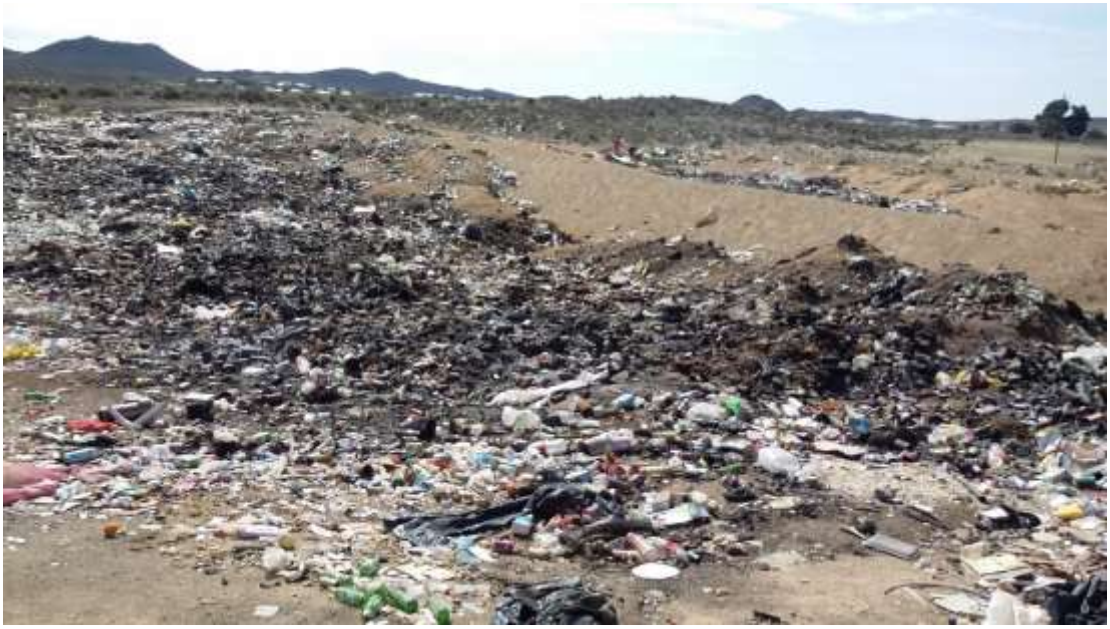
# Draft Scoping Report in support of a Waste Management License for the Operation of the existing Williston Landfill, Karoo Hoogland Local Municipality, Northern Cape




**Prepared By:**

**AECOM SA (Pty) Ltd**

**PO Box 3173**

**Pretoria, 0001**

**Prepared For:**

**Karoo Hoogland Local Municipality**

**Private Bag X3**

**Williston, 8920**

| | |
|---|---|
| ***TITLE*** | *Draft Scoping Report in support of a Waste Management License for the Operation of the Williston Landfill.* |
| ***Applicant*** | *Karoo Hoogland Local Municipality* |
| ***AECOM Project No*** | *60437185* |
| ***Status of Report*** | *Draft Scoping Report* |
| ***Date of this Issue*** | *November 2015* |

***For AECOM SA (Pty) Ltd / SE Solutions (Pty) Ltd***

| | | Initials & Surname | Signature | Date |
|---|---|---|---|---|
| Compiled by | : | E Mmotong | | November 2015 |
| Reviewed by | : | Johan Hayes | | November 2015 |
| Approved by | : | Victoria Napier | | November 2015 |

# Executive Summary

## BACKGROUND TO THE PROJECT

The Department of Environmental Affairs (DEA) commissioned a study in 2007, completed in 2009, that aimed at identifying and determining the number of waste disposal facilities in South Africa that are not licenced. Of a total of 581 sites that were identified, 431 needed to be licensed. It was evident from the study that Local Municipalities (LMs) did not have adequate training or funding for lodging applications to licence their unlicensed waste disposal facilities or the management thereof. The Minister undertook to begin the process of licencing these sites, with a target that all would be licenced by 2013/2014. Subsequently, the DEA has identified an additional 57 municipal waste disposal facilities which must be licensed during the 2014/15 financial year. The licensing of the Williston landfill falls within the scope of this process.

Sustainable Environmental Solutions (Pty) Ltd (SE Solutions), in association with AECOM SA (Pty) Ltd (AECOM), was appointed by the DEA to conduct the required environmental legislative process to apply for a Waste Management License (WML) for the operation of the existing Williston Landfill (the Project), on behalf of the Karoo Hoogland LM.

## PROJECT AREA

The existing Williston Landfill is located approximately 1.5 km south-west of the Central Business District (CBD) of Williston. The landfill is situated on Erf 255, Portion 0 RE with a footprint size of approximately 116,880 $m^2$.

## PROJECT DESCRIPTION

The existing unlicensed Williston Landfill is operated by the Karoo Hoogland Local Municipality (LM), the applicant for the proposed WML.

There is no fencing, access control or effective waste management being undertaken. Waste disposal is currently taking place via trenching. No liners are installed and once waste is disposed of, the municipal employees burn the waste. Abattoir waste (blood, intestines, skins and carcasses) are dumped along with the general domestic waste. Some Urine Diverted System sludge is also dumped in the trenches. Although waste disposal quantities are not noted, it is estimated that approximately 20$m^3$ of waste per month (general and hazardous) is disposed of at the facility. Waste generated by farming activities in the surrounding areas is also disposed of at the existing landfill.

## APPLICATION PROCESS

The Project is considered a waste management activity that may have a detrimental effect on the environment and for which authorisation in the form of a WML is required from the Northern Cape Department of Environment and Nature Conservation (DENC) in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA). The Project does not comprise activities listed in the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) 2014 Environmental Impact Assessment (EIA) Regulations.

Due to the current disposal activities at the landfill, a full Scoping and Environmental Impact Reporting (S&EIR) application process is required in order to obtain the WML.

Scoping Phase:

The EIA process is currently in the Scoping Phase and this report documents the outcomes of the Scoping Phase and the Plan of Study for EIA. The draft version of the Scoping Report is presented to the public and registered Interested and Affected Parties (I&APs) for a 30-day review and comment period. The Draft Scoping Report with comment sheets was distributed to the following public venues in the project area from 25 November 2015 – 15 January 2016:

| Venue | Address |
|---|---|
| **Karoo Hoogland Local Municipality** | 2 Mulder Street, Williston |
| **W K van der Spuy Public Library** | Herbs Street, Williston |

Ms Bongi Shinga from AECOM can be contacted on bongi@deawaste2015.co.za or Tel. 012 421 3500 during office hours for any queries and/or to submit comments on the Draft Scoping Report.

EIA Phase:

The landfill will be assessed in terms of the current impact on the environment and the nature of the status of the landfill (application for operations). The impacts assessed will cover operations, closure and decommissioning, as the site already exists. A Plan of Study for EIA is included in this report.

The site will be classified according to the Waste Classification and Management Regulations promulgated in August 2013, as well as the DWS Minimum Requirements for Waste Disposal by Landfill. This will determine the level of detail required in the lining or capping designs of the various facilities, either during operations or for closure.

When all the necessary information has been gathered, the preliminary design requirements for the landfill will be addressed. The preliminary design will be characterised by some of the following activities, where applicable:

- Determine the landfill footprint, the available airspace and subsequently the expected lifespan of the facility;
- Liner Design – depending on the waste characteristics a suitable liner for the site will be designed either for the capping of the cells or barrier systems at the bottom of the cells or both;
- Preliminary design of stormwater and leachate management system; and,
- Recommendation for site operational procedures.

Decision-making Phase

Once all issues have been addressed by the Environmental Assessment Practitioner (EAP) and presented in an EIA report, the report will be submitted to the DENC for decision-making after all registered I&APs have had the opportunity to review and comment on the EIA report. Once the WML (positive or negative) has been issued, all I&APs will be notified of the decision and have the opportunity to appeal the decision should they not agree with the authorisation issued or any conditions of authorisation.

