at an approved site. Rubble must not be dumped on the ground but must be placed in a skip bin for regular removal as possible. <p>Litter management:</p> <ul style="list-style-type: none"> Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction site. These should be kept covered and 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<p>arrangements made for them to be collected regularly from the site.</p> <ul style="list-style-type: none"> • A housekeeping team should be appointed to regularly maintain the litter and rubble situation on the construction site. • Waste disposal will need to take place in terms of section 20 of the Environment Conservation Act (Act N0.73 of 1998). • Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor the neatness of the construction site. 		
<p>Air quality</p> <ul style="list-style-type: none"> • Short-term negative impacts on the air quality will occur from 	-ve	<p>Dust control</p> <ul style="list-style-type: none"> • Excavations and other clearing activities at the launch site must only be done during agreed working times and permitting weather conditions to avoid 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
dust and exhaust fumes during construction.		drifting of sand and dust into adjacent areas. <ul style="list-style-type: none"> Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the contract and ECO. 		
Safety and Security A construction site can act as a magnet to the unemployed, resulting in large numbers of people gathering around the site, thereby posing a security risk in the area.	-ve	<ul style="list-style-type: none"> Strict control of personnel accessing the site must be implemented. No loitering around the site for people seeking temporary employment is to be allowed Health and Safety Officer to be appointed to continuously monitor the safety conditions during construction. All construction staff must have the appropriate PPE and name tags or access cards for the house owners to easily identify them. 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<ul style="list-style-type: none"> • Staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents. • Record and report any environmental, health and safety incidents to the responsible person. • Signs should be erected to warn of construction activities. • The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) and the National Building Regulations and Complex Board Corporate Rules. • All structures that are vulnerable to high winds must be secured. 		

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<ul style="list-style-type: none"> • The basic spill control kit must be available at each construction camp within the site. • The Contractor is to ensure traffic safety at all times and shall implement road safety precautions for this purpose. • All vehicles and equipment used on site must be operated by appropriately trained and / or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA). • An environmental awareness training programme for all workers shall be put in place by the Contractor. Before commencing with any work, all workers shall be appropriately briefed about the 		

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<p>EMPr and relevant occupational health and safety issues.</p> <ul style="list-style-type: none"> • Adequate emergency facilities must be provided for the treatment of any emergency on the site. Emergency procedures must be available on site and communicated to all. • The nearest emergency service provider must be identified, and Emergency contact numbers are to be displayed conspicuously at prominent position. 		
<p>Socio economic Employing and training local labour will result in the availability of skilled labour force in the area.</p>	+ve	No mitigation needed	+ve	N/A
<p>Impacts to Cultural/ Historical Resources</p>	-ve	Any artefacts or cultural resources encountered during construction must be	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		preserved and removed with the assistance of a qualified specialist		
OPERATIONAL PHASE				
Surface and Groundwater Contamination Contamination of Westdene Dam due to pipeline burst.	-ve	<ul style="list-style-type: none"> Regular inspections and maintenance of the pipeline must be undertaken during the operational phase, with any leaks repaired immediately. Any damage/erosion caused by pipe failure must be repaired immediately following the event 	-ve	Low

ALTERNATIVE 2: EXCAVATIONS ALONG THE PIPELINE ROUTE.

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
PLANNING AND DESIGN				
Policy Compliance The proposed development may not be consistent with relevant environmental policy and/or spatial guideline documents, (e.g. close to a watercourse).	-ve	Development must comply with relevant legislation and/or policy, e.g., Municipal By-laws, SDFs, etc.	-ve	Low
Job Creation The project will result in temporary job creation and skills development during the construction and operation phase	+ve	No mitigation	+ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<p>Inadequate planning for routing of sewer pipeline and erosion protection measures</p> <p>Inappropriate routing of sewer line and erosion protection will lead to sedimentation and erosion of the banks of Westdene Dam.</p>	-ve	A stormwater management plan must be drawn up by a qualified engineer and approved by DWS.	-ve	Low
CONSTRUCTION PHASE				
<p>Site clearing affecting soils and Westdene Dam.</p> <p>Exposure of soils, leading to increased runoff and erosion, and thus increased sedimentation of the river;</p> <ul style="list-style-type: none"> Increased sedimentation of the river, leading to 	-ve	<ul style="list-style-type: none"> Site camp and stockpiles to be established outside of the delineated riparian habitat and the applicable setback zone in consultation with the appropriate authority; Retain as much indigenous vegetation as possible on the riverbanks; 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
smothering of biota and potentially deteriorating surface water quality.		<ul style="list-style-type: none"> No vehicle servicing or re-fuelling is to take place outside of the freshwater resources and its applicable setback zone; Areas where bank failure is observed as a result of the construction activities, it should be immediately repaired; The river, and the applicable setback area should be clearly demarcated with danger tape by an ECO and marked as a no-go area. Construction should be done during the dry season to avoid flooding risk which will increase contamination and affect construction activities. 		

