
ENVIRONMENTAL IMPACT ASSESSMENT (EIA): DRAFT BASIC ASSESSMENT REPORT

PROPOSED CONSTRUCTION OF A NEW NORTHERN SEWER LINE WITHIN 32 m OF A WATERCOURSE FOR LILYVALE AND SHELLYVALE, BLOEMFONTEIN

Applicant: Mangaung Metro Municipality
DETEA Ref No: EMB/9(i)(ii), 18(i)/14/52
MDA Ref No: 40684
Date: May 2015



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File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. 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.
3. Where applicable **tick** the boxes that are applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. 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 rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	NO X
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If YES, please complete the form entitled "Details of specialist and declaration of interest"

for appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail¹:

The proposed project entails the construction of a new northern sewer line within 32m of a watercourse for Lilyvale and Shellyvale, Bloemfontein. The new outfall sewer line from Lilyvale will cross the small tributary stream of the Bayswater Stream north of the N1 National Road on the northern border of Bloemfontein to the Bloemfontein Northern Sewerage Works. The stream is unnamed due to its small size. Please refer to **Annexure A** for the site and locality plan.

In the design of the pipeline route, it was established that the pipeline should cross at the existing weir in the stream as this would have the smallest visual effect and would have the least impact on the environment. The pipeline is a gravity pipeline and should therefore be constructed at a very specific gradient. The pipeline crosses the stream approximately 2.5 m above the streambed.

As in facility illustration attached in **Annexure C**, the centreline of the pipeline over the weir will be the same level as the top of the weir. As the PVC pipe will have to be protected against floods and damage, it will have to be encased in concrete as indicated on the drawing mentioned above. This will have an effect on the weir height as it will have to be increased by 600 mm in order to accommodate the new pipeline. The increase in height of the weir will have little effect on the storage capacity of the weir.

The pipeline will be constructed underground on both sides of the weir and will therefore not be visible. Little excavation work will be needed on the existing weir, apart from the drilling of holes in order to anchor the new concrete to the existing weir. No blasting will be allowed in the streambed or on both sides of the weir due to possible damage that might be caused to the existing structure. The new concrete will be anchored to the existing structure using 32 mm steel dowels drilled and cemented into the existing weir.

The construction process will include the following:

- i. Excavation work and drilling of holes for steel reinforcing of the existing weir.
- ii. Pipeline will be laid down in correct line and gradient and anchored to the existing structure.

¹ Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

- | |
|--|
| <ul style="list-style-type: none"> iii. Formwork will be constructed around the pipe. iv. Ready mix concrete will be poured around and above the pipe. v. After concrete has set, the formwork will be removed. |
|--|

2. FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

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

Describe 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 in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether 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. 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.

Paragraphs 3 – 13 below should be completed for each alternative.

NOTE: Please take note of the description of the preferred as well as alternative:

<p>Preferred Alternative:</p> <p>The pipeline can link up with existing infrastructure and the newly developed area. Topography is suitable for the development type as the pipeline will use gravity to move sewage to the treatment works. This eliminates the need for pump stations (and associated infrastructure) which has additional construction, maintenance and electricity costs. Specialists and engineers were on site to establish the best route.</p>
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<p>Alternative 2: Locality</p> <p>The pipeline can be rerouted, but would have to cross the same water course further downstream or would have to cross a different watercourse. If the pipeline were to be rerouted a pumpstation would have to be included with the construction. Provision for electricity for the pumpstation would have to be undertaken. This alternative is therefore not a feasible alternative and will not be discussed in the BAR.</p>
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<p>No-go option</p> <p>The ‘no-go’ alternative will be considered throughout the assessment of the proposed project. It does however not seem feasible to keep the area as status quo as the pipeline is being developed to provide the Lilyvale and Shellyvale extensions much needed infrastructure. Also necessary for sanitation service delivery for future developments in the area.</p>

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

List alternative sites, if applicable.