# Table of Contents

# List of Figures



# List of Tables

# Appendices

# List of Abbreviations

| | |
|---|---|
| **°C** | Degrees Celsius |
| **CA** | Competent Authority |
| **BID** | Background Information Document |
| **CBD** | Central Business District |
| **CRR** | Comment and Response Report |
| **DEA** | Department of Environmental Affairs |
| **DEAT** | Department of Environmental Affairs and Tourism |
| **DENC** | Department of Environment and Nature Conservation |
| **DSR** | Draft Scoping Report |
| **DWS** | Department of Water & Sanitation |
| **EA** | Environmental Authorisation |
| **EAP** | Environmental Assessment Practitioner |
| **EIA** | Environmental Impact Assessment |
| **EMPr** | Environmental Management Programme |
| **GIS** | Geographical Information System |
| **GN R** | Government Notice Regulation |
| **Ha** | Hectares |
| **HIA** | Heritage Impact Assessment |
| **I&AP(s)** | Interested and Affected Party (-ies) |
| **IEM** | Integrated Environmental Management |
| **IDP** | Integrated Development Plan |
| **IWMP** | Integrated Waste Management Plan |
| **km** | kilometre |
| **m** | metre |
| **NEMA** | National Environmental Management Act, 1998 (Act No. 107 of 1998) |
| **NEMBA** | National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) |
| **NEMWA** | National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) |
| **NWA** | National Water Act, 1998 (Act No. 36 of 1998) |
| **PPP** | Public Participation Process |
| **RDL** | Red Data Listed |
| **SABAP** | South African Bird Atlas Project |
| **SAHRA** | South African Heritage Resources Agency |
| **SANBI** | South African National Biodiversity Institute |
| **SANS** | South African National Standards |
| **SAWS** | South African Weather Services |
| **SDF** | Spatial Development Framework |
| **SIA** | Social Impact Assessment |
| **WCMR** | Waste Classification Management Regulations |

| | |
|---|---|
| **WML** | Waste Management License |
| **WUL** | Water Use License |

# 1. INTRODUCTION

## 1.1 Background

The Department of Environmental Affairs (DEA) commissioned a study in 2007, completed in 2009, that aimed at identifying and determining the number of waste disposal facilities in South Africa that are not licenced. Of a total of 581 sites that were identified, 431 needed to be licensed. It was evident from the study that Local Municipalities (LMs) did not have adequate training or funding for lodging applications to licence their unlicensed waste disposal facilities or the management thereof. The Minister undertook to begin the process of licencing these sites, with a target that all would be licenced by 2013/2014. Subsequently, the DEA has identified an additional 57 municipal waste disposal facilities which must be licensed during the 2014/15 financial year. The licensing of the Williston landfill falls within the scope of this process.

## 1.2 The Proposed Project

Sustainable Environmental Solutions (Pty) Ltd (SE Solutions), in association with AECOM SA (Pty) Ltd (AECOM), was appointed by the DEA to conduct the required environmental legislative process to apply for a Waste Management License (WML) for the operation of the existing Williston Landfill (the Project), on behalf of the Karoo Hoogland LM. The existing unlicensed Williston landfill is operated by the Karoo Hoogland LM, the applicant for the proposed WML.

Although no record keeping of the influx of waste is being done, it is estimated that the site receives approximately 20$m^3$ of waste per month (general and hazardous). Waste generated by farming activities in the surrounding areas is also disposed of at the existing landfill.

## 1.3 The Environmental Impact Assessment Process

The proposed development is considered a waste management activity that may have a detrimental effect on the environment and for which authorisation in the form of a WML is required from the Northern Cape Department of Environment and Nature Conservation (DENC) in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA). The proposed development does not comprise activities listed in the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). Due to the nature of the proposed development, and the requirement to apply for a WML, a full Scoping and Environmental Impact Reporting (S&EIR) application process is required.

This EIA process assists the DENC, to make an informed decision on whether the proposed license to operate the existing landfill should be issued or not, and under what conditions an authorisation could be granted. In the EIA process, all potentially significant negative and positive impacts (social, economic and biophysical environments) of the activity are identified and assessed. An S&EIR application procss entails the following main phases:

- Scoping Phase;
- EIA Phase; and
- Decision-Making Phase.

### 1.3.1 Scoping Phase

The S&EIR application process is currently in the Scoping Phase, and its main purpose is to identify and investigate issues related to the proposed development and list potentially significant impacts that require further assessment in the EIA Phase (Section 8).

Issues and impacts are identified by the project team using theoretical knowledge, experience on similar projects, and consultation with I&APs and other key stakeholders (such as national, regional and local

government departments). The Scoping Phase also identifies the most appropriate means by which the potential impacts will be assessed (Section 9.3).

To date, public participation was conducted to identify potential I&APs, inviting I&APs to register as well as to notify I&APs of the S&EIR application process to obtain a WML for the existing landfill site.

Input from I&APs have been considered and integrated into this Draft Scoping Report (DSR). This DSR is available for public comment over a period of 30 days (excluding public holidays), from 25 November 2015 – 15 January 2016. The objective of the public comment period is for I&APs to raise issues about the information presented in the report and for them to raise any other issues related to the proposed Project. It also provides an opportunity for I&APs to see if their issues have been captured correctly.

### 1.3.2 Environmental Impact Assessment Phase

All potential significant environmental issues (social, economic and biophysical) associated with the proposed Project that were identified in the Scoping Phase will be further investigated in the EIA Phase. Included in the EIA Phase is the identification of mitigation measures and how these will be addressed, which informs the Environmental Management Programme (EMPr).

The Draft EIA Report will be made available for public comment over a period of 30 days. The CRR will be updated with all comments received during this period and included within the Final EIA Report submitted to the DENC for decision-making on the application.

### 1.3.3 Decision-Making Phase

The Final EIA Report is submitted to DENC and reviewed by officials. A WML is drafted and issued with conditions that the Karoo Hoogland LM must adhere to. All I&APs will be notified of the decision and appeal provisions. Should I&APs or the Karoo Hoogland LM disagree with the decision taken, they may enter into an appeal process.

## 1.4 Objectives of the Draft Scoping Report

The purpose of this DSR is to document the outcomes of the Scoping Phase, for submission to the DENC for approval as input into the EIA Phase that will follow. In addition, the scoping report provides the following information:

- Description of the property on which the activity is to be undertaken and the location of the property;
- Methodology applied to conduct the scoping investigations;
- Details of the EAP and their expertise to carry out the scoping procedures;
- Key legislation and guidelines that have been considered in the preparation of the Scoping Report;
- Details of the current state of the environment;
- Identifies and describes the anticipated environmental and social impacts, including cumulative impacts in respect of the listed activities;
- Need and desirability of the proposed activity, including advantages, disadvantages and alternatives;
- Reasonable land use alternatives, alternative means of carrying out the operations and the consequence of not proceeding with the proposed operation;
- Process of engagement with identified I&APs; and,
- The Plan of Study for conducting the EIA including the nature and extent of studies to be included in the EIA.

Prior to submission of the Final Scoping Report (FSR) to the DENC, I&APs are given an opportunity to review the DSR and comment on the proposed Project.

## 1.5 Structure of the Report

This report contains the following, in accordance with Appendix 2 of the EIA Regulations (2014):

| Chapter | Description |
|---|---|
| **Chapter 1** | Introduction |
| **Chapter 2** | Project team details |
| **Chapter 3** | Overview of the project |
| **Chapter 4** | Description of the project alternatives |
| **Chapter 5** | Description of the affected environment |
| **Chapter 6** | Legislation and guidelines that pertain to the project |
| **Chapter 7** | Public Participation Process |
| **Chapter 8** | Description of environmental issues and potential impacts |
| **Chapter 9** | Plan of study for EIA |
| **Chapter 10** | Conclusion and Recommendations |
| **Chapter 11** | References |

## 1.6 Assumptions and Limitations

The following assumptions, limitations and constraints, associated with this Project, have been identified for this S&EIR process:

- The EIA process is multi-disciplinary, which is informed by the project team. It is thus necessary to assume that the information provided by the project team is accurate and true, at the time.
- Data shown in the maps were supplied by various sources and was used as received. The data was not verified.
- A preliminary site investigation was undertaken by the EAP's project team in consultation with representatives of the Applicant on 11 September 2015 to identify activities triggered and studies required to be conducted.
- Public Participation Process (PPP): every effort was made to inform all possible stakeholders within the Project area. Information presented by the stakeholders is presumed to be accurate and has been presented timeously in the study.

# 2. PROJECT TEAM

## 2.1 The Applicant

The Karoo Hoogland LM is applying for a WML for the operation of the existing unlicensed Williston Landfill. Details of the Applicant are provided in Table 2-1.

**Table 2-1: Details of the Applicant**

| | |
|---|---|
| **Applicant** | **Karoo Hoogland Local Municipality** |
| **Contact Person** | Mr Gustav Von Mollendorf |
| **Postal Address** | Private Bag X03, Williston |
| **Telephone** | 053 391 3003 |
| **Fax** | 053 391 3294 |
| **E-mail Address** | Khm.municipalmanager@gmail.com |
| **Applicant's Representatives** | |
| **Mr F Lotter** | Technical Manager: Waste (Karoo Hoogland LM)<br>fraseradmin@telkomsa.net |

## 2.2 Environmental Assessment Practitioner

SE Solutions, in association with AECOM, were appointed to conduct the required application process for the proposed Project. Details of the Environmental Assessment Practitioner (EAP) are contained in Table 2-2.

**Table 2-2: Details of the EAP**

| | |
|---|---|
| **Environmental Consultant** | **Sustainable Environmental Solutions (Pty) Ltd** |
| **Environmental Assessment Practitioner** | Ms Victoria Napier |
| **Postal Address** | Suite 51, Private Bag X108, Centurion, 0046 |
| **Telephone** | 078 278 2898 |
| **Fax** | 086 664 6885 |
| **E-mail Address** | vici@sesolutions.co.za |

Victoria Napier has more than 7 years' experience as an EAP Project Manager, with over 9 years as an EAP. She is highly experienced in managing large multi-disciplinary project teams for various types of environmental assessments and authorisations, and has often been described by colleagues and clients as having specialist Project Management skills. In addition, she has experience in training and skills transfer within the Environmental Management field. Vici is a Registered Professional Natural Scientist with SACNASP (400215/09) and a member of the South African Chapter of the International Association of Impact Assessment (IAIA). A copy of Vici's CV is contained in Appendix D.