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<p>Soil contamination.</p> <ul style="list-style-type: none"> Spillage of chemicals or oil leaks from construction vehicle may result in the contamination of the soil and groundwater. Storm water runoff may cause erosion of topsoil. 	-ve	<ul style="list-style-type: none"> Contaminated soil must be treated on site using a spillage kit. All earthworks must be adequately controlled and managed Any excavations must be clearly marked and demarcated. Bare areas must be revegetated as soon as works in that area is completed. Construction should be done during the dry season to avoid flooding risk which will increase contamination and affect construction activities. 	-ve	Low
<p>Noise</p> <p>Noise generated during construction can result in nuisance impact to neighboring property owners and office dwellers.</p>	-ve	<ul style="list-style-type: none"> SANS 10103 and the National Noise Control Regulation should be used as the main guidelines for addressing the potential noise impact on this project. With regard to unavoidable very noisy construction activities in the vicinity of 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<p>noise sensitive areas, these should be screened off with acoustic screens, where possible. If no acoustic screening is used during exceptionally noisy construction times, prior warning to community members would be extremely important.</p> <ul style="list-style-type: none"> As construction workers operate in a very noisy environment, it must be ensured that their working conditions comply with the requirements of the Occupational Health and Safety act (Act No.85 of 1993) where necessary ear protection gear should be worn. 		
<p>Geology and soils -</p> <ul style="list-style-type: none"> Loss of soil from excavations due to erosion. 	-ve	<ul style="list-style-type: none"> Implementation of anti-erosion measures such as temporary river diversion to reduce the water velocity. Excavation must not be left open for longer than four weeks. 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<ul style="list-style-type: none"> Soil erosion due to ineffective storm water management. It is anticipated that erosion incidences might occur during wet seasons especially on the riverbanks. 	-	<ul style="list-style-type: none"> Proper storm water management measures must be put in place. 	-	
<p>Fauna and flora</p> <ul style="list-style-type: none"> Construction activities may result in habitat destruction adjacent to the pipeline route and dam which will impact significantly on the aquatic communities; 	-ve	<ul style="list-style-type: none"> Any fauna directly threatened by the construction activities should be removed to a safe location by a suitably qualified person. The collection, hunting or harvesting of any animals/amphibians at the site should be strictly forbidden. Vegetation clearing should be kept minimal and only area to be used for construction should be cleared. 	-ve	

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<ul style="list-style-type: none"> Vegetation degradation and alien invasive proliferation on the riverbanks. 		<ul style="list-style-type: none"> Where soil disturbance is required for the laying of service infrastructure, the topsoil should be put aside and replaced after the infrastructure has been installed. Areas to be cleared should be demarcated. Ensure that all activities impacting on the dam are managed per the relevant DWS Licensing regulations; Construction should be done during the dry season to avoid flooding risk which will increase contamination and affect construction activities. 		
<p>Topography Risk of erosion as areas designated for the</p>	-ve	<ul style="list-style-type: none"> River diversion will be done, to reduce flow velocity and allow construction to take place minimal contamination of the dam. 	-ve	