Alternative:	Latitude (S):	Longitude (E):
Preferred	29°03'19.19"S	26°12'17.16"E

In the case of linear activities:

Not applicable

Alternative:

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Latitude (S):

Longitude (E):

0	'	0	'
0	'	0	'
0	'	0	'

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

0	'	0	'
0	'	0	'
0	'	0	'

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

0	'	0	'
0	'	0	'
0	'	0	'

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Preferred Alternative

Size of the activity:

0.34 ha

or, for linear activities: **Not Applicable**

Alternative:

Alternative A1 (preferred activity alternative)

Length of the activity:

m

Alternative A2 (if any)

m

Alternative A3 (if any)

m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Preferred Alternative

Alternative 2: Layout

Alternative 3

Alternative 4

Size of the site/servitude:

9412.19 ha

5. SITE ACCESS

Does ready access to the site exist?

YES	NO
X	

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

m

Describe the type of access road planned:

Access to the application property will be via the servitude registered for the pipeline.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWA);

- ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

7. SITE PHOTOGRAPHS

Colour photographs from the centre 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 Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C 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.

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

Approximately R300 000

What is the expected yearly income that will be generated by or as a result of the activity?

Nil

Will the activity contribute to service infrastructure?

YES X	NO
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Is the activity a public amenity?

YES X	NO
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How many new employment opportunities will be created in the development phase of the activity?

Unknown. Depends on the contractor

What is the expected value of the employment opportunities during the development phase?

Unknown. Depends on the contractor

What percentage of this will accrue to previously disadvantaged individuals?

Unknown. Depends on the contractor

How many permanent new employment opportunities will be created during the operational phase of the activity?

Nil

What is the expected current value of the employment opportunities during the first 10 years?

Not applicable

What percentage of this will accrue to previously disadvantaged individuals?

Not applicable

9(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

NEED:			
The proposed pipeline is required for service delivery in the area and ensures current and future water demands. The Lilyvale and Shellyvale development as well as the other developments in the area is in need of service infrastructure. The pipeline will thus provide a reliable means of transport of sewage to the waste water treatment works. The provision of this basic service is likely to contribute towards an improved quality of life.			
1.	Was the relevant provincial planning department involved in the application?	YES X	NO
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES X	NO
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		

DESIRABILITY:			
The proposed construction is in order to ensure adequate sanitation service delivery for the Lilyvale and Shellyvale developments. Employment opportunities and capacity building are likely to be provided to local communities.			
1.	Does the proposed land use / development fit the surrounding area?	YES X	NO
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES X	NO
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES X	NO
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
5.	Will the proposed land use / development impact on the sense of place?	YES	NO X
6.	Will the proposed land use / development set a precedent?	YES	NO X
7.	Will any person's rights be affected by the proposed land use / development?	YES	NO X
8.	Will the proposed land use / development compromise the "urban edge"?	YES	NO X
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES X	NO
2.	Explain: NOTE: Necessary basic services provided to communities.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES X	NO
4.	Explain: NOTE: Necessary basic services provided to communities.		

10. 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, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act (Act 107 of 1998)	DESTEA	1998
National Water Act (Act 36 of 1998)	Department of Water and Sanitation	1998
National Heritage Resources Act (Act 25 of 1999)	South African Heritage Resources Agency	1999
Environmental Conservation Act (Act 73 of 1989)	DESTEA	1989
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	DESTEA	2004

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

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

YES X	NO
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If yes, what estimated quantity will be produced per month?

Unknown at present (m ³)

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

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Typical construction waste, for example rubble and general domestic waste is likely to be produced. Any excavated soil is proposed to be used for levelling of working areas. Rubble and general domestic waste is proposed to be temporarily stored in on-site waste receptacles and removed by the contractor on a regular basis. The contractor will be responsible for the disposal of construction waste / rubble. The waste will be transported and disposed of, by the contractor to an authorised landfill site. Furthermore the EMPr (refer to **Annexure F**) make recommendations with regard to best waste management practices.

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

The contractor will be responsible for the removal of construction waste from the collection area to an authorised landfill site in Bloemfontein. Hazardous waste (if any) should be disposed of at an authorised hazardous landfill site such as Holfontein.

Will the activity produce solid waste during its operational phase?

YES	NO X
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If yes, what estimated quantity will be produced per month?

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How will the solid waste be disposed of (describe)?
Not applicable

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

Not applicable

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

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO X
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If yes, what estimated quantity will be produced per month?

m ³

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

YES	NO X
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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.