## 2.3 The EIA Project Team

Details of the Project Team assisting the EAP in conducting the EIA study in support of a WML for the Williston Landfill are indicated Table 2-3 below. Project Team CVs are attached in Appendix E.

**Table 2-3: EIA Project Team**

| Name | Role on Team | Company |
|---|---|---|
| **EIA Team** | | |
| **Mike Howard** | Environmental Executive | AECOM |

| Name | Role on Team | Company |
|---|---|---|
| **Johan Hayes** | Project Manager | AECOM |
| **Emmanuel Mmotong** | Candidate Environmental Technologist | AECOM |
| **Bongi Shinga** | Public Participation Practitioner | AECOM |
| **Mamokete Maimane** | Public Participation Practitioner | AECOM |

# 3. OVERVIEW OF THE PROJECT

## 3.1 Project Area

The existing Williston landfill is located approximately 1500 m south west of the Central Business District (CBD) of Williston. The landfill is situated on Erf 255, Portion 0 Remaining Extent (RE), directly west of the Williston water treatment works (Surveyor-general Cadastral Code 21 digit site C02600030000025500000) (Figure 3-1).

## 3.2 Description of Existing Williston Landfill

The existing Williston landfill with a footprint area of approximately 116,880 $m^2$ is currently unlicensed. The site is not fenced with no access control or effective waste management being undertaken. Waste disposal is currently taking place via trenching. No liners are installed and once waste is disposed of, the municipal employees burn the waste. Abattoir waste (blood, intestines, skins and carcasses) are dumped along with the general domestic waste. Some Urine Diverted System sludge is also dumped in the trenches. Although waste disposal quantities are not noted, it is estimated that approximately 20$m^3$ of waste per month is disposed of at the facility.

## 3.3 Waste Classification of the Landfill Site

The landfill will be assessed in terms of the current impact on the environment and the current operational status of the landfill compared to the minimum requirements (application for Operation) as prescribed by the DWS. The impacts assessed will cover operations, closure and decommissioning, as the site already exists and operates.

The WCMR state that all domestic waste landfills need to, as a minimum, adhere to the lining requirements for a Class B landfill as described in Regulation 636 of the WCMR. For closure and capping design purposes the disposal site will be assessed using the principles contained in the 1998 DWS' (then Department of Water Affairs and Forestry) Minimum Requirements for Waste Disposal by Landfill document.

## 3.4 Waste Management of the Licensed Landfill

### 3.4.1 Design Solution

When all the necessary information has been gathered, the preliminary design requirements for the landfill will be addressed. The preliminary design will be characterised by some of the following activities, where applicable:

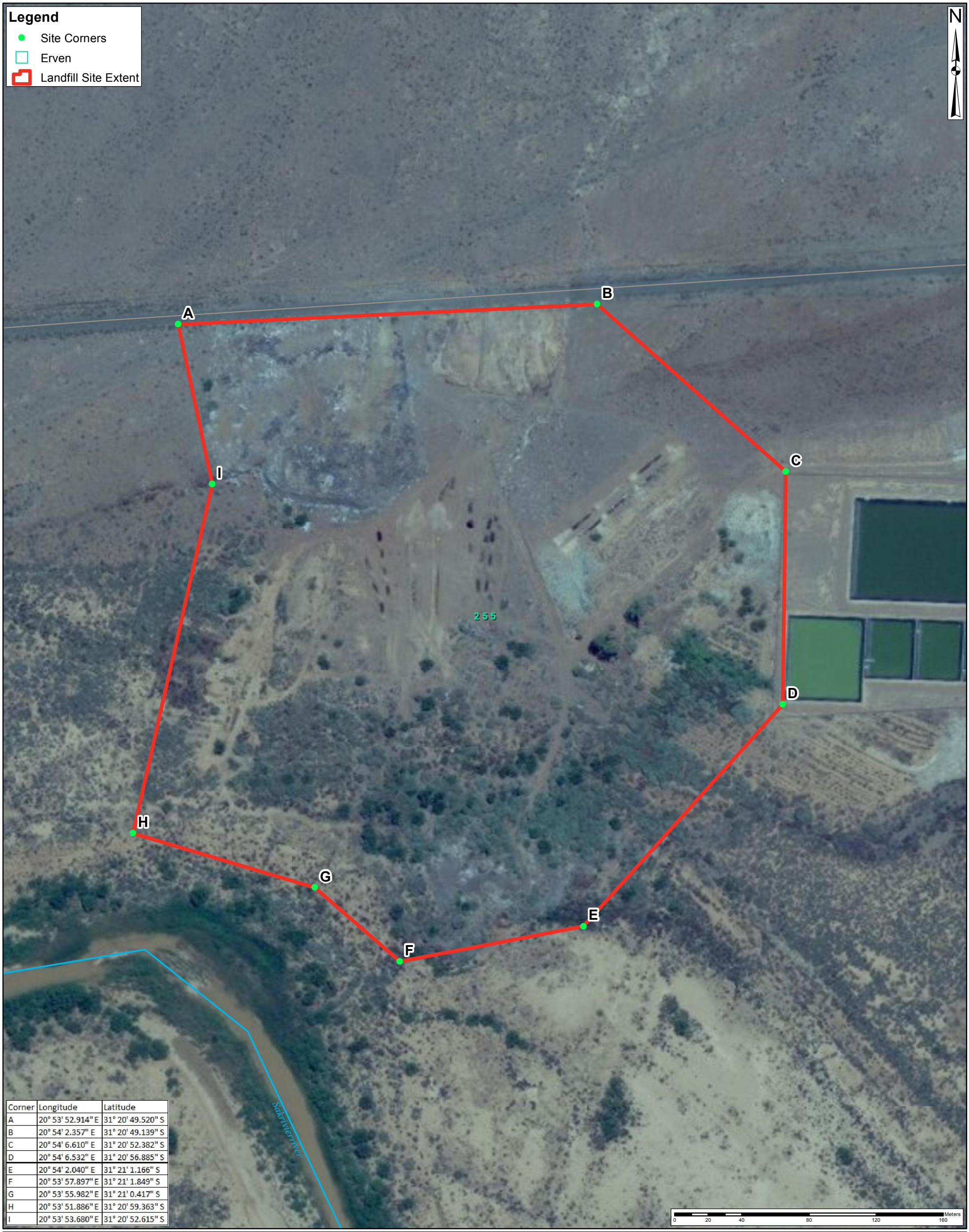
- Determine the landfill footprint, the available airspace and subsequently the expected lifespan of the facility;
- Liner Design – depending on the waste characteristics a suitable liner for the site will be designed either for the capping of the cells or barrier systems at the bottom of the cells or both;
- Preliminary design of stormwater and leachate management system; and,
- Recommendation for site operational procedures.

### 3.4.2 Costing of the Proposed Solution

The construction cost for addressing the design requirements will be estimated. This cost estimate can be used by the DENC and the LM to plan and budget for the implementation of the requirements of the WML.

## 3.5 Need and Desirability

Service delivery is an issue of national concern / importance. Thus, the licensing of the illegal Williston landfill is considered part of this programme. This licensing process undertaken in terms of the NEMWA is in accordance with an initiative driven by the DEA to ensure the legal compliance of all municipal landfills, which in turn ensures appropriate and effective environmental management of these sites. In addition, the licensing process is aligned with the Karoo Hoogland LM Integrated Development Plan (IDP), indicating the requirement to license the existing landfill.




| Corner | Longitude | Latitude |
|---|---|---|
| A | 20° 53' 52.914" E | 31° 20' 49.520" S |
| B | 20° 54' 2.357" E | 31° 20' 49.139" S |
| C | 20° 54' 6.610" E | 31° 20' 52.382" S |
| D | 20° 54' 6.532" E | 31° 20' 56.885" S |
| E | 20° 54' 2.040" E | 31° 21' 1.166" S |
| F | 20° 53' 57.897" E | 31° 21' 1.849" S |
| G | 20° 53' 55.982" E | 31° 21' 0.417" S |
| H | 20° 53' 51.886" E | 31° 20' 59.363" S |
| I | 20° 53' 53.680" E | 31° 20' 52.615" S |

| | |
|---|---|
| Project Title: | **DEA Waste Licenses 2015** |
| Map Title: | **Detailed Locality Map of Williston Landfill Site** |



AECOM

Scale 1:2 000
(When page size is: A3 portrait)

**Figure**

| | |
|---|---|
| Projection: | Transverse Mercator |
| Datum: | Hartebeesthoek 1994 |
| | Central Meridian: 21.0 |
| Compiled By: | GA Maree |
| GIS QC By: | TBD |
| Approved By: | J Hayes |
| Date Saved: | 2015/10/22 |
| Project Number: | 60437185 |
| Map Ref: | DetailedLocalityMap_Corners.mxd |
| Revision: | 00 DDP Ref.: 3 of 13 |

**Sources:**
© OpenStreetMap & contributors
CD:NGI
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
GISCOE, Municipal Demarcation Board, NGI

Y:\7_Projects\60437185_DEA_Waste_Licenses_2015\mxd\DetailedLocalityMap_Corners.mxd

# 4. DESCRIPTION OF ALTERNATIVES

“Alternatives are different means of meeting the general purpose and need of a proposed activity. The identification, description, evaluation and comparison of alternatives are important for ensuring the objectivity of the assessment process. In cases where there is no objective and thorough assessment of alternatives, the EIA process usually only confirms a chosen activity and the value of the assessment as an input to decision-making may be compromised” (DEAT Guideline 4, 2006).