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
construction are within the riverbanks.		<ul style="list-style-type: none"> Remove vegetation only on areas earmarked for construction. Construction to follow immediately after vegetation clearance. Avoid placing of stockpiles and other services on areas likely to pose obtrusive visual impact 		
<p>Traffic</p> <ul style="list-style-type: none"> If vehicles are not maintained, it may lead to contamination and unnecessary noise. Slow moving vehicles, if utilizing public access routes, could cause congestion at peak visitor times. 	-ve	<ul style="list-style-type: none"> Delivery of equipment must be undertaken within the minimum reasonable number of trips. Planning of site delivery hours must be scheduled to avoid weekends and evenings, as far as possible. 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<ul style="list-style-type: none"> If delivery of equipment and materials are not planned carefully it may lead to a visual and noise impacts 				
<p>Waste Generation</p> <p>Waste generation during the construction phase will have a negative impact on the environment, if not controlled adequately. Waste streams likely to include domestic waste, spent grinding material, mixed concrete, construction rubble and other construction waste</p>	-ve	<ul style="list-style-type: none"> Care should be taken not to dump waste indiscriminately this could have a negative impact on the ecosystem and may lead to injury to humans and animals. <p>Construction Rubble:</p> <ul style="list-style-type: none"> All rubble must either be used on site as part of the existing development or must be taken off the site and disposed of at an approved site. Rubble must not be dumped on the ground but must be placed in a skip bin for regular removal as possible. 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<p>Litter management:</p> <ul style="list-style-type: none"> • Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction site. These should be kept covered and arrangements made for them to be collected regularly from the site. • A housekeeping team should be appointed to regularly maintain the litter and rubble situation on the construction site. • Waste disposal will need to take place in terms of section 20 of the Environment Conservation Act (Act N0.73 of 1998). • Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor the neatness of the construction site. 		

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
<p>Disruption of residents' movements through access road.</p> <p>The only feasible access is through number 118 Dennis Road, which is a housing complex.</p>	-ve	<ul style="list-style-type: none"> The working area (disturbance corridor) and all exposed trenches must be fenced off with barrier netting, danger tape & droppers. Warning signage must be erected as appropriate to warn road-users of the presence of construction workers and construction vehicles. 	-ve	Low
<p>Air quality</p> <ul style="list-style-type: none"> Short-term negative impacts on the air quality will occur from dust and exhaust fumes during construction. 	-ve	<p>Dust control</p> <ul style="list-style-type: none"> Wheel washing and damping down of un-surfaced and un-vegetated areas, taking water saving into account. Excavations and other clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into adjacent areas. 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<ul style="list-style-type: none"> Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the contract and ECO. 		
<p>Safety and Security</p> <p>A construction site can act as a magnet to the unemployed, resulting in large numbers of people gathering around the site, thereby posing a security risk in the area.</p>	-ve	<ul style="list-style-type: none"> Strict control of personnel accessing the site must be implemented. No loitering around the site for people seeking temporary employment is to be allowed Health and Safety Officer to be appointed to continuously monitor the safety conditions during construction. All construction staff must have the appropriate PPE and name tags or access cards for complex security to easily identify them. Staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, 	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<p>health and safety consequences of incidents.</p> <ul style="list-style-type: none"> • Record and report any environmental, health and safety incidents to the responsible person. • Signs should be erected to warn of construction activities. • The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) and the National Building Regulations and Complex Board Corporate Rules. • All structures that are vulnerable to high winds must be secured. • Potentially hazardous areas such as trenches are to be cordoned off and clearly marked at all times. 		

POTENTIAL IMPACTS:	SIGNIFICANCE OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<ul style="list-style-type: none"> • The basic spill control kit must be available at each construction camp within the site. • The Contractor is to ensure traffic safety at all times and shall implement road safety precautions for this purpose. • All vehicles and equipment used on site must be operated by appropriately trained and / or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA). • An environmental awareness training programme for all workers shall be put in place by the Contractor. Before commencing with any work, all workers shall be appropriately briefed about the 		

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<p>EMPr and relevant occupational health and safety issues.</p> <ul style="list-style-type: none"> Adequate emergency facilities must be provided for the treatment of any emergency on the site. Emergency procedures must be available on site and communicated to all. The nearest emergency service provider must be identified, and Emergency contact numbers are to be displayed conspicuously at prominent position. 		
<p>Socio economic Employing and training local labour will result in the availability of skilled labour force in the area.</p>	+ve	No mitigation needed	+ve	N/A
<p>Impacts to Cultural/ Historical Resources</p>	-ve	Any artefacts or cultural resources encountered during construction must be	-ve	Low

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		preserved and removed with the assistance of a qualified specialist		
OPERATIONAL PHASE				
Erosion This is because of poor slope stabilisation and poor rehabilitation/re-vegetation	-ve	<ul style="list-style-type: none"> • Vegetation should be retained where possible to avoid soil erosion • Re-vegetation of disturbed surfaces should occur immediately after the construction activities are completed to encourage water seepage. • A maintenance plan should be in place to address re-occurrence of riverbank erosion. 	-ve	Low
Fauna and Flora The establishment of vegetation after rehabilitation		<ul style="list-style-type: none"> • Upon completion of construction and rehabilitation the ECO should assess and approve the adequacy of the rehabilitation and ensure that sufficient levels of rehabilitation have been 		