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

YES	NO
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	X
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If yes, provide the particulars of the facility:

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

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

Not applicable

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES X	NO
YES	NO X

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

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:

Vehicular and dust emissions will be the only source of ambient emissions generated as a result of the proposed project. Some vehicular emissions will be present during the construction phase. There will also be the potential for dust generation during the construction phase. This may be the result of wind over exposed areas of cleared land. Dust can easily be prevented through the implementation of air pollution mitigation measures contained in the EMPr (refer to Annexure F). Construction activities will be limited to working hours.

11(d) Generation of noise

Will the activity generate noise?

YES X	NO
YES	NO X

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

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 noise in terms of type and level:

Noise associated with the development activities will be from general vehicular activities as well as construction activities, including blasting, if required. Heavy vehicles will be equipped with silencers. A blasting permit will be obtained, if blasting activities is to be undertaken. In addition, construction activities will be limited to working hours.
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12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
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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:

Unknown at present	
YES X	NO

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

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

The proposed construction will occur within 32 m of water courses. This may require the alteration of beds / banks. The applicant will obtain the necessary Water Use Authorisation (in terms of Section 21, c and i) from the Department of Water and Sanitation before construction commences.

13. ENERGY EFFICIENCY

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

The pipeline has been designed to use gravity to move sewerage to the waste water treatment works. Thus no electricity is required for pumpstations.

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

The pipeline has been designed to use gravity to move sewerage to the waste water treatment works. Thus no electricity is required for pumpstations.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section?

YES X	NO
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If YES, please complete the form entitled "Details of specialist and declaration of interest"

for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

Property description/physical address:

The pipeline crossing the stream will occur on the boundary between two properties. Landowners of RE/203 Boven Tempe are Mid Summer Consulting and of 3/2313 Lilyvale are Green Pin Properties. Please refer to property list in **Annexure H**. Also refer to locality and site maps attached (**Annexure A**).

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

Agricultural

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES	NO X
YES	NO X

Must a building plan be submitted to the local authority?

Locality map:

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Preferred Alternative:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5 X	1:7,5 – 1:5	Steeper than 1:5
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NOTE:

The application is for the water crossing only. Gradient down to the watercourse bottom is relatively steep, but the pipeline will cross over the weir. The gradient of the hillslope on which pipeline occur is relatively steep. The pipeline will run parallel with the hillslope with a slight decline as to ensure sewerage moves due to gravity. Refer to 3D plan attached in **Annexure A**.

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline

2.2 Plateau

2.3 Side slope of hill/mountain X

2.4 Closed valley

2.5 Open valley

2.6 Plain

2.7 Undulating plain / low hills

2.8 Dune

2.9 Seafront

NOTE:

The application is for the water crossing only. Gradient down to the watercourse bottom is relatively steep. The gradient of the hillslope on which the water crossing will occur is relatively steep. The rest of the pipeline area will run parallel with the hillslope with a slight decline as to ensure sewerage moves due to gravity.

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

Shallow water table (less than 1.5m deep)

YES	NO X
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Dolomite, sinkhole or doline areas	YES	NO X
Seasonally wet soils (often close to water bodies)	YES X	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO X
Dispersive soils (soils that dissolve in water)	YES	NO X
Soils with high clay content (clay fraction more than 40%)	YES	NO X
Any other unstable soil or geological feature	YES	NO X
An area sensitive to erosion	YES X	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

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

Natural veld - good condition ^E	Natural veld with scattered aliens^E X	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil X

Summary of the Floristic and Ecological Report (complete report attached in **Annexure D1**):
The stream to be crossed is unnamed due to its small size but is a tributary of the Bayswater Stream. The site is in a natural condition but has been affected by human activities and is therefore somewhat degraded. The functioning of the stream has also been affected by the construction of weirs within the

main channel. Numerous weeds occur in the area but are not dominant. The weeds indicate disturbance of the area. The stream is situated in a shallow valley where it collects runoff from surrounding hills forming a ravine.

Vegetation of the area consists of Winburg Grassy Shrubland characterised by solitary hills, slopes and escarpments of mesas creating a mosaic of habitats. This vegetation type is not currently considered threatened.