## 4.1 Alternatives Considered

The identification of alternatives is an important component of the EIA process. However, as the Project entails the licensing of an existing landfill, project location / site alternatives are not currently considered in the EIA process.

During the EIA Phase, various design alternatives will be considered to ensure that existing and future waste management activities are aligned to all applicable environmental and waste management legislation.

### 4.1.1 Do Nothing Alternative

The DEA stresses that the “Do-Nothing” approach should be considered in all cases.

The “Do-Nothing” approach entails that the existing Williston Landfill is not licensed. Should such licensing not take place, poor waste management at this landfill will continue. Furthermore, negative environmental and social impacts associated with the current lack of waste management practices will not be rectified and/or mitigated.

The “Do-Nothing” scenario will be the basis against which the acceptability of the identified environmental issues, and, technically and economically feasible alternatives, will be assessed during a comparative alternatives assessment in the EIA Phase.

# 5. DESCRIPTION OF AFFECTED ENVIRONMENT

## 5.1 Study Area Context

The Karoo Hoogland LM is situated in the most southern part of the Northern Cape and falls within the area of jurisdiction of Namaqua District Municipality with its head office located in Springbok. The Karoo Hoogland Municipality is divided into 4 Wards and there is an estimate of 2204 households in the area serviced by the Municipality (IDP 2015/2016).

Williston lies on the R63 between Calvinia and Carnarvon in the Northern Cape Province, approximately 103 km north-east of Calvina and 140 km south-west if Carnarvon. Towns that are close to Williston include Fraserburg, Carnarvon, and Brandvlei.

## 5.2 Physical Environment

### 5.2.1 Climate and Atmospheric Conditions

Williston is situated within a dry region with weather that is typical of desert and semi-desert areas. Summer temperatures usually reach between 30 and 35°C degrees during the month of January and can sometimes exceed 40°C. Winter temperatures are mild during the day reaching between 20 and 25°C. Nights can be extremely cold with night temperatures often below 0°C.

The rainfall is low and unreliable. The annual rainfall is between 50 mm to 400mm. Potential annual evapotranspiration is between 12-15 times the mean annual precipitations.

### 5.2.2 Topography

Williston is situated at a height of 1450 metres above sea level (masl) on the southwest escarpment of the inland plateau. At this height the area is exposed to all the cold air coming from the southwest. Due to the low moisture levels and thin air, heat radiation at night is high.

### 5.2.3 Geology

The Karoo Supergroup of Permian age consists of the Dwyka Formation, Ecca Group and Beaufort Group. The Beaufort group overlies the Ecca group and consists of alternating mudstone (red in places) and sandstone. It sub-divides into the lower Abrahamskraal Formation (1 500m-2 000m thick) and an upper Teekloof formation (±1400m thick) with the boundary arbitrarily at the base of the so-called “Poortjie Sandstone”.

The geology underlying the Nama-Karoo biome is varied, as the distribution of this biome is determined primarily by rainfall. The rain falls in summer, and varies between 100 and 520mm per year. This also determines the predominant soil type - over 80% of the area is covered by a lime-rich, weakly developed soil over rock. Although less than 5% of rain reaches the rivers, the high erodibility of soils poses a major problem where overgrazing occurs.

### 5.2.4 Existing Land Use and Land Cover

The large area of the Karoo Hoogland is dominated by farming, in particular sheep farming, with the climate, vegetation and large tracts of grazing land ideally suited to this economic pursuit. As such the land use to the north, south and west are used for grazing with the Williston Water Treatment Works (WTW) situated to the east (Figure 5-1).

### 5.2.5 Hydrology

There are no perennial rivers in Karoo Hoogland LM and groundwater is the main water source. A total of 12 groundwater sources are present within the LM (IDP 2015/2016). Water is a scarce commodity and effective water management must be a priority. No natural water bodies occur within close proximity to the existing Williston landfill. Similarly, there are no sensitive landscapes (e.g. wetlands) identified within close proximity to the Project site (Figure 5-1).

## 5.3 Biophysical Environment

### 5.3.1 Vegetation

The site falls within the Bushmanland Vloere vegetation type (Mucina & Rutherford 2006), which follows the course of the Sak River, and the Western Upper Karroo vegetation type is present adjacent to the site to the north and south.

Salt pans and broad riverbeds are included in the Bushmanland Vloere, as well as several dysfunctional river tributaries. The vegetation type is present on flat and very even surfaces. The soil is mostly silt and clayey alluvial soils and often has a high salt content. In some areas, erosion can be considerable. Several small dwarf shrub species are present in the vegetation type, including *Rhigozum trichotomum* and several species of Salsola and Lycium and several succulent dwarf shrubs. A few thickets of Vachellia karroo (*Acacia karroo*), *Parkinsonia africana* and *Lebeckia linearifolia* are also present. The vegetation type is classified as Least Threatened in Mucina & Rutherford (2006). The vegetation type is not listed in the "National list of ecosystems that are threatened and in need of protection" under the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) as published in the Government Notice of 11 December 2011.

#### *5.3.1.1 Weedy vegetation*

Most of the vegetation on site falls within this unit and the unit is dominated by *Prosopis glandulosa*, *Lycium pumilum* and *Atriplex nummularia*, with several other shrub species. Large areas are bare of vegetation, or with single shrub or forb species present and litter is present through-out most of this unit. The remaining vegetation, mostly on the southern portion of the site, is dominated by weedy and alien species. The species diversity is very low in this area. It is however possible that some of the annual species were not observed during the site visit. Since few of the species were flowering or had fruits / seeds at the time of the site visit, several species were only identified up to genus level.

This vegetation unit is considered to be disturbed and of low conservation importance. The species observed are common to the area and several occur in disturbed areas.

#### *5.3.1.2 Phragmites australis artificial wetland unit*

This vegetation unit enters the site from the waste water treatment works to the east and transects the south-eastern portion of the site. A pool of stagnant water is also present in the eastern portion of the site. The stagnant water smells strongly of sewage and it is assumed that the water is likely polluted by sewage. The vegetation is dominated by *Phragmites australis* and the remainder of the vegetation is very similar to the species observed in the weedy vegetation unit. The main distinction is the presence of *Phragmites australis*. This vegetation unit therefore also provides habitat for animal species that would not normally have been present on site.

#### *5.3.1.3 Rushia dwarf shrub veld*

Rushia dwarf shrub veld is present in the north-eastern corner of the site, but mainly outside the site to the north-east. The vegetation is very similar to the vegetation further away. The dominant species is the succulent dwarf shrub *Ruschia cf intricate*. A number of other succulent and forb species are present. Only a few small clumps of grasses are present. The portion of this vegetation type located adjacent to site is littered by rubbish from the landfill. Most of the litter was probably blown into this area by the wind.

No species of conservation importance were observed in this area and the species are mostly common in the area.

#### *5.3.1.4 Invasive species*

The invasive species *Prosopsis glandulosa* is the dominant species in the southern portion of the site. The species *Xanthium spinosum* was also observed in this area and in the artificial wetland unit on site.

### 5.3.2 Centres of floristic endemism

The Succulent Karoo Region is a floristic unit in the western portion of the Northern Cape Province and in portions of the Western Cape Province, and contains several centres of floristic endemism. This region mostly overlaps with the Succulent Karoo Biome (Van Wyk & Smith 2001).

The site is located on the boundary of the Hantam-Roggeveld Centre of Floristic Endemism which is located in the Succulent Karroo Region. This centre has more than 250 endemic or near-endemic species. The Centre is located on gently undulating to steeply rolling plateaus, with low mountains and scattered hills, with the high altitude areas mostly located around Sutherland and Fraserburg. The Centre is mostly in a winter rainfall area, but the eastern area, including Williston, is located on the transition zone between the summer and winter rainfall area.

The family with the highest number of endemic species is the Iridaceae with at least 60 species, and several endemic Hesperantha and Romulea species. Families with several endemic species in the Centre include the Liliaceae (40 species), Scrophulariaceae (35), Asteraceae (15) and Fabaceae (10). At least 8 grass species (Poaceae) are also indigenous. Endemic succulent species are poorly represented in the Centre.

### 5.3.3 Fauna

Several mammal species have been observed in the area (Table 5-1) however, these are fairly common and not of conservation importance. These species are most likely to be present in the riparian zone adjacent to the site.