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT IF MITIGATION NOT BEING IMPLEMENTED
		<p>undertaken to allow re-establishment of the necessary vegetation.</p> <ul style="list-style-type: none"> Rehabilitation works should be monitored until 80 % of vegetation has established 		
<p>Surface Water Contamination Contamination of the dam due to pipeline burst.</p>	-ve	<ul style="list-style-type: none"> Regular inspections and maintenance of the pipeline must be undertaken during the operational phase, with any leaks repaired immediately. Any damage/erosion caused by pipe failure must be repaired immediately following the event 	-ve	Low

NO GO OPTION

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact if mitigation not being implemented
Geology and soils Erosion of the riverbank threatening properties close the banks.	-ve	Construction of erosion control measures	-ve	High
Groundwater and Surface Westdene dam water quality will deteriorate due to continuous pipe bursts and leaks	-ve	Upgrading of the sewer system	-ve	High
Odour Stench odour from leaking sewer	-ve	Upgrading of the sewer system	-ve	High

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

- Freshwater and Aquatic Assessment
- Ecological Study

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

Assumptions and Limitations of the EAP:

The following assumptions and limitations are applicable to the studies undertaken within this Basic Assessment Process:

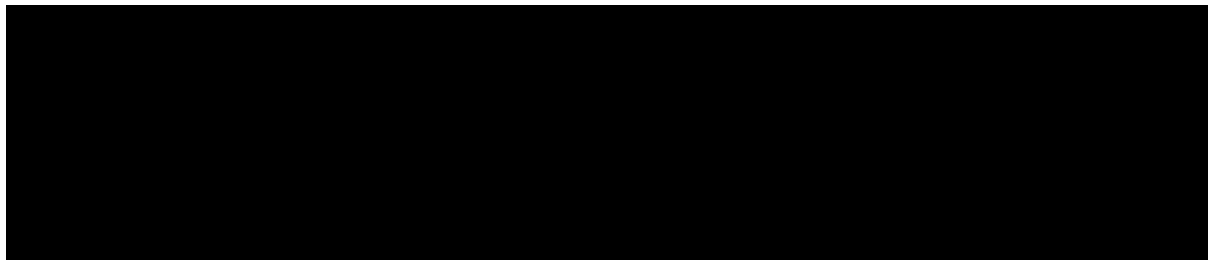
- Specialist studies assume that any potential impacts on the environment associated with the Proposed Project, will be avoided or mitigated accordingly within the basic assessment report.
- It is assumed that the pipeline upgrade and erosion protection measures represent the most technically suitable measures to address the current problem.
- This basic assessment report and supporting documentation was compiled under the impression that all information provided by the Applicant to the EAP was correct, accurate and valid at the time it was provided

5.3 Impacts That May Result From The Decommissioning And Closure Phase

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

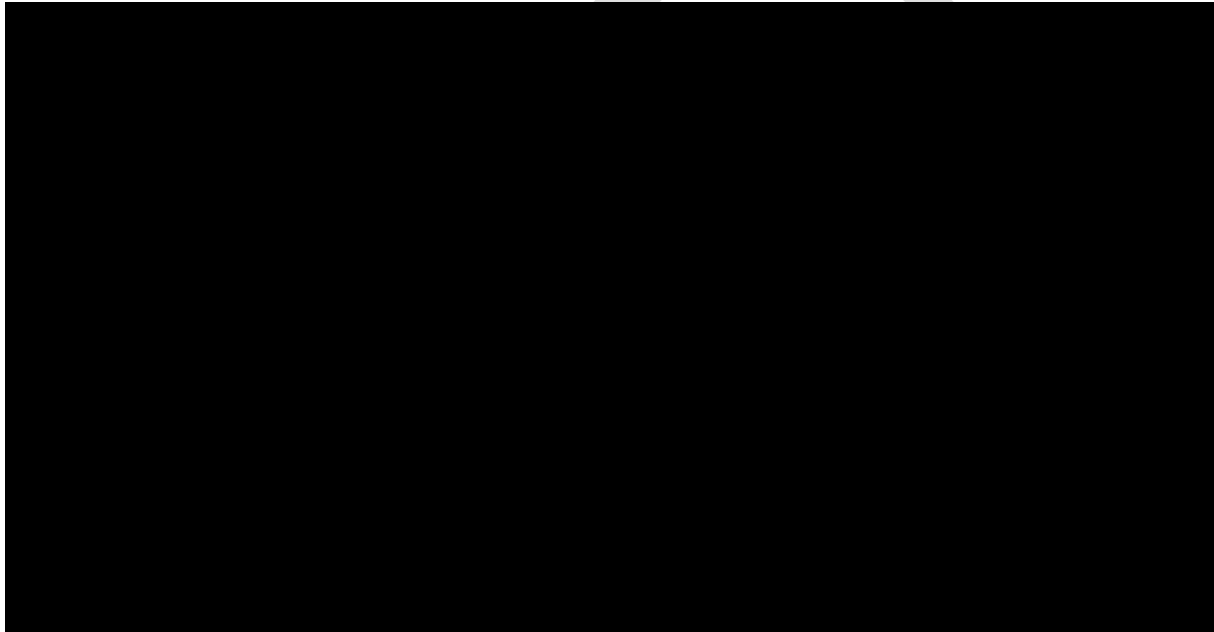
No decommissioning phase is envisaged as the pipeline is expected to service existing and future developments in the area.