The site where the pipeline crosses the stream consists of dense woodland with a low closed canopy. Dominant trees of this woodland consist of *Searsia lancea*, *Olea europaea* subsp. *africana*, *Ziziphus mucronata* and *Diospyros lycioides*. Due to the dense, closed canopy the understory is relatively sparse with a few weeds and herbs, low shrubs and climbers.

The site is considered natural and not transformed. The site does not contain any protected, rare or endangered species. Specimens of Wild Olive occur along the ravine. This is widespread and common species but is however protected and where they will be affected permits should be obtained to remove them.

The vegetation structure is considered natural and not transformed. However, the weir leads to some disturbance, but the impact is local and has diminished over time.

Human activities have degraded the available habitat to mammals. As a result it is considered likely that a viable mammal population will occur on site. However, it is unlikely that any of these will be of conservation concern. The footprint of the proposed pipeline is small and thus it is highly unlikely that mammal species will be directly affected.

The pipeline must be monitored periodically for any leakages especially where it crosses the tributary of the Bayswater Stream as the sewage waste can be detrimental to the environment. It will have to be constructed so that flooding does not cause damage to it. Fastening of the pipeline on top of the weir should ensure that the pipeline is sufficiently secured to the weir in order to prevent flood damage. The area should also be monitored for erosion and action be taken (if needed) such as construction of gabions or other measures.

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

5.1 Natural area	X
5.2 Low density residential	X
5.3 Medium density residential	X
5.4 High density residential	
5.5 Informal residentialA	

5.6 Retail commercial & warehousing	
5.7 Light industrial	
5.8 Medium industrial AN	
5.9 Heavy industrial AN	
5.10 Power station	
5.11 Office/consulting room	
5.12 Military or police base/station/compound	
5.13 Spoil heap or slimes dam ^A	
5.14 Quarry, sand or borrow pit	
5.15 Dam or reservoir	X
5.16 Hospital/medical centre	
5.17 School	
5.18 Tertiary education facility	
5.19 Church	
5.20 Old age home	
5.21 Sewage treatment plant ^A	
5.22 Train station or shunting yard ^N	
5.23 Railway line ^N	
5.24 Major road (4 lanes or more) N	X
5.25 Airport ^N	
5.26 Harbour	
5.27 Sport facilities	
5.28 Golf course	
5.29 Polo fields	
5.30 Filling station ^H	
5.31 Landfill or waste treatment site	
5.32 Plantation	
5.33 Agriculture	
5.34 River, stream or wetland	X
5.35 Nature conservation area	
5.36 Mountain, koppie or ridge	X
5.37 Museum	
5.38 Historical building	
5.39 Protected Area	
5.40 Graveyard	
5.41 Archaeological site	
5.42 Other land uses (describe)	

Natural area:

The area where proposed construction will take place does have natural vegetation, with a few weeds. Vegetation will be cleared for the pipeline.

Low density residential:

The proposed construction will not affect the houses within 500 m of the development.

Medium density residential:

Townhouses occur approximately 480 m from the proposed construction. The pipeline will be

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transporting these areas sewage to the waste water treatment works. No negative impact on these areas.

Dam:

A dam occurs approximately 470 m from the proposed construction. If all the mitigation measures are adhered to and the pipeline continually monitored for leakages during the operational phase, it will not impact the dam.

Stream:

This application is for the proposed construction of the pipeline to cross the small stream. The pipeline will be fixed to the weir crossing the stream. If all the mitigation measures are adhered to and the pipeline continually monitored for leakages during the operational phase, it will not impact the stream.

Koppie:

The proposed pipeline will be constructed parallel to the hillslope. It will be underground, except at the stream, where it will cross the weir and then go underground again.

NOTE:

Please refer to Floristic and Ecological Assessment in **Annexure D1**.

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

Major road:

This application is 250 m away from the N1 highway. The proposed construction will not affect the road.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity?

If YES, specify and explain:

If YES, specify:

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity?