**Table 5-1: Mammal Species that could occur on site**

| Mammal species observed in the area (ADU database) Family | Species | Common name | Red list category | Atlas region endemic |
|---|---|---|---|---|
| Canidae | *Canis mesomelas* | Black-backed Jackal | Least Concern | Yes |
| Canidae | *Otocyon megalotis* | Bat-eared Fox | Least Concern | Yes |
| Canidae | *Vulpes chama* | Cape Fox | Least Concern | Yes |
| Felidae | *Caracal caracal* | Caracal | Least Concern | Yes |
| Hyaenidae | *Proteles cristata* | Aardwolf | Least Concern | Yes |
| Muridae | *Aethomys namaquensis* | Namaqua Rock Mouse | Least Concern | |
| Muridae | *Desmodillus auricularis* | Cape Short-tailed Gerbil | Least Concern | Yes |
| Muridae | *Gerbilliscus paeba* | Paeba Hairy-footed Gerbil | Least Concern | Yes |
| Muridae | *Gerbilliscus vallinus* | Brush-tailed Hairy-footed Gerbil | Least Concern | Yes |
| Muridae | *Otomys unisulcatus* | Karoo Bush Rat | Least Concern | |
| Muridae | *Rhabdomys pumilio* | Xeric Four-striped Grass Rat | Least Concern | Yes |
| Mustelidae | *Aonyx capensis* | African Clawless Otter | Least Concern | Yes |
| Soricidae | *Crocidura cyanea* | Reddish-grey Musk Shrew | Data Deficient | Yes |
| Soricidae | *Myosorex varius* | Forest Shrew | Data Deficient | Yes |
| Vespertilionidae | *Neoromicia capensis* | Cape Serotine | Least Concern | Yes |

Please refer to Appendix C for photographs of the site.

## 5.4 Social Environment

### 5.4.1 Population

The Karoo Hoogland Municipality has a total population of approximately 11 601 persons according to STATS SA Survey done in 2011. Karoo Hoogland's average population growth rate from 2001 to 2010 was -1.7%. The current population and how it is serviced by the LM is described below:

- Households 2204 (Households serviced);
- Registered erven 4398;
- Total Households 3388 (Including Rural areas);
- Households with access to water and basic services: 2204;
- Households with access to sanitation: 2204;
- Households with access to electricity: 1984; and,
- Households with access to refuse removal: 2204.

### 5.4.2 Employment

The labour, employment and economic structure of the Karoo Hoogland LM can be summarises as follow:

- Unemployment rate –23.1% - higher than that of the Namakwa District Municipality of 19.3%.
- Skill Level – more than half (55.5%) of employed individuals the LM are classified as semi- and unskilled, showing that skills training is a high priority.
- Economic Growth – experienced a lower economic growth rate (-5.2%) than both the District and the Province (-2.1% and -0.8%, respectively) from 2008 to 2009.

### 5.4.3 Skill levels

Around 5% of the Karoo Hoogland LM's population is highly skilled, while 35.2% are skilled. The most significant portion (55.5%) of Karoo Hoogland's population is semi- and unskilled, which is higher than both the District and Provincial average (IDP 2015-2016).

### 5.4.4 Service Delivery

With reference to the provision of basic services (water, electricity and sanitation) the municipality does not face any serious challenges as all households in the municipality receive basic services such as electricity, water and sanitation.

#### *5.4.4.1 Electricity*

The LM supplies electricity to Fraserburg and parts of Williston. The other parts of Williston as well as Sutherland and the rural areas are serviced by Eskom.

#### *5.4.4.2 Waste Management and recycling*

The municipality has an Integrated Waste Management Plan (IWMP) 2014/2019 in place which was compiled by the District Municipality. Waste collection, transport and disposal are via municipal teams who collect waste twice a week. The municipality must ensure proper operation and maintenance of existing infrastructure and equipment through licensing and upgrading of landfill sites (2014/2019 IWMP).

#### *5.4.4.3 Water and Sanitation*

All households in the LM area have access to water and basic sanitation. Some of the erven in all three towns are connected to a waterborne sewerage system, while some erven are still equipped with sewerage drains and the sewerage is removed by sewerage removal vehicles. The inadequate use of these dry systems and the resultant wet mixture is disposed of on the landfill. The design of the system is to separate urine from faeces via a separate container, whereby the urine is designed to seep to the surrounding land and the dry faeces to

be composted in situ. However often there is no separation of the two wastes and thus the compost faeces becomes wet sludge which stops the composting process. The sludge therefore must be removed and this is not accepted at the local Waste Water Treatment Works, and is thus disponed to landfill.

#### *5.4.4.4 Housing*

According to standardised regional data (Quantec, 2011), the portion of households resident in informal dwellings in the Karoo Hoogland LM is less than that of the District and Province. According to the Local IDP (2009/2011) there are 215 informal dwellings (shacks) and a housing waiting list of 880 within the LM. The current IDP indicates that the LM has applied for 800 housing units. A total of 225 houses were constructed during the 2011/2012 financial year.

**Legend**

Landfill Site Extent

NFEPA Rivers
NFEPA Wetland Map
Terrestrial CBA 2

**SA Landcover**

Water Bodies
No Vegetation
Grassland
Shrubland
Ariculture
Waste Water Treatement Works
Bushmanland Vloere
Western Upper Karoo

N

A
B
C
D
E
F
G
H
I

1040
255

Sakrivier
Sak

| Corner | Longitude | Latitude |
|---|---|---|
| A | 20° 53' 52.914" E | 31° 20' 49.520" S |
| B | 20° 54' 2.357" E | 31° 20' 49.139" S |
| C | 20° 54' 6.610" E | 31° 20' 52.382" S |
| D | 20° 54' 6.532" E | 31° 20' 56.885" S |
| E | 20° 54' 2.040" E | 31° 21' 1.166" S |
| F | 20° 53' 57.897" E | 31° 21' 1.849" S |
| G | 20° 53' 55.982" E | 31° 21' 0.417" S |
| H | 20° 53' 51.886" E | 31° 20' 59.363" S |
| I | 20° 53' 53.680" E | 31° 20' 52.615" S |

0 30 60 120 180 240 Meters

| | |
|---|---|
| Project Title: | **DEA Waste Licenses 2015** |
| Map Title: | **Site Plan of** |
| | **Williston Landfill** |



AECOM

Scale 1:2 200
(When page size is: A3 portrait)

**Figure 2**

| | |
|---|---|
| Projection: | Transverse Mercator |
| Datum: | Hartebeesthoek 1994 |
| | Central Meridian: 21.0 |
| Compiled By: | GA Maree |
| GIS QC By: | TBD |
| Approved By: | J Hayes |
| Date Saved: | 2015/11/16 |
| Project Number: | 60437185 |
| Map Ref: | EnviroConsolidated.mxd |
| Revision: | 00 DDP Ref.: 3 of 13 |

CD:NGI
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
© OpenStreetMap & contributors
NFEPA, SANBI, 2011. Vegetation, SANBI 2012. CBA, SANBI BGIS.
Land Cover, GeoTerraImage (GTI) 2013.

Y:\7_Projects\60437185_DEA_Waste_Licenses_2015\mxd\EnviroConsolidated.mxd

# 6. LEGISLATIVE FRAMEWORK

## 6.1 Introduction

The overarching legal framework pertinent to the licensing of the Williston landfill site is NEMA and the associated Specific Environmental Management Acts (SEMAs). This section provides an overview of the policy and legislative context including the identification of all legislation, policies, plans, guidelines, spatial tools, municipal development frameworks and instruments applicable to the activity and which are to be considered in the EIA process.

## 6.2 Relevant National Legislation

### 6.2.1 The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

#### *6.2.1.1 Overview*

NEMWA regulates waste management in order to protect human health and the environment, by providing reasonable measures for the prevention of pollution and ecological degradation, and for securing ecologically sustainable development. It also provides for national norms and standards for regulating the management of waste by all spheres of government, providing for specific waste management measures for licensing and the control of waste management and remediation activities associated with contaminated land.

#### *6.2.1.2 National Standards for Disposal of Waste to Landfill*

The DEA promulgated Regulations and Standards under NEMWA to regulate various aspects of waste management, including the design and classification of landfills. In addition to the existing Minimum Requirements, the following Regulations will also be applicable:

- Government Notice R.634 – Waste Classification and Management Regulations;
- Government Notice R.635 – National norms and standards for the assessment of waste for landfill disposal; and,
- Government Notice R.636 – National norms and standards for disposal of waste to landfill.

As a result of the above, the design and classification of the Williston landfill will take these new Regulations on Norms and Standards into account.

#### *6.2.1.3 Activities applicable to NEMWA*

The operation of the Williston landfill includes activities listed in Categories A and B of Government Notice (GN) R 37083 of November 2013, published in terms of Section 19(1) of NEMWA, as waste management activities that may have a detrimental effect on the environment and for which authorisation is required in the form of a WML. The relevant listed activities are provided in Table 6-1, for which authorisation by means of a full S&EIR application process must be obtained.