Proposal

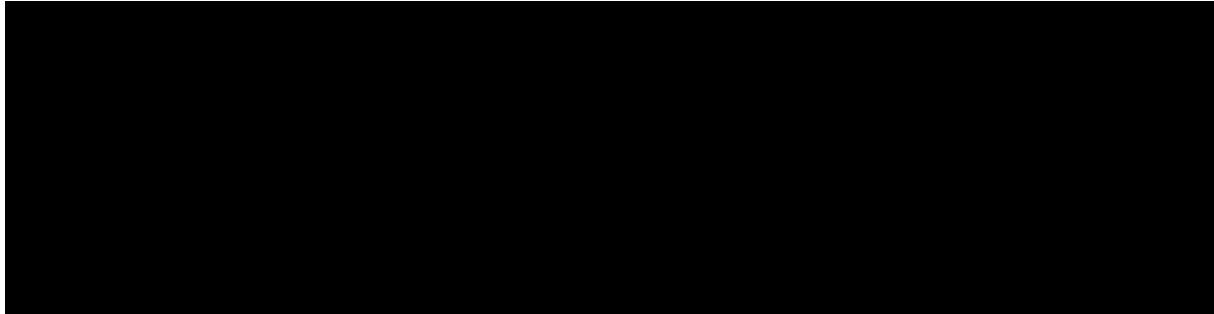





Alternative 1




Alternative 2





List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.



Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

Not applicable to the proposed development

4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

The development will have positive socio-economic cumulative impacts such as the provision of services for future developments in the area.

6 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Proposal (Alternative 1)

Assuming all phases of the project adhere to the conditions stated in the EMPr it has been shown that the impacts associated with the proposed activity will have minimal significant, adverse, long term environmental impact on the environment. Alternatively, all the major negative impacts can be managed to acceptable levels. The operational phase, for both alternatives show positive socio-economic impacts with very low negative environmental impacts. Impacts associated with construction include:

- Economic growth and development.

It must be ensured that the construction phase, in no way, hampers the health of any of the ecological systems or items of heritage significance, and that post-construction rehabilitation leaves the surrounding environments in an as good, if not better, state.

After the construction phase of the project, the contractors must ensure that all hazardous materials are removed from the site and that rehabilitation of land is undertaken according to the requirements of the EMPr. Any alien plant management programmes that are implemented during the construction phase must be maintained during the construction defects liability period.

7 IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

The following impacts are expected to occur:

Construction Phase:

- Employment opportunities;
- Increase in alien vegetation; and
- Potential deterioration in water quality due to excavations at the launch site.

Operational Phase:

- Leaks or pipe failure resulting from poor workmanship.

For alternative:

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

From the assessment, the upgrade of the pipeline and erosion control will have positive impacts of high significance as well as negative impacts of low and medium significance. Negative impacts will mainly be on the physical environment during the construction phase. Positive impacts on the social-economic environment include alignment with spatial plans and upgrading of the sewer services which can improve quality of living for people in the area.

The negative impacts, include:

- Disturbance of fauna and flora;
- Disturbance of a watercourse;
- Temporary disturbance of animal habitats during the construction phase.
- Potential erosion on bare areas and during a storm event.
- Air quality impacts.
- Visual impact during the construction phase.
- Noise pollution in the construction phase.

To prevent possible negative impacts, it is recommended that an ECO must compile monitoring/audit reports till the end of construction.

The positive impacts that will benefit them municipality and neighbouring communities are as follows:

- Provision of sewer services to the area.
- Creation of job opportunities in the construction phase.
- Attract economic development as provided for in spatial plans.