If YES, specify and explain:

If YES, specify:

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including

YES	NO X
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Archaeological or palaeontological sites, on or close (within 20m) to the site?	None (refer to Heritage Exemption Letter in Annexure D2).
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If YES, explain:

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:	<p>Summary of the Heritage Exemption Letter (complete report attached in Annexure D2):</p> <p>The proposed development will impact intrusive Jurassic dolerite bedrock only, which is not considered to be palaeontologically significant. The soil overburden is not palaeontologically vulnerable and the likelihood of palaeontological impact on in situ bedrock sediments below the superficial overburden is considered to be non-existent.</p> <p>It is recommended that the proposed development is exempted from a Phase 1 palaeontological impact assessment.</p>
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Will any building or structure older than 60 years be affected in any way?	YES	NO X
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO X

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and

- (b) state—
- (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation 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, ratepayers associations and traditional authorities where appropriate. 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 inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

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.

List of authorities informed:

- Municipal Manager: Mangaung Metro Municipality
- Mangaung Metro Municipality Environmental Department: Mr RR Naidoo
- Mangaung Metro Municipality Planning: Mr C Dihemo
- Municipal Ward Councillor, Ward Code: 49400017, Cllr NA Phupha
- South African Heritage Resources Agency (SAHRA): Mr A Salomon
- Free State Heritage Resource Agency (FSHRA)
- Department of Water and Sanitation
- Department of Agriculture

List of authorities from whom comments have been received:

No comments received to date.
Please note that all comments to be received during the public participation process will be included in the final BAR.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority. Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

YES	NO X
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If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

No comments received to date.
Please note that all comments to be received during the public participation process will be included in the final BAR.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, 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.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

No comments received to date.

Please note that all comments to be received during the public participation process will be included in the final BAR.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

No response to comments to date as no comments was received to date.

Please note that all comments to be received during the public participation process will be included in the final BAR.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

Preferred Alternative		
	Potential Impacts	Recommended Mitigation Measures
Planning and Design	<p>Direct Impacts</p> <ul style="list-style-type: none"> • None <p>Indirect Impacts</p> <ul style="list-style-type: none"> • None <p>Cumulative Impacts</p> <ul style="list-style-type: none"> • None <p>No-go alternative</p> <ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Specimens of Wild Olive (<i>Olea europaea</i> subsp. <i>africana</i>) occur along the ravine. If any are to be removed for pipeline, permits should be obtained. • The following should be taken into consideration: <ul style="list-style-type: none"> – Erosion control measures. – Removal of vegetation. – Removal of topsoil. – Flooding.
Construction	<p>Direct Impacts</p> <ul style="list-style-type: none"> • Destruction of vegetation. • Noise elevation due to construction activities. • Destruction of habitat for small animals. • Temporary elevation of noise levels. • Temporary increase in dust. • Erosion. • Removal of Wild Olives (if any are within proposed construction area). <p>Indirect Impacts</p> <ul style="list-style-type: none"> • Potential erosion of exposed soil. • Establishment of alien / invader vegetation on disturbed areas. • Possible dumping of construction rubble and general waste on site. • Spillage of material to be utilised during the construction phase as well as untreated sewage to the surrounding environment. 	<ul style="list-style-type: none"> • Vegetation clearance will be limited to the development area. • Establishment of extensive alien species will be monitored. • No hunting, harming or capturing of any of the animals (including birds) on the site must be allowed. This must be strictly enforced. • In the event of a poisonous snake or other dangerous animals encountered on the site, an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area. • Speed limit will be enforced on the construction vehicles and these vehicles will only make use of designated roads / pathways. • Dust control measures will be implemented if nuisance dust generation occurs during the construction period. • No waste (general / construction / potential hazardous / etc.) may be dumped in the veld. • Covered receptacles will be available on site for the temporary disposal of waste. • Waste will be removed from site and disposed of at an authorised landfill site.