**Table 6-1: Listed Activities in Terms of Category A and B of GN 37083 of November 2013**

| No. and Date of the Relevant Notice | Category A or B | Activity Number | Description of the Listed Activity |
|---|---|---|---|
| | | | |
| GNR 37083 of 29 November 2013 in terms of Section 19(1) of NEMWA | B | 8 | The disposal of general waste to land covering an area in excess of 200 $m^2$ and with a total capacity exceeding 25 000 tons |
| | | 9 | The disposal of inert waste to land in excess of 25 000 tons, excluding the disposal of such waste for the purposes of levelling and building which has been authorised by or under other legislation |

### 6.2.2 National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended

NEMA provides a framework for cooperative environmental governance between the various spheres of government, by establishing principles for decision-making on matters relating to the environment. Furthermore, NEMA promotes Integrated Environmental Management (IEM) to ensure sustainable resource utilisation and development and requires that the DEA be the lead agent in ensuring effective custodianship of the environment. It also provides that sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where subjected to significant human resource usage and development pressure. The NEMA principles, contained in Section 2, clearly emphasize the need to protect threatened ecosystems and are binding on all organs of state including the local authorities. Furthermore, the principles essentially guide the interpretation, administration and implementation of the Act and any other law concerned with the protection of the environment. An overarching emphasis is the principle that development must be environmentally, socially and economically sustainable.

Section 23 of NEMA further determines that IEM should be employed when any policies, programmes, plans or projects are drawn up to minimise the impact on the environment. The duty of officials to prevent pollution and ecological degradation, to promote conservation and secure ecologically sustainable development and use of natural resources, originates from the Constitution and NEMA.

For a range of listed activities and depending on the scope of the activity, the responsibility to ensure compliance with NEMA and its suite of SEMAs has been devolved to the nine provincial departments.

Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities which may not commence without an Environmental Authorisation (EA). Thus, the EA application process and activities were detailed within the 2014 EIA Regulations listed in Government Gazette No. 10328 of 4 December 2014 (GN 982, 983, 984 and 985). All activities listed in the abovementioned regulations shall be subject to an EIA process (i.e. Basic Assessment (BA) or S&EIR application processes) and will require EA from the relevant Competent Authority (CA). Section 24F of the NEMA prohibits the undertaking of identified listed activities except by virtue of being undertaken under the control of an EA from the relevant CA.

The licensing and operation of the existing Williston Landfill do not trigger listed activities in terms of NEMA. As such, EA in terms of the NEMA is not required.

### 6.2.3 National Water Act, 2008 (Act No. 36 of 2008)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) provides a framework to protect, develop, conserve and manage the nation's water resources. Water use is defined broadly in terms of NWA, and includes taking and storing water, activities which reduce stream flow, waste discharges and disposals, controlled activities (activities which impact detrimentally on a water resource), altering a watercourse, removing water found underground for certain purposes, and recreation. In general a water use must be licensed (in terms of Section 21) unless it is listed in Schedule 1, is an existing lawful use, is permissible under a general authorisation, or if a

responsible authority waives the need for a licence. Section 21 of the NWA lists the water uses for which authorisation under the Act is required.

In terms of Section 19 of the NWA "An owner of land, a person in control of land or a person who occupies or uses the land on which … any activity or process is or was performed or undertaken; or … any other situation exists, which causes, has caused or is likely to cause pollution of a water resource must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring". These measures may include, but are not limited to:

- Measures to cease, modify, or control any act or process causing the pollution.
- Compliance with any prescribed waste standard or management practice.
- Containment or prevention of the movement of pollutants.
- Remediation of the effects of the pollution.
- Remediation of the effects of any disturbance to the bed and banks of a watercourse.

The NWA also provides for pollution prevention measures, with particular emphasis on water resource pollution. In accordance, the licensee shall ensure that activities impacting upon water resources and effluent releases are monitored for compliance with the applicable regulations. Emergency incidents involving water resources are included in the Act, requiring the polluter to remediate and mitigate the impacts of such an emergency incident.

The DWS will provide a Record of Recommendation in terms of the NWA and any other associated policies, plans, programmes, guidelines and regulations to the CA as part of the WML application process.

## 6.3 Additional Applicable Legislation

Additional legislation applicable to the Project is listed in Table 6-2.

**Table 6-2: Summary of Applicable Legislation**

| Relevant Legislation | Sections | Applicability to the Project |
|---|---|---|
| **Constitution of South Africa, 1996 (Act No. 108 of 1996)** | Chapter 2 | Bill of Rights |
| | Section 24 | Environmental rights |
| | Section 25 | Rights in property |
| | Section 32 | Administrative justice |
| | Section 33 | Access to information |
| **National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)** | Sections 56 and 57 | Protection of threatened or protected species; and, |
| | Sections 65 -73 | The control of alien species, invasive species and genetically modified organisms. |
| **Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) and regulations** | Section 5, 6 | Implementation of control measures for alien and invasive plant species, especially in urban areas. |
| **National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)** | Section 32 | Control of dust |
| | Section 34 | Control of noise |
| | Section 35 | Control of offensive odours |
| **Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and regulations** | General Administration Regulations GN R929 of June 2003 | Material Safety Data Sheets must be made available at the request of any Interested and Affected Party (I&AP). |
| | Section 8 | General duties of employers to their employees. |

| Relevant Legislation | Sections | Applicability to the Project |
|---|---|---|
| | Section 9 | General duties of employers and self-employed persons to persons other than their employees. |
| **Hazardous Substances Act, 1973 (Act No. 15 of 1973) and regulations** | As Type 2, 3 and 4 waste may be disposed of at the existing Williston Landfill, the controls of the Hazardous Substances Act must thus be complied with. | |
| **Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947) and regulations** | Sections 3 to 10 | Control of the use of registered pesticides, herbicides (weed killers) and fertilisers. Special precautions must be taken to prevent workers from being exposed to chemical substances during alien vegetation control programmes. |
| **National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)** | Chapter 4, 5 | Fire prevention, management and control measures to be implemented |
| **National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977)** | Section 4 | Local Authority approval of plans to erect buildings like weighbridges, admin buildings, etc. |

## 6.4 Local Legislation and Policy Framework

The EIA process must consider the planning policies that govern the study area to ensure that the scale, density and nature of activities/developments are harmonious and in keeping with the sense of place and character of the area. The proposed environmental and infrastructure modifications must be viewed in the context of the planning policies from the following documents:

### 6.4.1 Karoo Hoogland LM Spatial Development Framework (SDF), 2006

A municipal SDF is the outcome of a Spatial Development Planning process undertaken by a municipal council (i.e. either a Metropolitan, District or Local Municipal Council) in accordance with the planning powers accorded to it in terms of the Municipal Structures Act, 1998 (Act No. 117 of 1998).

As part of the development strategies relating to the provision of adequate and reliable basic services within the Karoo Hoogland LM, it is indicated that the Williston landfill is to be licensed.

### 6.4.2 Integrated Development Plan (IDP), 2013/2014.

The 2014/2015 Karoo Hoogland LM IDP was compiled to be aligned with a range of National and Provincial policy documents. The portion of households (68.6%) with access to refuse removal is less than those resident in the Namakwa District (87.1%) and the Northern Cape (72%). The IDP indicates the requirement for an increase in access to refuse removal, as well as adequate operation and maintenance of existing infrastructure and equipment through licensing and upgrading of the Williston landfill site.

### 6.4.3 Integrated Waste Management Plan (IWMP), 2014-2019

The over-arching purpose of the IWMP is to ensure that waste management planning within Karoo-Hoogland LM is aligned with National policies and standards. In addition, it aims to ensure that waste management is sustainable, practical, implementable and acceptable to all key role players and parties expected to implement the plan, and that appropriate management frameworks and capacity are in place for the LM to delegate its responsibilities for delivery of waste management services.

The municipality identified that the shortage of refuse vehicles and the lack of funding for waste management are the two main issues that need to be addressed. In addition, the licensing of the Williston landfill will assist in bridging the following gaps identified:

- Towns and villages in the municipality that provide waste collection services dispose of waste in local disposal sites that are in some cases neither permitted in terms of the original DWS standards, nor licensed in terms of the NEMWA.
- There is little or no capacity to effectively monitor and quantify waste streams. None of the existing landfills have weighbridges, nor is there trained staff to accomplish this task. This greatly compromises strategic decision-making in relation to waste management.
- The LM lacks technical capacity and information management systems in relation to waste management and asset management in general. A Waste Management Officer is only now in the process of being formally designated as required by NEMWA.

# 7. PUBLIC PARTICIPATION PROCESS (PPP)

The Public Participation Process (PPP) is an integral part of the EIA process. The objectives of PPP in an environmental process are to provide sufficient and accessible information to stakeholders in an objective manner to assist them to:

- Raise issues of concern and suggestions for enhanced benefits;
- Verify that their issues have been recorded and considered in the environmental investigations;
- Assist in commenting on feasible alternatives;
- Contribute relevant local information and knowledge to the environmental assessment; and,
- Comment on the findings of the environmental assessment.

The approach towards any PPP is dependent on the details of the project. Each project has a particular geographic and technical nature, and hence the PPP should be structured accordingly. Where possible, and within the required statutory frameworks, it is also desirable to structure such a process to address the process needs of I&APs.