From the analysis given and proposed mitigations, the development will have minimal negative impacts and therefore as the proposed development is recommended. It is however recommended that the mitigation measures presented in the Environmental Management Program (EMPr) be fully implemented.

8 SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

GIS software was used to create geographical maps. This system was also used in devising mitigation measure to ensure environmentally sustainable measures are considered to prohibit environmental degradation and loss of biodiversity due to human practices.

9 RECOMMENDATION OF THE PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).

YES	
-----	--

If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

[Redacted]

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- The EMP must be implemented, and an ECO appointed during the construction.
- Recommendations of all specialist studies must be implemented.
- All construction machinery and equipment must be regularly serviced and maintained to keep noise, dust and possible leaks to minimum.
- Construction hours should be limited to normal working hours.
- All waste generated on site during operation must be adequately managed, separation and recycling of different waste materials must be implemented.
- Any leftovers material must be appropriately disposed of (at a permitted landfill site, recycled, used by the community)
- If or when necessary, erosion control measures must be installed during construction
- Local people should be employed where possible and construction workers should be employed from on-off site location to prevent criminals posing as job seekers on the site.

- Hazardous substance must be appropriately stored in bunded areas and or access-controlled areas on impermeable surface. Emergency numbers should be kept on site in case of spillages
- The site should be fenced and screened where practical and possible. This will prevent uncontrolled access to neighboring properties
- An appropriate temporary traffic control and warning signage must be erected and implemented on the access property.
- A water use license should be applied with the Department of Water and Sanitation
- Ensure that no construction rubble is left in the river after completion of work.
- Assessment from a specialist is required after completion of the construction and must be included in the final ECO report.
- Concrete and cement must not be mixed directly on the ground, or during rainfall events when the potential for transport to the river is the greatest.
- Concrete must only be mixed in a demarcated area, on impermeable substratum.
- Construction machinery must be stored in bunded areas or over oil trays, to avoid soil contamination as a result of an oil spillage.

9. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT (as per notice 792 of 2012, or the updated version of this guideline)

In terms securing ecological sustainable development and use of natural resources- the activity will result in minimal disturbance to the environment as the alignment will along an existing pipeline. In terms of promoting justifiable economic and social development- the activity will be beneficial future residential developments.

10 THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED
(CONSIDER WHEN THE ACITIVTY IS EXPECTED TO BE CONCLUDED)

The Environmental Authorisation is required for 10 years

11 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

(must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers “Yes” to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached

DRAFT

12 SECTION F: APPENDIXES

The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Appendix A: Site plan(s) – *(must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)*

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been completed.

APPENDIX A: SITE PLAN(S)

DRAFT

APPENDIX B: PHOTOGRAPHS

DRAFT

APPENDIX C: FACILITY ILLUSTRATION

DRAFT

APPENDIX D: ROUTE POSITION INFORMATION

DRAFT

APPENDIX E : PUBLIC PARTICIPATION INFORMATION

DRAFT

APPENDIX E1: PROOF OF SITE NOTICE

DRAFT

APPENDIX E2: BACKGROUND INFORMATION DOCUMENT

DRAFT

DRAFT

APPENDIX E3: PROOF OF NEWSPAPER ADVERTISEMENTS

DRAFT

**APPENDIX E4: COMMUNICATIONS TO AND FROM INTERESTED
AND AFFECTED PARTIES**

DRAFT

**APPENDIX E5: MINUTES OF ANY PUBLIC AND/OR
STAKEHOLDER MEETINGS**

DRAFT

APPENDIX E6: COMMENTS AND RESPONSE REPORT

DRAFT

**APPENDIX E7: COMMENTS FROM I&APS ON BASIC ASSESSMENT
(BA) REPORT**

DRAFT

**APPENDIX E8: COMMENTS FROM I&APS ON AMENDMENTS TO
THE BA REPORT**

DRAFT

APPENDIX E9: COPY OF THE REGISTER OF I&APS

DRAFT

APPENDIX F: WATER USE LICENSE

DRAFT

APPENDIX G: SPECIALIST STUDIES

DRAFT

APPENDIX G1: ECOLOGICAL STUDIES

DRAFT

APPENDIX G2: FRESHWATER AND AQUATIC STUDY

DRAFT

APPENDIX H: EMPR

DRAFT

APPENDIX I: DETAILS OF THE EAP&EXPERTISE

DRAFT