Preferred Alternative		
	Potential Impacts	Recommended Mitigation Measures
	<ul style="list-style-type: none"> • Surface- and groundwater pollution due to spillage of potential contaminants. • Impact on stream flow. <p>Cumulative Impacts</p> <ul style="list-style-type: none"> • Downstream pollution. <p>No-go alternative</p> <ul style="list-style-type: none"> • No opportunity for development and employment opportunities. • Lack of sufficient basic services to the community. 	<ul style="list-style-type: none"> • Disturbance on the stream must be kept to a minimum. • No dumping of construction rubble or building material in the Bloemspruit. • No littering is allowed. • All litter must be removed from the site. • Construction time and footprint in the streams must be kept to a minimum. • Storm water measures will be implemented in order to manage storm water and curb erosion. • Ensure construction of pipeline over stream is sufficiently secured in order to prevent damage caused by flooding. • Wherever the removal of topsoil is necessary, the topsoil should be stockpiled separately and protected against weed infestation and erosion. • Topsoil should be replaced on top of the soil surface and where it has been removed as soon as possible.
Operational	<p>Direct Impacts</p> <ul style="list-style-type: none"> • Changing natural flow of river. <p>Cumulative Impacts</p> <ul style="list-style-type: none"> • Establishment of alien / invader species due to previous disturbance. • The deterioration of the infrastructure in the long term. 	<ul style="list-style-type: none"> • The pipeline to be constructed will be used for transportation of sewage waste and thus the pipeline should be monitored periodically for any leakages especially where it crosses the stream. • Maintenance and repair will be undertaken on the pipeline and associated infrastructure, when necessary. • After construction the areas cleared of vegetation will be susceptible to infestation by invader weed species. The site should be monitored for the presence of invader weed species. • Establishment of alien vegetation will be removed by hand or by an approved chemical before

Preferred Alternative		
	Potential Impacts	Recommended Mitigation Measures
		<p>gestation thereof.</p> <ul style="list-style-type: none"> • Proper erosion mitigation measures should be implemented.
Decommissioning and Closure	<ul style="list-style-type: none"> • Activities associated with the decommissioning phase will be limited to the rehabilitation of areas disturbed during the construction phase. All disturbed areas will be rehabilitated. • It is not anticipated that the proposed project will cease in the nearby future. However, if full decommissioning is decided upon, a rehabilitation plan will be developed and submitted for approval. The end-use of the area will be kept in mind during the compilation of the rehabilitation plan. 	
	<p>Direct Impacts</p> <ul style="list-style-type: none"> • No impact. <p>Indirect Impacts</p> <ul style="list-style-type: none"> • Potential erosion of exposed soil. • Potential dumping of waste on site. • Potential establishment of alien vegetation in rehabilitated areas. <p>Cumulative Impacts</p> <ul style="list-style-type: none"> • Downstream water pollution. <p>No-go alternative</p> <ul style="list-style-type: none"> • The 'no-go' alternative will result in providing an alternative route for the sewage pipeline. An alternative route will most probably not be able to move the waste with gravity and thus pump stations etc. would have to be installed. 	<ul style="list-style-type: none"> • After cessation of construction activities on site, the area will be rehabilitated to acceptable standards. • All temporary infrastructure related to the construction phase will be removed from site. • Excavated rocks may not be left in heaps and must be removed or distributed evenly over the terrain to represent natural environment. • Compacted areas must be ripped. • Roads not to be utilised afterwards must be rehabilitated. • Temporary concrete surfaces will be removed. • The establishment of natural occurring vegetation will be encouraged. • No waste will be dumped on site and any waste occurring on site will be removed and disposed of according to best practices. • All spillages will be treated and disposed of at an authorised facility. • Establishment of extensive alien species will be monitored. Problematic weeds must be

Preferred Alternative		
	Potential Impacts	Recommended Mitigation Measures
		<p>eradicated where established.</p> <ul style="list-style-type: none"> Stream crossing must be inspected for erosion due to construction. If any areas are identified it must be remedied. A rehabilitation plan will be developed if it is decided to remove the proposed pipeline and associated infrastructure. This plan will include management and mitigation measures to be implemented during the decommissioning of the project.

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity 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.

Preferred Alternative

By implementing the recommendations of the report, the impact of the pipeline's construction phase will be kept to a minimum. Expected impacts are mostly related to the construction phase. Any other possible impact can be mitigated if the recommended mitigation measures as mentioned in the EMPr (attached in **Annexure F**), is adhered to.

No-Go Alternative

The proposed pipeline and associated infrastructure is considered essential to enable the municipality to provide adequate basic services. The proposed project will provide adequate sanitation infrastructure for the Lilyvale and Shellyvale Developments.

SECTION E. RECOMMENDATION OF 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)?

YES X	NO
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

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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:

Please refer to the recommended conditions and mitigation measures as listed in the EMPr (**Appendix F**).

Is an EMPr attached?

YES X	NO
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The EMPr must be attached as Appendix F.