## 7.1 Identification and Registration of I&APs

At the time of compiling this report, the database contained 50 stakeholders across a range of sectors and spheres of government, including:

- National Government;
- Provincial Government;
- Local Government;
- Landowners;
- Agriculture;
- Business and Industry (mining and commercial); and,
- Environmental groups.

AECOM made an effort to ensure that individuals and/or organisations were identified from an institutional as well as a geographical point of view. Note that the I&AP database reflects all stakeholders for the project as a whole (i.e. for all allocated landfills to be licensed) within the Northern Cape and North West Provinces. Refer to **Appendix A** for the I&AP Register.

## 7.2 Announcement of the Proposed Project

Various mechanisms were used to create public awareness of the proposed WML application for the existing Williston landfill. An opportunity to participate in the EIA process and to register as an I&AP was announced as indicated below:

### 7.2.1 Media

Newspaper advertisements were placed in the following newspapers:

**Table 7-1: Project Announcement Newspaper advertisements**

| Newspaper | Distribution | Language | Date |
|---|---|---|---|
| **Noordwester** | Local | English | 11 September 2015 |
| **DF Advertiser** | Regional | English | 11 September 2015 |

Copies of the Newspaper Advertisements are included in **Appendix A**.

### 7.2.2 Notification Letter

A notification letter, including an invitation to participate, was distributed via email to identified I&APs announcing the project and the opportunities for participation. A copy of the notification letter is provided in **Appendix A**.

### 7.2.3 On-site Notices

Two (2) A2-sized site notices (Afrikaans and English) were erected at various public places in the project area on 8 October 2015.

**Table 7-2: Site Notice Locations**

| Site Notice No | Location |
|---|---|
| **1** | Williston Landfill |
| **2** | Karoo Hoogland Municipal Offices |

Copies and photographs of the site notices are provided in **Appendix A**.

## 7.3 Dissemination of Information

Information was disseminated to registered I&APs primarily by means of a Background Information Document (BID) and Notification letters.

### 7.3.1 Background Information Document

The BID has been useful in providing background information to the public on the proposed waste licence application for the existing Williston landfill. Furthermore, it provided information on the processes that have been followed and the contact details of the PPP Consultant. The BID was distributed to all registered I&APs. A copy of the BID is provided in **Appendix A**.

### 7.3.2 Draft Scoping Report Review Period

The DSR will be available for a thirty (30) calendar day review period to registered I&APs (excluding public holidays) from 25 November 2015 – 15 January 2016. The DSR will be available at the following venues:

**Table 7-3: Venues for draft Scoping Report**

| Venue | Address |
|---|---|
| **Karoo Hoogland Local Municipality** | 2 Mulder Street, Williston |
| **W K van der Spuy Public Library** | Herbs Street, Williston |

Electronic copies of the DSR will be made available on www.dealicenses2015.co.za.

## 7.4 Comment and Response Report

All issues and concerns raised by I&APs during the EIA process, will be recorded and responded too in the Comments and Responses Report (CRR) which will form part of the FSR. No comments have been received to date.

## 7.5 Final Scoping Report

Once the review period on the DSR has concluded, the report will be updated to a FSR together with the CRR. The FSR will then be submitted to the DENC for their approval.

# 8. DESCRIPTION OF POTENTIAL ENVIRONMENTAL IMPACTS

## 8.1 General

The purpose of this section is to provide a description of the environmental issues and anticipated impacts as required by Appendix 2 of the EIA Regulations (2014). This enables the EIA Report to be clearly focused by providing a framework for the impact assessment. The following environmental impacts have been identified and will be investigated during the EIA Phase of the process.

### 8.1.1 Planning, Design and Construction Phase

As this application is for the operation of the existing illegal Williston landfill site no impacts are associated with the planning, design and construction phase.

### 8.1.2 Operational Phase

The impacts anticipated during the operation of the existing Williston landfill are indicated in Table 8-1.

**Table 8-1: Anticipated impacts during operation**

| Potential Negative Impacts | Potential Positive Impact |
|---|---|
| • Increased traffic<br>• Increased emissions from vehicles<br>• Increased noise on site<br>• Health and safety risks on site<br>• Night-time and / or weekend fly tipping<br>• Landfill gas generation | • Increase in long term employment opportunities<br>• Increase in local business - direct i.e. contractors<br>• Increase in local businesses - indirect i.e. vehicle repairs<br>• Increased local supplier income from materials and services required once the landfill is licensed.<br>• Decrease in wind-blown litter<br>• Decrease in soil and water contamination due to liner and stormwater management implementation.<br>• Decrease in nuisance impacts (dust, odour) |

### 8.1.3 Decommissioning and Closure Phase

The capacity of the landfill will be determined during the EIA Phase. This represents the spatial limit of the landfill. Within the boundaries of the site, any area that requires closure (such as a consolidated waste stockpile), will be assessed during the EIA Phase.

Should the municipality consider expanding the existing footprint, then the municipality will need to conduct a separate feasibility study to determine future disposal needs of the municipality and the suitability of the site for expansion or whether the better option will be to close the site and establish a new facility at a new site.

# 9. PLAN OF STUDY FOR EIA

## 9.1 Introduction to the EIA Phase

A Plan of Study for the EIA has been prepared according to the process described in the EIA Regulations (2014) promulgated in terms of Section 24(5) of the NEMA, to provide the CA with adequate information to obtain authorisation, and proceed with the proposed activity.

The Plan of Study for EIA includes a description of the environmental issues that have been identified during the Scoping Phase and which will require further investigation and assessment.

## 9.2 EIA Phase

During the EIA Phase, the site will be classified according to the Waste Classification and Management Regulations promulgated in August 2013, as well as the DWS Minimum Requirements for Waste Disposal by Landfill. This will determine the level of detail required in the lining or capping designs of the various facilities, either during operations or for closure.

The landfill will be assessed in terms of the current impact on the environment and the nature of the status of the landfill (application for operations). The impacts assessed will cover operations, closure and decommissioning, as the site already exists.

During the EIA phase, a Draft EIR will be compiled, containing the following information:

- A description of the EAP that prepared the report;
- A detailed description of the proposed activity;
- A description of the need and desirability of the project and details of the alternatives that were investigated;
- A description of the environment that may be affected;
- A description of the PPP that was undertaken;
- Findings, recommendations and copies of specialist studies, if applicable;
- An indication of the method used to identify impact significance;
- An assessment of specific information required by the competent authority;
- A comparative assessment of all alternatives, where applicable;
- An assessment of each potentially significant impact;
- A description of any assumptions, uncertainties and gaps in knowledge;
- An opinion on whether the activity should be authorised or not and, if it should be authorised, under what conditions;
- An Environmental Impact Statement; and,
- A draft Environmental Management Programme (EMPr) for the full lifecycle of the Project.

### 9.2.1 Specialist Studies

#### *9.2.1.1 Ecological*

Vegetation Assessment

Aerial photographs of the site will be investigated and habitat units identified. A list of the species that has been recorded in the quarter degree grid (3120BD) will be downloaded from SIBIS (http://sibis.sanbi.org/). From this list, a list of Red Data species, medicinal plant species and invasive plant species will be extracted. These lists will be used to inform the assessment.

A site visit will be conducted to record the vegetation in each of the habitat units on site, along random transect walks, on site and adjacent to the site. The habitat adjacent to the site will be assumed to be similar to the

habitat prior to commissioning of the landfill. A search for the Red Data species will also be conducted on site and adjacent to the site.

Fauna Assessment

Species lists of species that have been recorded in the area will be downloaded from the Virtual Museum on the Animal Demography Unit website (http://vmus.adu.org.za/), and a bird species list will be downloaded from the South African Bird Atlas Project (SABAP2) website (http://sabap2.adu.org.za/). A list of the threatened bird species from the area will also be downloaded from SIBIS. These lists will include species that are recorded in the area by various observers and which may therefore be present on site.

A site visit is to be conducted to record species along random walks, mainly on the edges of the landfill and adjacent to the landfill, but also in the surrounding areas. The site will mostly be investigated for available habitat and species observed on site during the site visit. Potential habitat for Red Data species will also be noted in the surrounding area. No trapping will take place.

## 9.3 Impact Assessment Methodology

The impacts identified during the Scoping Phase, as described in Section 8, will be assessed using the methodology described below.

### 9.3.1 Impact Assessment Criteria

The criteria used for the assessment of potential impacts are described in **Table 9-1.**

**Table 9-1: Impact Assessment Criteria**

| Criteria | Description |
|---|---|
| **Nature** | Includes a description of what causes the effect, what will be affected and how it will be affected. |
| **Extent** | Physical and spatial scale of the impact. |
| **Duration** | Lifetime of the impact is measured in relation to the lifetime of the landfill. |
| **Intensity** | Examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment. |
| **Probability** | This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the lifecycle of the activity, and not at any given time. |
| **Status** | Description of the impact as positive, negative or neutral, and direct or indirect. |
| **Significance** | Synthesis of the characteristics described above and assessed as low, medium or high. Distinction will be made for the significance rating without the implementation of mitigation measures and with the implementation of mitigation measures. |

**Extent**

The physical and spatial scale of the impact is classified below.

**Table 9-2: Description of Extent Criteria**

| Description | Explanation | Scoring |
|---|---|---|
| **Footprint** | Impacted area extends only as far as the activity footprint. | 1 |
| **Site** | Impact could affect the whole, or a significant portion of the site. | 2 |
| **Regional** | Impact could affect the area around the site including neighbouring farms, transport routes and/or adjoining towns. | 3 |
| **National** | Impact could have an effect that expands throughout the country (South Africa). | 4 |
| **International** | Impact has international ramifications that go beyond the boundaries of South Africa | 5 |

## Duration

The lifetime of the impact is measured in relation to the lifetime of the proposed operation of the existing Williston landfill.

**Table 9-3: Description of Duration Criteria**

| Description | Explanation | Scoring |
|---|---|---|
| **Short term** | Impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than any of the development phases. | 1 |
| **Short to medium term** | Impact will be relevant through to the end of the construction phase. | 2 |
| **Medium term** | Impact will last up to the end of the development phases, where after it will be entirely negated. | 3 |
| **Long term** | Impact will continue or last for the entire operational lifetime of the development, but will be mitigated by direct human action or by natural processes thereafter. | 4 |
| **Permanent** | The only impact class that is non-transitory. Mitigation by man or natural process will not occur in such a way or time span that the impact can be considered transient. | 5 |

## Intensity

The assessment of the intensity of the impact will be measured using the criteria listed in the following table.

**Table 9-4: Description of Intensity Criteria**

| Description | Explanation | Scoring |
|---|---|---|
| **Low** | Impact alters the affected environment in such a way that the natural processes or functions are not affected. | 2 |
| **Low-Medium** | Impact alters the affected environment in such a way that the natural processes or functions are slightly affected. | 4 |
| **Medium** | Affected environment is altered, but functions and processes continue, albeit in a modified way. | 6 |
| **Medium-High** | Affected environment is altered, and the functions and processes are modified immensely. | 8 |
| **High** | Function or process of the affected environment is disturbed to the extent where the function or process temporarily or permanently ceases. | 10 |

## Probability

Probability describes the likelihood of the impact(s) occurring for any length of time during the lifecycle of the activity, and not at any given time. The following table shows the classes.

**Table 9-5: Description of Probability Criteria**

| Description | Explanation | Scoring |
|---|---|---|
| **Improbable** | Possibility of the impact occurring is none, due either to the circumstances, design or experience. The chance of this impact occurring is thus zero (0%). | 1 |
| **Possible** | Possibility of the impact occurring is very low, either due to the circumstances, design or experience. The chances of this impact occurring is defined as 25%. | 2 |
| **Likely** | There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of this impact occurring is defined as 50%. | 3 |
| **Highly likely** | It is most likely that the impacts will occur at some stage of the Development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75%. | 4 |
| **Definite** | Impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied upon. The chance of this impact occurring is defined as 100%. | 5 |

## Confidence

The level of knowledge or information that the EAP project team or a specialist had in their judgement is rated as shown in the following table. Note that this criterion is not given a numerical value.

**Table 9-6: Description of Confidence Criteria**

| Description | Explanation |
|---|---|
| Low | Judgement is based on intuition and not on knowledge or information. |
| Medium | Judgement is based on common sense and general knowledge. |
| High | Judgement is based on scientific and/or proven information. |

## Reversibility

Reversibility is the ability of the affected environment to recover from the impact, with or without mitigation. Note that this criterion is not given a numerical value.

**Table 9-7: Description of Reversibility Criteria**

| Description | Explanation |
|---|---|
| Yes | The affected environment will be able to recover from the impact. |
| No | The affected environment will be unable to recover from the impact that is permanently modified. |

## Replaceability

Replaceability is an indication of the scarcity of the specific set of parameters that make up the affected environment. That is, if lost, can the affected environment be (a) recreated, or (b) is it a common set of characteristics and thus if lost is not considered a significant loss. Note that this criterion is not given a numerical value.

**Table 9-8: Description of Replaceability Criteria**

| Description | Explanation |
|---|---|
| Yes | Affected environment is replaceable, that is, an irreplaceable resource is not damaged, or the resource is not irreplaceable (not scarce). |
| No | Affected environment is irreplaceable. |

## Level of Significance

Based on the above criteria, the significance of issues will be determined using the following formula:

$$Significance = (Extent + Duration + Intensity) \times Probability$$

This is the importance of the impact in terms of physical extent and time scale, and is rated as follows:

**Table 9-9: Impact Assessment Significant Rating**

| Significance | Description | Scoring |
|---|---|---|
| No Impact | There is no impact | 0 – 10 |
| Low | Impacts are less important. Some mitigation is required to reduce the negative impacts. | 11 – 30 |
| Medium | Impacts are important and require attention. Mitigation is required to reduce the negative impacts. | 31 – 60 |
| High | Impacts are of high importance. Mitigation is essential to reduce the negative impacts. | 61 – 89 |
| Fatal Flaw | Impacts present a fatal flaw, and alternatives must be considered or the project rejected. | 90 – 100 |

## 9.4 Environmental Management Programme

A Draft EMPr will be included as part of the draft EIA report which will be made available for public review; after which, it will be finalised and submitted as part of the final EIA Report to the DENC. The EMPr outlines the impacts and mitigation measures for the operation and maintenance; and decommissioning phases of the Project. The EMPr will comprise:

- Summary of Impacts: The predicted negative environmental impacts for which mitigation is required, and positive impacts requiring enhancement.
- Description of mitigation measures: The EMPr identifies feasible and cost-effective mitigation measures to reduce significant negative environmental impacts to acceptable and legal levels. Mitigation measures are described in detail and will be accompanied by designs, equipment descriptions, and operating procedures, where appropriate, as well as descriptions of technical aspects of implementing the mitigation measures.
- Description of monitoring programme: The monitoring programme indicates the linkages between impacts, indicators to be measured, measurement methods and definition of thresholds that will signal the need for corrective actions.
- Emergency Action Plan: The identification of possible accidents during the construction and operation phase of the project, with measures on how they will be prevented and/or managed.
- Institutional arrangements depict and define the responsibilities for mitigation and monitoring actions.
- Legal enforceability: The key legal considerations with respect to the EMPr are:
    - Legal framework for environmental protection.
    - Legal basis for mitigation.
- Implementation schedule and reporting procedures that specify the timing, frequency and duration of the mitigation measures.
- Description of requirements for record keeping, reporting, review, auditing and updating the EMPr.
- Description of the on-going PPP process to be undertaken during the operation of the Williston landfill by means of a Landfill Monitoring Committee.

## 9.5 Draft EIA Report Availability and Public Review

Subsequent to the approval of the FSR, a notification letter will be distributed to all registered I&APs informing them of the approval of the FSR and the availability of the draft EIA report. The Draft EIA report and EMPr will be made available to the public for comment for a period of 30 days (as per 2014 EIA Regulations). The draft EIA report will be made available at the same public venues used during the Scoping Phase. Electronic copies can be downloaded from www.dealicenses2015.co.za.

## 9.6 Final EIA Report

Following the review period, the draft EIA report will be updated with comments received from the public to produce a final EIA report. The final EIA report will be submitted to the DENC for consideration and decision-making.

## 9.7 Decision-making Phase

Once the WML (positive or negative) has been issued, all registered I&APs will be notified of the decision and have the opportunity to appeal the decision should they not agree with the authorisation issued or any conditions of authorisation.

# 10. CONCLUSION

The licensing of the illegal Williston landfill is in accordance with an initiative driven by the DEA to ensure the legal compliance of all municipal landfills, which in turn ensures appropriate and effective environmental management of the sites. The S&EIR application process is currently in the Scoping Phase, and its main purpose is to identify and investigate issues related to the proposed Project and list potentially significant impacts that require further assessment in the EIA Phase.

This DSR contains issues and impacts identified by the project team. The Plan of Study for the remainder of the EIA process is also provided. This DSR is currently available for public comment over a period of 30 days to provide I&APs with an opportunity to raise any concerns about the information presented in the report and for them to raise any other issues related to the proposed Project.

Comments received during the public review period will be incorporated into the FSR, to be submitted to the DENC for their approval, after which the EIA Phase of the S&EIR application process will commence.

# 11. REFERENCES

DEAT, 2010. Final Draft Sector Guidelines for the EIA Regulations. Department of Environmental Affairs, Pretoria.

Karoo Hoogland Municipality, Draft Revised Integrated Development Plan (IDP), 2015-2016.

Draft Revised Integrated Development Plan (IDP), Karoo Hoogland Municipality, 2015-2016.

Low, A.B., Rebelo, T.C. 1998. Vegetation of South Africa, Lesotho and Swaziland. Department of

Environmental Affairs and Tourism, Pretoria.

Mucina, L., Rutherford, M.E. and Powrie, I.W. (editors) 2005. Vegetation map of South Africa, Lesotho and Swaziland, 1: 1 000 000 Scale Sheet MAPS South African National Biodiversity Institute, Pretoria.

# Appendix A
# Public Consultation Documentation

# Appendix B
# WML Application Form

# Appendix C
# Site Photographs

# Appendix D
# EAP CV

# Appendix E
# Project Team CVs